

April 11, 2019

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VIA OVERNIGHT DELIVERY

Jill Rolfe, Director
Coos County Planning Department
225 N Adams St
Coquille, OR 97423

**Re: Concurrent Land Use Applications by Jordan Cove Energy Project L.P.
Various Proposals Related To Liquefied Natural Gas Terminal
County File Nos. HBCU-19-003, FP-19-003**

Dear Jill:

This office represents Jordan Cove Energy Project L.P. ("JCEP"). With this letter, please accept JCEP's concurrent land use applications for approval of various facilities associated with JCEP's liquefied natural gas facility. In support of these applications, enclosed please find the original and two copies of the following:

- Completed and signed Coos County Land Use Application form, Compliance Determination form, Driveway Verification form, and Floodplain Application form, with attachment containing legal descriptions of subject properties;
- Property owner consent form from Fort Chicago Holdings II U.S. LLC;
- Check payable to "Coos County" for the application fee deposit (\$7,012.70);
- Narrative explaining the proposal and how it complies with applicable approval criteria, with the following exhibits:
 - Exhibit 1 - Coos County File No. HBCU-15-05/FP-15-09, Order No. 16-08-071PL;
 - Exhibits 2-4 - Graphics depicting the locations of application proposals;
 - Exhibit 5 - Description of wastewater treatment facilities;

Jill Rolfe, Director

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- Exhibit 6 - Graphic depicting temporary barge berth proposal;
- Exhibit 7 - Graphic depicting Pile Dike Rock Apron proposal;
- Exhibit 8 - Archaeological Investigations Summary by Historical Research Associates, Inc.;
- Exhibit 9 - Memorandum of Agreement between JCEP and Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians, with attachments.

We are also sending an electronic copy of these materials to the County. We are hopeful that, upon receipt of these materials, the County will deem the applications complete and will process them for review as soon as possible.

Seth King (SKing@perkinscoie.com) and I are JCEP's representatives in this matter. Please copy both of us on all correspondence, notices, staff reports, and decisions in this matter.

If you have any questions or need any additional information, do not hesitate to contact me. We look forward to working with the County toward approval of this request. Thank you for your courtesies in this matter.

Very truly yours,



Steven L. Pfeiffer

SLP

Enclosures

cc: Seth King (via email) (w/encls.)
David Delmar (via email) (w/encls.)
Client (via email) (w/encls.)

August 9, 2019

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VIA EMAIL AND OVERNIGHT DELIVERY

Jill Rolfe, Director
Coos County Planning Department
225 N Adams St
Coquille, OR 97423

**Re: Concurrent Land Use Applications by Jordan Cove Energy Project L.P.
Various Proposals Related to Liquefied Natural Gas Terminal
County File Nos. - Response to Incomplete Determination**

Dear Jill:

This office represents Jordan Cove Energy Project L.P. ("JCEP"). With this letter, please accept JCEP's revised Application narrative and associated exhibits addressing your incomplete determination dated May 9, 2019. The attached narrative is intended as a full replacement of the initial Application narrative submitted on April 9, 2019. This submittal includes the following as a supplement to the existing information included in the existing County files relating to this Application:

- Revised narrative explaining the proposal and how it complies with applicable approval criteria, with the following additional exhibits:
 - Exhibit 10 - Development suitability analysis report by SHN Consulting.
 - Exhibit 11 - Flood Overlay zone compliance analysis report by SHN Consulting.
 - Exhibit 12 - Southwest Oregon Regional Airport - County Airport Overlay zone surfaces.
 - Exhibit 13 - Southwest Oregon Regional Airport - vertical imaginary surfaces.
 - Exhibit 14 - Southwest Oregon Regional Airport - Mater Plan Noise Contours.



Jill Rolfe, Director

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- Exhibit 15 - FAA 7460 Notices regarding pending Application - CCZLDO 4.11.435 compliance.

In addition, we have included the current deeds of record for the subject property under the JCEP ownership, as well as additional consents from the owners of the other affected properties.

We are also sending an electronic copy of these materials to the County. We are hopeful that, upon receipt of these materials, the County will deem the revised application complete for purposes of scheduling the initial Type III hearing.

Seth King (SKing@perkinscoie.com) and I are JCEP's representatives in this matter. Please copy both of us on all correspondence, notices, staff reports, and decisions in this matter.

If you have any questions or need any additional information, do not hesitate to contact me. We look forward to working with the County toward approval of this request. Thank you for your courtesies in this matter.

Very truly yours,



Steven L. Pfeiffer

SLP:rsr

Enclosures

cc: Seth King (via email) (w/encls.)
Client (via email) (w/encls.)



**BEFORE THE PLANNING DIRECTOR
OF COOS COUNTY, OREGON**

In the Matter of a Concurrent Request to Authorize Development of Uses and Activities In Conjunction with the Jordan Cove Energy Project on the North Spit.

NARRATIVE FILED BY JORDAN COVE ENERGY PROJECT L.P. IN SUPPORT OF APPLICATIONS FOR CONDITIONAL USE ESTUARINE PERMITS, COMPLIANCE DETERMINATIONS, DRIVEWAY CONFIRMATION, AND A FLOODPLAIN DEVELOPMENT PERMIT

I. Land Use Requests

Jordan Cove Energy Project L.P. (“JCEP”) intends to develop a liquefied natural gas facility and port terminal (“LNG Terminal”) in Coos County (“County”). JCEP has submitted multiple applications in various local jurisdictions (including the County) regarding the LNG Terminal. With this application (“Application”), JCEP seeks concurrent land use approvals in accordance with the Coos County Zoning and Land Development Ordinance (“CCZLDO”) and the Coos Bay Estuary Management Plan (“CBEMP”) for Administrative Conditional Uses (“ACU”), a driveway confirmation, Compliance Determinations (“CD”), a Hearings Body Conditional Use (“HBCU”), and a Floodplain Development Permit, for specific uses and activities within the County that will provide necessary infrastructure for the construction and operation of the LNG Terminal at locations both within and near the LNG Terminal.

This Application recognizes that currently pending before the County is the remand of a previous County authorizations for the LNG Terminal facility in 2016, which the County approved in County File No. HBCU-15-05/FP-15-09, Order No. 16-08-071PL. *See* Exhibit 1. That approval is currently on remand (the “Application On Remand”). This Application proposes modification of certain project components that were approved in the 2016 decision. For that reason, the narrative for this Application is generally organized in two parts. First, in Section II.A., are JCEP’s entirely new proposals. Second, in Section II.B. are modified proposals for which JCEP seeks new land use approval.

This Application proposes the following new developments and activities:

- A meteorological station in the 4-CS zone;
- An industrial wastewater pipeline in the IND zone;
- A concrete batch plant in the IND zone;

- A safety, security, and emergency preparedness, management and response center in the IND zone;
- A helipad in the IND zone;
- Corporate and administrative offices in the IND zone;
- Temporary workforce housing in the IND zone;
- A wastewater treatment facility in the IND zone;
- A park and ride in the IND zone;
- Temporary construction laydown uses and activities in the IND, 6-WD, 3-WD, and 3-NWD zones;
- A temporary barge berth in the 6-DA zone;
- Shoreline stabilization within the 5-WD zone;
- Pile dike rock apron in the 5-DA zone;
- Provision of primary access to the LNG Terminal in the 6-WD zone (driveway confirmation); and
- Temporary dredge transport lines in the 6-DA, 7-NA, 13B-NA, and 14-DA zones.

As noted above, this Application also proposes the following developments that are the subject of modifications in the nature and/or location of uses approved in the above referenced County authorization in 2016 and which require new land use approval due to these modifications:

- Gas processing in the 6-WD zone; and
- A fire station in the 6-WD zone.

II. Applicable Approval Criteria

A. New Proposals

This Application seeks approval of the following new proposals. Some proposals are subject to an ACU, some are subject to a CD, and one is subject to an HBCU. In addition, several proposals will require a floodplain development permit. Sections II.A. and II.B. describe the various proposals and how they comply with applicable approval criteria. Sections II.D. and II.E. provide collective responses to additional approval criteria applicable to the proposals.

1. Meteorological Station

JCEP proposes to construct a meteorological station in the County's 4-CS CBEMP zone. Exhibit 2 shows the proposed location of the meteorological station, which is on the west side of the lagoon adjacent to the northern extent of the snowy plover nesting area. The station will be mounted on an approximately 40-foot-high lattice tower or wooden pole, with a 30-foot-by-30-foot triangular or square footprint. The purpose of the meteorological station is to provide real-time meteorological data for ships transporting liquefied natural gas and their support vessels, both as they enter and leave the Coos Bay Deep Draft Navigation Channel.

4-CS Zone - Allowed Uses - CCZLDO 3.2.256

The 4-CS zone permits, subject to general conditions, "low-intensity utilities." Furthermore, in accordance with CCZLDO 3.2.175, all uses in the 4-CS zone must be consistent with the zone's "management objective."

RESPONSE: CCZLDO 2.1.200 defines "low-intensity utility" as "public service structures" that "consist of communication facilities[.]" The meteorological station is a "communication facility" that serves the public. The station's purpose is to communicate weather conditions to maritime vessels to ensure the safety of navigation into and out of port. Such communication is a public service because it will enhance the viability, safety, and efficiency of maritime navigation into and out of the Port of Coos Bay, which is essential for the County's economy.

Therefore, the meteorological station is permitted in the 4-CS zone as a "low-intensity utility," subject to general conditions and the zone's "management objective." For the following reasons, the meteorological station satisfies the zone's management objective and applicable general conditions.

4-CS Zone - Management Objective - CCZLDO 3.2.255

This shoreland district shall be managed to maintain the existing lagoon and its ability to handle effluents and to allow development of a freshwater marsh.

RESPONSE: The meteorological station will not affect the 4-CS zone's purpose of maintaining the existing lagoon and its ability to handle effluents and to allow development of a freshwater marsh. The station is a small, ground-based facility which has the limited purpose of communicating weather data to ensure the safety of maritime navigation in and out of the port. The station is not within the lagoon or the nearby marsh, and the station will not adversely affect these features. Therefore, the meteorological station satisfies the 4-CS zone's management objective.

4-CS Zone - General Conditions - CCZLDO 3.2.256

- 1. Uses in this district are only permitted as stated in Policy #14 "General Policy on Uses within Rural Coastal Shorelands." Except as permitted outright, or where findings are made in this Plan, uses are only allowed subject to the findings in this policy.**

RESPONSE: This general condition does not apply to “low-intensity utilities,” which are permitted outright in the 4-CS zone. The condition applies “except as permitted outright.” CCZLDO 3.2.256 allows “low-intensity utilities” with a “P” symbol. CCZLDO 3.2.150 explains that the “P” symbol “means the use or activity is permitted outright[.]” Therefore, CBEMP Policy # 14 does not apply to the meteorological station.

2. All permitted uses are subject to Policy #13 which states general use priorities in coastal shorelands

RESPONSE: The meteorological station complies with CBEMP Policy #13 for the reasons discussed in section II.E. of this Application.

3. All permitted uses in dune areas shall be consistent with the requirements of Policy #30.

RESPONSE: The meteorological station complies with Policy #30 for the reasons discussed in Section II.E. of this Application.

4. In rural areas (outside of UGBs) utilities, public facilities and services shall only be provided subject to Policies #49, #50, and # 51.

RESPONSE: The meteorological station complies with Policies #49, #50, and #51 for the reasons discussed in Section II.E. of this Application.

5. Inventoried resources requiring mandatory protection in this unit are subject to Policies #17 and #18.

RESPONSE: The meteorological station complies with Policies #17 and #18 for the reasons discussed in Section II.E. of this Application.

4-CS Zone - General Development Standards - CCZLDO 3.2.100

Minimum Lot Size - None

Lot Dimension/Street Frontage - 20’ Minimum Lot Width, No Minimum Lot Depth; 20’ Minimum Street Frontage

Setbacks - 35’ from centerline of adjacent right-of-way or 5’ from adjacent right-of-way boundary if no adjacent right-of-way

Building Heights/Parking/Road Standards - No Maximum Building Height; Required parking subject to staff determination via CCZLDO 7.5.100.5.

RESPONSE: The meteorological station will comply with the above general development standards of the 4-CS zone.

Therefore, for the above reasons and the reasons further set forth in Section II.E. of this Application, the meteorological station with all applicable approval criteria of the 4-CS zone. The County should approve the meteorological station.

2. Industrial Wastewater Pipeline

JCEP proposes to construct a new industrial wastewater pipeline (“IWWP”) at the location shown in Exhibit 3. The IWWP will support the function of various facilities that JCEP has proposed that are associated with the LNG Terminal, including by transporting industrial waste to an ocean outfall. Most of the IWWP is within the public right-of-way (Trans Pacific Parkway). However, as Exhibit 3 shows, the easternmost portion of the IWWP exits the public right-of-way and crosses the County’s IND and 7-D zones.

CCZLDO 4.3.200 - IND Zone - Allowed Uses

CCZLDO 4.3.200 permits in the IND zone, subject to a Compliance Determination process, a “Utility Facility - Service Lines in conjunction with a Utility Facility.” Compliance Determination uses in the IND zone must comply with CCZLDO 4.3.220, 4.3.225, 4.3.330, and the Special Development Considerations and Overlays of CCZLDO 4.11.

RESPONSE: The IWWP qualifies as a “Utility Facility - Service Lines in conjunction with a Utility Facility.” CCZLDO 4.3.210.76.e. explains that “Utility Facility - Service Lines” are “distribution line[s] for supplying a utility service including but not limited to telephone, power, water, sewer, etc.” The IWWP is a utility line to supply wastewater services. Therefore, it is allowed in the IND zone subject to a CD. The IWWP complies with CCZLDO 4.3.220, 4.3.225, 4.3.230, and CCZLDO 4.11 for the reasons discussed in Section II.D. of this Application.

7-D Zone - Allowed Uses - CCZLDO 3.2.285

The 7-D zone permits, subject to general conditions, “high-intensity utilities.” Furthermore, in accordance with CCZLDO 3.2.175, all uses in the 7-D zone must be consistent with the zone’s “management objective.”

RESPONSE: CCZLDO 2.1.200 defines “high-intensity utility” as storm water and treated waste water outfalls (including industrial waste water). The IWWP is a pipeline that transports industrial waste from the LNG facility to its ocean outfall. Therefore, the IWWP is permitted in the 7-D zone as a “high-intensity utility,” subject to general conditions and the zone’s “management objective.” For the following reasons, the IWWP satisfies the zone’s management objective and applicable general conditions.

7-D Zone - Management Objective - CCZLDO 3.2.285

This shoreland district, which borders a natural aquatic area, shall be managed for industrial use. Continuation of and expansion of existing non-water-dependent/non-water-related industrial uses shall be allowed provided that this use does not adversely impact Natural Aquatic District #7. In addition, development shall not conflict with state and federal requirements for the wetlands located in the northwest portion of this district.

RESPONSE: The 7-D zone's management objective explains that the County must manage the zone for industrial use. The IWWP is an industrial wastewater pipeline that will support industrial uses associated with the LNG facility to construct on the North Spit by transporting industrial waste associated with that facility to its ocean outfall. Further, the 7-D zone allows high-intensity utilities, which include the IWWP. The 7-D zone's management objective allows "continuation and expansion of existing non-water-dependent/non-water-related industrial uses ... provided that this use does not adversely impact" the 7-NA zone. The IWWP is not a "continuation of [or] expansion of existing non-water-dependent/non-water-related industrial uses." The IWWP is, rather, a new proposal, and it is associated with, and supportive, of water-dependent development. Therefore, the 7-D zone's management objective does not require JCEP to show that the IWWP will not impact the 7-NA zone. Finally, the IWWP will not conflict with state and federal requirements for the wetlands located in the 7-D zone. Although the County's Shoreland Values Inventory Map shows a wetland near the area for the IWWP, the IWWP is not within a delineated wetland. Exhibit 3 includes a site plan depicting the IWWP and the delineated wetland. The site plan shows that the IWWP does not cross the wetland.

7-D Zone - General Conditions - CCZLDO 3.2.286

- 1. Uses in this district are only permitted as stated in Policy #14 "General Policy on Uses within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in this Plan, uses are only allowed subject to the findings in this policy.**

RESPONSE: This general condition does not apply to "high-intensity utilities," which are permitted outright in the 7-D zone. The condition applies "except as permitted outright." CCZLDO 3.2.286 allows "high-intensity utilities" with a "P" symbol. CCZLDO 3.2.150 explains that the "P" symbol "means the use or activity is permitted outright[.]" Therefore, CBEMP Policy # 14 does not apply to the IWWP .

- 2. Inventoried resources requiring mandatory protection in this unit district are subject to Policies #17 and #18.**

RESPONSE: The IWWP complies with CBEMP Policies #17 and 18 for the reasons discussed in Section II.E. of this Application.

- 3. All permitted uses and activities shall be consistent with Policy #23 requiring protection of riparian vegetation.**

RESPONSE: The IWWP complies with CBEMP Policy #23 for the reasons discussed in Section II.E. of this Application.

- 4. All permitted uses shall be consistent with the respective flood regulations of local governments as required in Policy #27.**

RESPONSE: The IWWP complies with CBEMP Policy #27 for the reasons discussed in Section II.E. of this Application.

5. **All permitted uses in dune areas shall be consistent with the requirements of Policy #30.**

RESPONSE: The IWWP complies with CBEMP Policy #30 for the reasons discussed in Section II.E. of this Application.

6. **In rural areas (outside of UGBs) utilities, public facilities, and services shall only be provided subject to Policies #49, #50, and #51.**

RESPONSE: The IWWP complies with CBEMP Policies #49, 50 and 51 for the reasons discussed in Section II.E. of this Application.

7-D Zone - General Development Standards - CCZLDO 3.2.100

RESPONSE: The general development standards of CCZLDO 3.2.100 include standards for lot size, width and depth, building height, setbacks, and parking. These standards cannot logically be applied to an underground pipeline.

Therefore, for the above reasons, and the reasons further discussed in Sections II.E. and II.D. of this Application, the IWWP complies with all applicable approval criteria. The County should approve the IWWP.

3. Concrete Batch Plant

JCEP proposes to construct a concrete batch plant in the IND zone. Exhibit 2 shows the location for the plant (Boxcar Hill). The plant will provide concrete supply for construction of the LNG Terminal and related facilities. The concrete needed for construction is approximately 130,000 cubic yards. Local aggregate sources have been investigated and have been found to have deficiencies (chert inclusions) that preclude their use for concrete. Regional sourcing for the availability of on-spec aggregates has been confirmed. A concrete washout area will be located adjacent to the batch plant to allow for containment and disposal of waste water related to concrete batching operations. The disposal of concrete waste water will follow all necessary environmental regulations. Any discharges from the concrete batch plant will be subject to measures that minimize the potential for accidental discharges during construction, and additional best practices, including containment for washout, will be utilized. JCEP will employ dust suppression techniques to mitigate any impacts to air quality from concrete batching. The batch plant will operate for 30-36 months.

IND Zone - Allowed Uses - CCZLDO 4.3.200

CCZLDO 4.3.200 permits in the IND zone subject to a Hearings Body Conditional Use the “mineral processing” of “aggregate.” A Hearings Body Conditional Use in the IND zone must comply with CCZLDO 4.3.220, 4.3.225, 4.3.230, and the Special Development Considerations and overlay zones of CCZLDO 4.11.

RESPONSE: The concrete batch plant qualifies as a “mineral processing” of “aggregate” use and is thus allowed in the IND zone subject to an HBCU. CCZLDO 2.1.200 defines “aggregate processing” as “the act of processing an aggregate resource into a refined product.” The purpose

of the concrete batch plant is to process aggregate into concrete, a refined product, for use in constructing the LNG Terminal. Therefore, the plant qualifies as an HBCU in the IND zone. The plant satisfies the applicable approval criteria of CCZLDO 4.3.220, 4.3.225, 4.3.230 and 4.11 for the reasons discussed in Section II.D. of this Application.

Therefore, for the reasons discussed above and in Section II.D. of this Application, the County should approve the plant.

4. Emergency Preparedness Response Center

JCEP proposes to construct in the IND zone an emergency preparedness and response center, to be known as the Southwest Oregon Regional Safety Center (“SORSC”). The SORSC will be located adjacent to the LNG Terminal and will include an adjacent administration building. Exhibit 2 shows the location JCEP proposes for the SORSC and the administration building (South Dunes). The SORSC will manage safety, security and emergency response for the LNG Terminal and related facilities. The facility will provide a combined safety center for Jordan Cove Security Center, Sheriff’s Department, Sheriffs/911 Dispatch, and the Emergency Operations Center. The SORSC facility houses surveillance, communications, command and control systems, and supports security and response operations in the JC LNG area of operations and provides emergency dispatch to the entirety of Coos County. The goal of this facility is to fully support safety and security requirements of the LNG Terminal and related facilities. It is also intended to serve as a cornerstone to improve communications between individual agencies and provide a platform for collaboration. This will increase efficiency of operations and improve the efficacy of emergency response throughout Coos County.

IND Zone - Allowed Uses - CCZLDO 4.3.200

CCZLDO 4.3.200 permits in the IND zone, subject to a Compliance Determination, “emergency preparedness centers.” A Compliance Determination use in the IND zone must comply with CCZLDO 4.3.220, 4.3.225, 4.3.230, and the Special Development Considerations and Overlays of CCZLDO 4.11.

RESPONSE: The SORSC is allowed in the IND zone as an “emergency preparedness center,” subject to a CD process¹. Although the CCZLDO does not define “emergency preparedness center,” the purpose and function of the SORSC is to manage safety, security, and emergency responsiveness. Therefore, it qualifies as an emergency preparedness center. Moreover, the SORSC complies with CCZLDO 4.3.220, 4.3.225, 4.3.230, and 4.11 for the reasons discussed in Section II.D. of this Application.

Therefore, for the reasons discussed above and in Section II.D. of this Application, the County should approve the SORSC.

¹ Although LUBA remanded the County’s 2016 LNG Terminal decision because it did not adopt adequate findings explaining why the SORSC was permitted as an accessory use in the IND zones the County has amended its land use regulations to permit a new primary use type (“emergency preparedness center”) that applies to the SORSC. Therefore, LUBA’s remand does not restrict approval of the SORSC in this Application.

5. Helipad

JCEP proposes to construct a helipad on the site of the SORSC. The purpose of the helipad is to facilitate emergency incident management response by enabling enhanced emergency evacuation of or access to the LNG Terminal site.

IND Zone - Allowed Uses - CCZLDO 4.3.200

The IND zone permits, subject to a Compliance Determination, “Accessory uses and structures to Emergency Services and Governmental Services include storage caches and standby power generating equipment.” A Compliance Determination use in the IND zone must comply with CCZLDO 4.3.220, 4.3.225, 4.3.230 and the Special Development Considerations and Overlays of 4.11.

RESPONSE: The helipad is an accessory use to the SORSC, which is an emergency preparedness and response center, which is a type of emergency services and governmental services use. CCZLDO 2.1.200 defines “accessory use” as “a use, building or structure that is customarily incidental and subordinate to the principal use, main building or structure, and subordinate in extent, area and purpose to the principal use.” The helipad is incidental and subordinate to the SORSC in extent, area, and purpose. It is a parking area for an emergency response vehicle, and the SORSC is an emergency response facility. Therefore, the helipad is allowed in the IND zone subject to a CD and the approval criteria of CCZLDO 4.3.220, 4.3.225, 4.3.230 and 4.11. The helipad satisfies those criteria for the reasons set forth in Section D. of this Application. Therefore, the helipad satisfies all the approval criteria for a CD in the IND zone. The County should approve the helipad.

6. Administration Building

JCEP proposes to develop in the IND zone an administration building adjacent to the SORSC. The administrative and corporate offices will be located in the administration building, adjacent to the SORSC. Exhibit 2 shows the location JCEP proposes for the administration building. The administration building will provide business, administrative, and information management support for the operations of the LNG Terminal and related facilities.”

IND Zone - Allowed Uses - CCZLDO 4.3.200

CCZLDO 4.3.200 permits in the IND zone subject to a Compliance Determination “Accessory Development to industrial use.” Compliance Determination uses in the IND zone are subject to CCZLDO 4.3.220, 4.3.225, 4.3.230, and the Special Development Considerations and Overlays of CCZLDO 4.11

RESPONSE: The area to construct the administration building is within the County’s IND zone. The administration building qualifies as an “accessory use” to the LNG Terminal, which is a primary industrial use. CCZLDO 2.1.200 defines “accessory use” as “A use, building or structure that is (1) customarily incidental and subordinate to the principal use, main building or structure, and (2) subordinate in extent, area and purpose to the principal use.” The administration building is a building/structure that is customarily incidental and subordinate to the LNG Terminal. The administration building’s purpose is to provide business, administrative,

and information management support for the operations of the LNG Terminal and related facilities. It would not exist without the LNG Terminal. The administration building is also subordinate in extent and area to the LNG Terminal because it is smaller than and co-located with the various components of the LNG Terminal. JCEP requires the administration building on the North Spit because proximity to the LNG Terminal is necessary for the administration building to effectuate its supportive role. Finally, the administration building satisfies the applicable approval criteria of CCZLDO 4.3.220, 4.3.225, 4.3.230 and 4.11, for the reasons set forth in Section II.D. of this Application.

Therefore, for the reasons discussed above and in Section II.D. of this Application, the County should approve the administration building.

7. Workforce Housing

JCEP proposes to construct temporary workforce housing in the IND zone. Exhibit 2 shows the location of the workforce housing and Exhibit 4 is a conceptual plan that shows the location and layout for the temporary workforce housing. The temporary workforce housing will house construction workers during the construction of the SORSC and the administration building and other aspects of the LNG Terminal. It will include a kitchen and dining facility, a recreation complex, living quarters, and laundry facilities, among other things.

IND Zone - Allowed Uses - CCZLDO 4.3.200

CCZLDO 4.3.200 permits in the IND zone subject to a Compliance Determination “Temporary Dwelling During Construction.” A Compliance Determination in the IND zone must comply with CCZLDO 4.3.220, 4.3.225, 4.3.230, and the Special Development Considerations and Overlays of CCZLDO 4.11.

RESPONSE: JCEP proposes to construct temporary workforce housing in the form of temporary dwellings for construction workers (and related facilities) in the IND zone. The workforce housing qualifies as “Temporary Dwelling During Construction,” which is allowed in the IND zone subject to a CD process. The workforce housing will house workers during construction of the LNG Terminal, including all related project components described herein, are complete. CCZLDO 4.3.210.27.m.i. explains that Temporary Dwellings During Construction are allowed for up to one year, subject to renewal if the construction they serve has not been completed. The workforce housing satisfies the applicable approval criteria of CCZLDO 4.3.220, 4.3.225, 4.3.230 and 4.11, for the reasons set forth in Section II.D. of this Application.

For the reasons discussed above and in Section II.D. of this Application, the County should approve the temporary workforce housing.

8. Wastewater Treatment Facilities

JCEP proposes to construct in the IND zone wastewater treatment facilities to serve the LNG Terminal and related facilities. During construction of the LNG Terminal and related facilities, there may be wastewater streams discharged to the IWWP, including: effluent from temporary sanitary treatment facilities, water from construction dewatering, hydrostatic test water, effluent from the oily water separator, contact stormwater not managed under JCEP’s 1200-C permit

(stormwater that flows into and through the oily water separator and then the sump) and wheel wash and equipment wash water (no detergent or solvents used) that discharges into the oily water separator and then the IWWP. Seepage from settling ponds, currently discharged via Outfall 003, will continue in the early phases of construction, overlapping for a short time with discharge of construction-related wastewaters until the ponds are filled during regrading of the South Dunes site. Exhibit 5 shows how, after construction, wastewater sources will be treated through permanent wastewater treatment facilities.

IND Zone - Allowed Uses- CCZLDO 4.3.200

CCZLDO 4.3.200 permits in the IND zone subject to a Compliance Determination “Accessory Uses” to residential and industrial uses. A Compliance Determination use in the IND zone is subject to CCZLDO 4.3.220, 4.3.225 4.3.230, and the Special Development Considerations and Overlays of 4.11.

RESPONSE: JCEP proposes to construct wastewater treatment facilities in the IND zone to serve the LNG Terminal and related facilities. The wastewater treatment facilities qualify as accessory uses to residential (temporary workforce housing) and industrial uses (i.e., SORSC, LNG Terminal), which accessory uses are allowed in the IND zone subject to a CD process. CCZLDO 4.3.210.1 explains that accessory uses are “subordinate to any authorized primary use.” CCZLDO 2.1.200 defines “accessory use” as “A use, building or structure that is (1) customarily incidental and subordinate to the principal use, main building or structure, and (2) subordinate in extent, area and purpose to the principal use.” The wastewater treatment facilities will serve the LNG Terminal and related facilities, including temporary workforce housing and the SORSC, and their location is contingent upon the same in order to serve those uses. Thus, the wastewater treatment facilities are subordinate and incidental to the LNG Terminal and related facilities that they will serve. The wastewater treatment facility satisfies the applicable approval criteria of CCZLDO 4.3.220, 4.3.225, 4.3.230 and 4.11, for the reasons set forth in Section II.D. of this Application.

For the reasons discussed above and in Section II.D. of this Application, the wastewater treatment facilities comply with all approval criteria for a CD in the IND zone. The County should approve the wastewater treatment facilities.

9. Park and Ride

JCEP proposes to construct a park and ride facility in the IND zone to transport workers to and from the construction sites for the LNG Terminal, including all related project components described herein. The park and ride has two component parts. The first is in South Dunes, near the construction site for the SORSC and Administration Building in this Application. At this location, JCEP proposes to pick-up/drop-off workers and store buses used for transportation. The pick-up/drop-off location will be a covered parking area, and JCEP proposes to use available on-site parking areas at the sites of the SORSC and Administration Building to store buses. Exhibit 4 shows the location in the area known as South Dunes where buses will pick up and drop off workers. The second part of the park and ride is a pick-up/drop-off point for workers that is located at the site of the Myrtlewood Factory (north of the JCEP campus). Exhibit 4 also shows the location of this site. Workers will park their vehicles at this site and board buses for pick-up

and drop-off to construction sites for various components of the overall LNG Terminal project. Only IND-zoned areas of the site will be used for parking and pick-up/drop-off and JCEP will not make physical alterations to the site. JCEP understands there is currently at this site an ongoing parking violation associated with recreational vehicles. JCEP will, in conjunction with its use of the site as a pick-up/drop-off/parking location, remedy this ongoing violation.

IND Zone - Allowed Uses - CCZLDO 4.3.200

CCZLDO 4.3.200 permits in the IND zone, subject to a Compliance Determination, “Transportation Facilities.” A Compliance Determination use in the IND zone is subject to CCZLDO 4.3.220, 4.3.225, 4.3.230, and the Special Development Considerations and Overlays of CCZLDO 4.11.

RESPONSE: The park and ride in the IND zone qualifies as a “transportation facility.” CCZLDO 4.3.200 explains that a “transportation facility” “includes any physical facility that moves or assists in the movement of people or goods.” CCZLDO 4.3.210.80 further explains that a “transportation facility” also includes “parking, storage, repair and servicing of fleet vehicles used for the transport of people.” The park and ride is a physical facility (the park and ride includes a covered pick-up/drop-off area at South Dunes and buses and parking areas, all of which qualify as physical facilities) that moves or assists in the movement of people, namely construction workers to the site of construction of the proposals in this Application. Moreover, it will store buses used for the transport of people. The park and ride is thus a valid “transportation facility” and is allowed subject to a CD process in the IND zone. Furthermore, the park and ride satisfies CCZLDO 4.3.220, 4.3.225, 4.3.230, and 4.11, for the reasons set forth in Section II.D. of this Application.

Therefore, for the reasons discussed above and in Section II.D. of this Application, the park and ride complies with all approval criteria for a CD in the IND zone. The County should approve the park and ride.

10. Temporary Construction Laydown

JCEP proposes to install construction laydown in the IND, 3-WD, 3-NWD, and 6-WD zones. Specifically, the construction laydown in the IND zone is located at the Boxcar Hill and South Dunes laydown sites. The construction laydown in the 3-WD and 3-NWD zone is located at the Port Laydown site. The construction laydown in the 6-WD zone is located at Ingram Yard. Exhibit 2 shows the location of the laydown sites described above.

The temporary construction laydown will include offices, trailers, overflow parking, storage of material, and fabrication of construction materials. The purpose of the laydown is to store and fabricate materials necessary for the construction of the LNG Terminal and related facilities.

This Application first addresses approval criteria for laydown activities in the IND zone, and then addresses approval criteria for laydown activities in the CBEMP zones 3-WD, 3-NWD, and 6-WD.

IND Zone Laydown

IND Zone - Allowed Uses - CCZLDO 4.3.200

CCZLDO 4.3.200 permits in the IND zone, subject to a Compliance Determination, “Accessory uses and structures to Emergency Services and Governmental Services” and “Accessory Development to industrial uses.” A Compliance Determination Use in the IND zone is subject to CCZLDO 4.3.220, 4.3.225, 4.3.230, and the Special Development Considerations and Overlays of CCZLDO 4.11.

RESPONSE: The construction laydown at the Boxcar Hill and South Dunes laydown sites qualifies as “Accessory” to both industrial and emergency services and governmental services uses. CCZLDO 4.3.210.1 explains that such uses must be “subordinate” to an authorized primary use, specifically an authorized primary industrial use. Moreover, CCZLDO 2.1.200 defines “accessory use” as “a use, building or structure that is (1) customarily incidental and subordinate to the principal use, main building or structure, and (2) subordinate in extent, area and purpose to the principal use.” The construction laydown at Boxcar Hill and South Dunes is subordinate to multiple uses, including the LNG Terminal itself, the SORSC, and the concrete batch plant. The Boxcar Hill and South Dunes temporary construction laydown sites will exist only to facilitate the construction of these uses. Therefore, it is customarily incidental and subordinate to these primary uses. Moreover, it is subordinate in extent, area, and purpose to that use because it will exist only temporarily, at locations entirely determined by the need to construct the LNG Terminal, SORSC, and concrete batch plant, and only to facilitate construction of those primary uses. Therefore, the proposed Boxcar Hill and South Dunes temporary construction laydown is allowed as an “Accessory Development to industrial use” in the IND zone. The laydown complies with CCZLDO 4.3.220, 4.3.225, 4.3.230, and 4.11, as discussed in Section II.D. of this Application.

CBEMP Zones Laydown

3-WD, 3-NWD, 6-WD Zones - Allowed Uses - CCZLDO 3.1.450.4

CCZLDO 3.1.450.4 provides that “[t]he special temporary uses and their accessory structures and uses may be temporarily permitted by the Planning Director as set forth in the Zoning Districts.” Special temporary uses are subject to the management objective of the subject zone and the general development standards of CCZLDO 3.2.100, which apply to all development in the CBEMP zones.

RESPONSE: The construction laydown at the Port Laydown and Ingram Yard laydown sites is located in the 3-WD and 3-NWD zones and the 6-WD zone, respectively. That laydown all qualifies as a “special temporary use” in accordance with CCZLDO 3.1.450.4. CCZLDO 3.1.450.4 provides that “the special temporary uses and their accessory structures and uses may be temporarily permitted by the Planning Director as set forth in the Zoning Districts.” No CBEMP zone explicitly references “special temporary use.” However, CCZLDO 3.1.450 is entitled “[s]upplemental provisions that apply to all zoning listed in Article 3.” Therefore, the reasonable interpretation of CCZLDO 3.1.450.4 is that “special temporary uses” are allowed in all CBEMP zones unless explicitly prohibited. Neither the 3-WD, 3-NWD, nor the 6-WD zone explicitly prohibit “special temporary uses.” Therefore, such uses are allowed in all three zones.

CCZLDO 2.1.200 defines “temporary use” as “a use that is not lasting or permanent but is in effect for a certain amount of time only.” The definition also explains that “temporary uses include but are not limited to medical hardship dwellings or dwellings that are allowed while building a new home” and that once a temporary use is no longer needed, it must be removed. The construction laydown at the Port Laydown and Ingram Yard sites is a use that is in effect for a certain amount of time only--namely, only as long as necessary to complete construction of the authorized Port and Industrial facility and accessory improvements. Upon completion of construction, JCEP will terminate the laydown as soon as that task is completed. The laydown is thus similar to a temporary dwelling used while building a new home because its purpose is to provide necessary storage and other support for constructing the LNG Terminal and other related uses.

For these reasons, the construction laydown at the Port Laydown and Ingram Yard sites is allowed as a “special temporary use.” The construction laydown at the Port Laydown and Ingram Yard sites satisfies the management objectives of the 3-WD, 3-NWD and 6-WD zones, and the general development standards of CCZLDO 3.2.100, as follows.

3-WD Zone - Management Objective - CCZLDO 3.2.240

This shoreland district shall be managed to efficiently utilize the property for water-dependent or related commercial/industrial development. Development must be conducted in a manner that is consistent with the Plan's general policy regarding beaches and dunes. Any area of disturbed snowy plover habitat shall be replaced elsewhere on the North Spit (see Districts #1CS and #2CS) such that: (1) sites created as habitat are made available before or concurrently with alteration of existing habitat, and (2) there is no net loss of habitat.

RESPONSE: The temporary construction laydown is water-related industrial development. Its purpose is to facilitate construction of projects related to JCEP’s LNG Terminal, which is an industrial use that will ship liquefied natural gas out of the port. Thus, the temporary construction laydown that facilitates that use is also a water-related, industrial use. The temporary construction laydown will comply with applicable CBEMP policies pertaining to beaches and dunes (for the reasons discussed in Section II.E. of this Application), and will not result in the loss of any identified existing snowy plover habitat. Therefore, the temporary construction laydown complies with the 3-WD zone’s management objective.

CCZLDO 3.2.242.01 - 3-NWD Zone - Management Objective

This shoreland district shall be managed to efficiently utilize the property for non-water-dependent commercial/industrial development. Development must be conducted in a manner that is consistent with the Plan's general policy regarding beaches and dunes.

RESPONSE: The temporary construction laydown is water-related industrial development. Its limited purpose is to facilitate construction of the LNG Terminal and related facilities. Furthermore, the temporary construction laydown will comply with applicable CBEMP policies pertaining to beaches and dunes (for the reasons discussed in Section II.E. of this Application).

Therefore, the temporary construction laydown complies with the 3-NWD zone's management objective.

6-WD Zone - Management Objective - CCZLDO 3.2.275

This district shall be managed so as to protect the shoreline for water-dependent uses in support of the water-related and non-dependent, non-related industrial use of the area further inland. To assure that the district shoreline is protected for water-dependent uses while still allowing nonwater-dependent uses of the inland portion of the property (outside of the Coastal Shoreland Boundary), any new proposed use of the property must be found by the Board of County Commissioners (or their designee) to be located in such a manner that it does not inhibit or preclude water-dependent uses of the shoreline. Further, use of wetlands in the district must be consistent with state and federal wetland permit requirements.

RESPONSE: The temporary construction laydown will not prejudice the use of the 6-WD zone's shoreline for water-dependent uses. Moreover, the laydown does not occur within or otherwise impact any identified wetlands in the 6-WD zone. Therefore, the temporary construction laydown satisfies the management objective of the 6-WD zone.

3-WD, 3-NWD, 6-WD Zones - General Development Standards - CCZLDO 3.2.100

Minimum Lot Size:

3-WD - None

3-NWD - None

6-WD - None

Lot Dimension/Street Frontage

3-WD - 20' Minimum Lot Width, No Minimum Lot Depth; 20' Minimum Street Frontage

3-NWD - 20' Minimum Lot Width, No Minimum Lot Depth; No Minimum Street Frontage

6-WD - 20' Minimum Lot Width, No Minimum Lot Depth; 20' Minimum Street Frontage

Setbacks

3-WD - 35' from centerline of adjacent right-of-way or 5' from adjacent right-of-way boundary if no adjacent right-of-way

3-NWD - None

6-WD - 35' from centerline of adjacent right-of-way or 5' from adjacent right-of-way boundary if no adjacent right-of-way

Building Heights/Parking/Road Standards

3-WD - No Maximum Building Height; Required parking subject to staff determination via CCZLDO 7.5.100.5.

3-NWD - No Maximum Building Height; Required parking subject to staff determination via CCZLDO 7.5.100.5.

6-WD - No Maximum Building Height; Required parking subject to staff determination via CCZLDO 7.5.100.5.

RESPONSE: The temporary construction laydown will comply with the above general development standards of the 3-WD, 3-NWD, and 6-WD zone.

For the reasons discussed above and in Sections II.D. and II.E. of this Application, the temporary construction laydown satisfies all applicable approval criteria. The County should approve the temporary construction laydown.

11. Temporary Barge Berth

JCEP proposes to construct a temporary barge berth in the 6-DA zone. Exhibit 2 shows the location (Access Channel) and Exhibit 6 is a conceptual design of the temporary barge berth. for the temporary barge berth. JCEP proposed in the Application On Remand to construct a Material Offloading Facility (“MOF”) (previously referred to as a “barge berth”) and a slip and access channel. JCEP proposes in this Application to modify that previous proposal to include, during the construction of the MOF and slip and access channel, a temporary material barge berth within the footprint of the slip and access channel. This small reconfiguration will facilitate safer and more efficient unloading. Its purpose is to receive materials until the MOF is capable of doing so. JCEP cannot complete the MOF within a single in-water work window. The temporary barge berth will be utilized to convey large cargoes such as steel LNG tank elements, as well as potentially other bulk supplies that may include steel pipe pile, sheet pile or aggregate, other project elements, such as major equipment may also be delivered to the site. In this manner, fewer truck trips to site will be required, thus reducing project related traffic. The temporary barge berth will be sized to accommodate ocean going barges ranging in length from 100 to 250 feet long, and 45 to 55 feet wide with a loaded draft of 10 feet. The barges will be berthed with one end pushed approximately 60 feet into the excavated slot and tied off to piling driven into the berm around the berth opening. The excavated floor of the berth will be approximately 65 feet wide and extend approximately 500 feet from the back of the berth to the point where EL - 12 MLLW meets the natural submarine slope. The temporary barge berth will be operational during the majority of the tidal changes, however restricted during low to extreme low water events to prevent the grounding of a barge. JCEP will remove the temporary barge berth when it excavates the berm in which the temporary barge berth sits. Exhibit 6 shows the conceptual design of the temporary barge berth.

6-DA Zone - Allowed Uses - CCZLDO 3.1.450.4

CCZLDO 3.1.450.4 provides that “[t]he special temporary uses and their accessory structures and uses may be temporarily permitted by the Planning Director as set forth in the Zoning Districts.” Special temporary uses are subject to the management objective of

the subject zone and the general development standards of CCZLDO 3.2.100, which apply to all development in the CBEMP zones.

RESPONSE: The temporary barge berth qualifies as a “special temporary use” in accordance with CCZLDO 3.1.450.4, which provides that “the special temporary uses and their accessory structures and uses may be temporarily permitted by the Planning Director as set forth in the Zoning Districts.” No CBEMP zone explicitly references “special temporary use.” However, CCZLDO 3.1.450 is entitled “[s]upplemental provisions that apply to all zoning listed in Article 3.” Therefore, the reasonable interpretation of CCZLDO 3.1.450.4 is that “special temporary uses” are allowed in all CBEMP zones unless explicitly prohibited. The 6-DA zone does not explicitly prohibit “special temporary uses.” Therefore, such uses are allowed in the zone.

CCZLDO 2.1.200 defines “temporary use” as “a use that is not lasting or permanent but is in effect for a certain amount of time only.” The definition also explains that once a temporary use is no longer needed, it must be removed. The temporary barge berth is a use that will remain effective for a certain amount of time only--namely, only as long as necessary to complete construction of the MOF. JCEP will dismantle the temporary barge berth once the MOF is constructed. Therefore, the temporary barge berth is allowed as a “special temporary use.” The temporary barge berth complies with the management objective of the 6-DA zone and the general development standards of CCZLDO 3.2.100, as follows.

6-DA Zone - Management Objective - CCZLDO 3.2.280

This aquatic district shall be managed to provide water access for the industrial uses in the adjacent uplands.

RESPONSE: The temporary barge berth will receive materials necessary to construct and support the LNG Terminal. Therefore, its purpose is to provide water access for the LNG Terminal, which is an industrial use, and its related uses. The temporary barge berth satisfies the management objective of the 6-DA zone.

6-DA Zone - General Development Standards - CCZLDO 3.2.100

CCZLDO 3.2.100 and Table 2 do not include any general development standards applicable to a “DA” zone.

RESPONSE: Because CCZLDO 3.2.100 and Table 2 of that section do not include general development standards for a “DA” zone, there are no general development standards applicable to the temporary barge berth .

For the reasons discussed above, the temporary barge berth satisfies all approval criteria for a special temporary use in the 6-DA zone. The County should approve the temporary barge berth.

12. Shoreline Stabilization

JCEP proposes in the 5-WD zone shoreline stabilization in the form of an approximately 100-foot-long extension of the sheetpile bulkhead at the northwest corner of the slip and access channel to minimize slope cut-back at this location.

5-WD Zone - Allowed Uses - CCZLDO 3.2.261

The 5-WD zone allows, subject to an Administrative Conditional Use, retaining wall shoreline stabilization. Retaining wall shoreline stabilization in the 5-WD zone is also subject to the special and general conditions of the 5-WD zone and the zone's management objective.

RESPONSE: The extension of the sheetpile bulkhead at the northwest corner of the access channel qualifies as retaining wall shoreline stabilization and is thus allowed in the 6-WD zone. CCZLDO 2.1.200 defines "shoreline stabilization" as "The protection of the banks of tidal or non-tidal streams, rivers or estuarine waters by nonstructural (vegetative) or structural (riprap, bulk heading, etc.) means." The same section defines "bulkhead" as "A retaining wall along a waterfront that separates uplands from aquatic areas." JCEP's proposed shoreline stabilization in the 5-WD zone is an extension of the sheetpile bulkhead at the northwest corner of the slip and access channel, which bulkhead separates upland and aquatic areas. The purpose of the bulkhead is to minimize slope cut-back at this location. Therefore, the bulkhead extension satisfies the definition of retaining wall shoreline stabilization and is thus allowed in the 5-WD zone, subject to general and special conditions and the management objective of the zone. The shoreline stabilization satisfies those approval criteria, as follows.

5-WD Zone - Management Objective - CCZLDO 3.2.260

A large portion of this district, compared to other areas of the bay, possesses characteristics that make it an exceptional future development resource not only for the Bay Area, but for Coos County and the State of Oregon as well. The site's location on the deep-draft channel in the lower bay gives it even greater attributes as a water-dependent industrial development site. Therefore, the Plan reserves this portion of the district for an integrated industrial use that takes advantage of the site's unique characteristics, particularly its attributes for deep-draft development. Uses need not be limited to those specifically mentioned in Exception #22. Utilizing the site for development purposes as described will require the filling of 123 acres of freshwater and saltwater wetlands, commonly known as Henderson Marsh (Dredged Material Site #4x). The Plan intends that development within the road corridor will be for the purposes of developing and maintaining an access road, rail and utility corridor, and pulp mill effluent pipeline.

RESPONSE: The purpose of the shoreline stabilization is to protect against slope cut-back and erosion that would degrade Pile Dike 7.3, which protection facilitates navigation in the deep draft navigation channel, which in turn facilitates water-dependent industrial development. Specifically, the shoreline stabilization supports the LNG Terminal and associated industrial development, which development qualifies as "integrated industrial use." Therefore, the shoreline stabilization satisfies the 5-WD zone's management objective.

5-WD Zone - General Conditions - CCZLDO 3.2.261

- 1. Uses in this district are only permitted as stated in Policy #14, "General Policy on Uses Within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in the Plan (see Coastal Shorelands**

Goal "Linkage Findings" section), uses are only allowed subject to the findings in this policy.

RESPONSE: The shoreline stabilization complies with Policy #14 as discussed in Section II.E. of this Application.

- 2. All permitted uses shall be consistent with the respective flood regulations of local governments, as required in Policy #27.**

RESPONSE: The shoreline stabilization complies with Policy #27 as discussed in Section II.E. of this Application.

- 3. Wherever possible, dredged material, especially from the federal channel or other major project, is to be used for the fill material. This method of obtaining fill will be incorporated into the overall project phasing, unless it can be demonstrated that it will have an adverse impact on the development effort.**

RESPONSE: The shoreline stabilization does not involve fill. Therefore, this general condition does not apply to the Application.

- 4. All permitted uses in dune areas shall be consistent with the requirements of Policy #30.**

RESPONSE: The proposed shoreline stabilization is not subject to compliance with Policy #30.

- 5. No use or activity shall pre-empt the use of the designated dredged material disposal site in this district, as required by Policy #20.**

RESPONSE: The shoreline stabilization complies with Policy #20 as discussed in Section II.E. of this Application.

- 6. Inventoried resources requiring mandatory protection in this unit are subject to Policies #17 and #18.**

RESPONSE: The shoreline stabilization complies with Policies #17 and #18 as discussed in Section II.E. of this Application.

- 7. In rural areas (outside UGBs) utilities, public facilities and services shall only be provided subject to Policies, #49, #50, and #51.**

RESPONSE: The shoreline stabilization complies with Policies #49, 50, and 51 as discussed in Section II.E. of this Application.

5-WD Zone - Special Conditions - CCZLDO 3.2.261

- 1. A retaining wall is a temporary activity that will not pre-empt the ultimate use of the site. These activities, where occurring at the interface with the**

estuary, are only permitted subject to the findings required by Policy #9, "Solutions to Erosion and Flooding Problems".

RESPONSE: The shoreline stabilization complies with Policy #9 as discussed in Section II.E. of this Application.

5-WD Zone - General Development Standards - CCZLDO 3.2.100

RESPONSE: The general development standards of CCZLDO 3.2.100 include standards for lot size, lot width and depth, street frontage, setbacks, building height, parking, and road standards. The general development standards of CCZLDO 3.2.100 cannot logically be applied to shoreline stabilization or a retaining wall.

For the reasons discussed above and in Sections II.D. and II.E. of this Application, the shoreline stabilization in the 5-WD zone complies with all applicable approval criteria. The County should approve the shoreline stabilization.

13. Pile Dike 7.3 Protection

JCEP seeks approval for a pile dike rock apron in the 5-DA and 5-WD zones. The pile dike rock apron will be located along the side slope of the access channel. Exhibit 2 shows the location of and Exhibit 7 shows a conceptual design of the pile dike rock apron. The purpose of the pile dike rock apron is to protect Pile Dike 7.3, which is located immediately west of the access channel. The rock apron will arrest slope migration (or equilibration) before it progresses to a condition that has potential negative impacts on Pile Dike 7.3. The design is a 50-foot-wide by 3-foot-high by approximately 1,100-foot-long rock apron set back approximately 20 feet from the top (slope catch point) of the side slope of the access channel. The proposed rock size is a well-graded 6-inch to 22-inch angular stone with a median size of 14 inches. This median stone size and gradation will be sufficient to protect against potential stone displacement due to anticipated wave action or currents. The proposed design adds additional rock to proactively maintain the current function and longevity of Pile Dike 7.3. The new rock apron will be placed directly over the visible apron rock in a careful manner, so the new rock apron will not extend towards the access channel beyond the end-line of the existing visible rock.

5-DA Zone - Allowed Uses - CCZLDO 3.2.271

CCZLDO 3.2.271 permits within the 5-DA zone, subject to an ACU process, riprap shoreline stabilization. Riprap shoreline stabilization in the 5-DA zone is also subject to certain special conditions of the zone, the zone's management objective, and to the general development standards of CCZLDO 3.2.100.

RESPONSE: CCZLDO 2.1.200 defines "shoreline stabilization" as "the protection of the banks of tidal or non-tidal streams, rivers or estuarine waters by nonstructural (vegetative) or structural (riprap, bulk heading, etc.)." The same section defines "riprap" as "a layer, facing, or protective mound of stones randomly placed to prevent erosion, scour or sloughing of a structure or embankment; also, the stone so used." JCEP proposes to install a pile dike rock apron as described above to protect Pile Dike 7.3 from degradation. The proposed rock apron satisfies the definition of riprap shoreline stabilization in CCZLDO 2.1.200. Therefore, the pile dock rock

apron qualifies as riprap shoreline stabilization and is allowed in the 5-DA zone subject to an ACU process and compliance with the 5-DA zone's management objective, special conditions, and the general development standards of CCZLDO 3.2.100. The pile dike rock apron complies with those criteria, as follows.

5-DA Zone - Management Objective - CCZLDO 3.2.270

This district shall be managed so as to efficiently utilize the aquatic area for access to the deep-draft channel in support of upland water-dependent uses.

RESPONSE: Supporting navigation channels is one of the primary functions of pile dikes, including Pike Dike 7.3. Moreover, Pile Dike 7.3 is proximate to the slip and access channel so that ships can access in and out of Ingram Yard. Thus, the pile dike rock apron will have a primary function of facilitating access to the deep-draft navigation channel in support of upland water-dependent industrial uses.

5-DA Zone - Special Conditions - CCZLDO 3.2.271

- 1. These activities are only permitted subject to the general findings required by Policy #9," Solutions to erosion and flooding problems"" preferring non-structural to structural solutions, and to the specific findings for rip-rap.**

RESPONSE: The pile dike rock apron complies with CBEMP Policy #9, as discussed in Section II.E. of this Application.

CCZLDO 3.2.100 and Table 2 do not include any general development standards applicable to a "DA" zone.

RESPONSE: Because CCZLDO 3.2.100 and Table 2 of that section do not include general development standards for a "DA" zone, there are no general development standards applicable to the pile dike rock apron .

5-WD Zone - Allowed Uses - CCZLDO 3.2.261

CCZLDO 3.2.271 permits within the 5-WD zone, subject to an ACU process, riprap shoreline stabilization. Riprap shoreline stabilization in the 5-WD zone is also subject to general and certain special conditions of the zone, the zone's management objective, and to the general development standards of CCZLDO 3.2.100.

RESPONSE: CCZLDO 2.1.200 defines "shoreline stabilization" as "the protection of the banks of tidal or non-tidal streams, rivers or estuarine waters by nonstructural (vegetative) or structural (riprap, bulk heading, etc.)." The same section defines "riprap" as "a layer, facing, or protective mound of stones randomly placed to prevent erosion, scour or sloughing of a structure or embankment; also, the stone so used." JCEP proposes to install a pile dike rock apron as described above to protect Pile Dike 7.3 from degradation. The proposed rock apron satisfies the definition of riprap shoreline stabilization in CCZLDO 2.1.200. Therefore, the pile dock rock apron qualifies as riprap shoreline stabilization and is allowed in the 5-WD zone subject to an ACU process and compliance with the 5-WD zone's management objective, general and special

conditions, and the general development standards of CCZLDO 3.2.100. The pile dike rock apron complies with those criteria, as follows.

5-WD Zone - Management Objective - CCZLDO 3.2.260

A large portion of this district, compared to other areas of the bay, possesses characteristics that make it an exceptional future development resource not only for the Bay Area, but for Coos County and the State of Oregon as well. The site's location on the deep-draft channel in the lower bay gives it even greater attributes as a water-dependent industrial development site. Therefore, the Plan reserves this portion of the district for an integrated industrial use that takes advantage of the site's unique characteristics, particularly its attributes for deep-draft development. Uses need not be limited to those specifically mentioned in Exception #22. Utilizing the site for development purposes as described will require the filling of 123 acres of freshwater and saltwater wetlands, commonly known as Henderson Marsh (Dredged Material Site #4x). The Plan intends that development within the road corridor will be for the purposes of developing and maintaining an access road, rail and utility corridor, and pulp mill effluent pipeline.

RESPONSE: The purpose of the pile dike rock apron is to protect the integrity of Pile Dike 7.3, which in turn facilitates navigation in the deep draft navigation channel, which in turn facilitates water-dependent industrial development. Specifically, the pile dike rock apron supports the LNG Terminal and associated industrial development, which development qualifies as “integrated industrial use.” Therefore, the pile dike rock apron satisfies the 5-WD zone’s management objective.

5-WD Zone - General Conditions - CCZLDO 3.2.261

Riprap shoreline stabilization in the 5-WD zone is subject to the following general conditions.

- 1. Uses in this district are only permitted as stated in Policy #14, "General Policy on Uses Within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in the Plan (see Coastal Shorelands Goal "Linkage Findings" section), uses are only allowed subject to the findings in this policy.**

RESPONSE: The pile dike rock apron complies with Policy #14 as discussed in Section II.E. of this Application.

- 2. All permitted uses shall be consistent with the respective flood regulations of local governments, as required in Policy #27.**

RESPONSE: The pile dike rock apron complies with Policy #27 as discussed in Section II.E. of this Application.

- 3. Wherever possible, dredged material, especially from the federal channel or other major project, is to be used for the fill material. This method of obtaining fill will be incorporated into the overall project phasing, unless it**

can be demonstrated that it will have an adverse impact on the development effort.

RESPONSE: The pile dike rock apron does not involve fill. Therefore, this general condition does not apply to the Application.

- 4. All permitted uses in dune areas shall be consistent with the requirements of Policy #30.**

RESPONSE: The pile dike rock apron is not subject to compliance with Policy #30.

- 5. No use or activity shall pre-empt the use of the designated dredged material disposal site in this district, as required by Policy #20.**

RESPONSE: The pile dike rock apron complies with Policy #20 as discussed in Section II.E. of this Application.

- 6. Inventoried resources requiring mandatory protection in this unit are subject to Policies #17 and #18.**

RESPONSE: The pile dike rock apron complies with Policies #17 and #18 as discussed in Section II.E. of this Application.

- 7. In rural areas (outside UGBs) utilities, public facilities and services shall only be provided subject to Policies, #49, #50, and #51.**

RESPONSE: The pile dike rock apron complies with Policies #49, 50, and 51 as discussed in Section II.E. of this Application.

5-WD Zone - Special Conditions - CCZLDO 3.2.261

- 1. A retaining wall is a temporary activity that will not pre-empt the ultimate use of the site. These activities, where occurring at the interface with the estuary, are only permitted subject to the findings required by Policy #9, "Solutions to Erosion and Flooding Problems".**

RESPONSE: The pile dike rock apron is not a temporary retaining wall. Rather, it is a riprap rock apron that JCEP intends to remain permanently. Therefore, this special condition of the 5-WD zone does not apply to the pile dike rock apron.

5-WD Zone - General Development Standards - CCZLDO 3.2.100

RESPONSE: The general development standards of CCZLDO 3.2.100 include standards for lot size, lot width and depth, street frontage, setbacks, building height, parking, and road standards. The pile dike rock apron is riprap that will extend into the estuary to support Pile Dike 7.3. The general development standards of CCZLDO 3.2.100 cannot logically be applied to riprap that extends into the estuary.

For the reasons discussed above and in Sections II.D. and II.E. of this Application, the pile dike rock apron complies with all applicable approval criteria. The County should approve the pile dike rock apron.

15. Relocation of Primary Access to LNG Terminal Site

Previously, JCEP proposed Trans Pacific Parkway as the primary access to the LNG Terminal site. JCEP now proposes to relocate the primary site access to Jordan Cove Road, with secondary access from Trans Pacific Parkway. This is a new access point that will require a driveway confirmation. JCEP has submitted with this Application an application for such a driveway confirmation. The primary site access will comply with the standards of CCZLDO Chapter 7, specifically CCZLDO 7.1.425 regarding access.

16. Temporary Dredge Lines

JCEP proposes to construct two temporary dredge lines. JCEP proposes to construct the first temporary dredge line in the 6-WD and 7-D zones. This temporary dredge line will transport dredged material from JCEP's dredging in the slip and access channel to a disposal site in South Dunes. Exhibit 2 shows the location of this dredge line.

JCEP proposes to construct the second temporary dredge line in the 13B-NA and 14-DA zones. This temporary dredge line will transport dredged material from the Coos Bay Deep Draft Navigation Channel, which JCEP seeks approval to widen in a separate pending application, to the Kentuck Mitigation Site. Exhibit 2 shows the location of this dredge line.

6-WD and 7-D Zones - Allowed Uses - CCZLDO 3.1.450.4

CCZLDO 3.1.450.4 provides that "[t]he special temporary uses and their accessory structures and uses may be temporarily permitted by the Planning Director as set forth in the Zoning Districts." Special temporary uses are subject to the management objective of the subject zone and the general development standards of CCZLDO 3.2.100, which apply to all development in the CBEMP zones.

RESPONSE: The temporary dredge line in the 6-WD and 7-D zones qualifies as a "special temporary use" in accordance with CCZLDO 3.1.450.4. JCEP requires the dredge line to facilitate dredging and the construction of the MOF and temporary barge berth in the slip and access channel. CCZLDO 3.1.450.4 provides that "the special temporary uses and their accessory structures and uses may be temporarily permitted by the Planning Director as set forth in the Zoning Districts." No CBEMP zone explicitly references "special temporary use." However, CCZLDO 3.1.450 is entitled "[s]upplemental provisions that apply to all zoning listed in Article 3." Therefore, the reasonable interpretation of CCZLDO 3.1.450.4 is that "special temporary uses" are allowed in all CBEMP zones unless explicitly prohibited. The 6-WD and 7-D zones do not prohibit "special temporary uses," and accordingly, special temporary uses are allowed in the 6-WD and 7-D zones.

CCZLDO 2.1.200 defines "temporary use" as "a use that is not lasting or permanent but is in effect for a certain amount of time only." The definition also explains that "temporary uses

include but are not limited to medical hardship dwellings or dwellings that are allowed while building a new home” and that once a temporary use is no longer needed, it must be removed. The temporary dredge line is a use that is in effect for a certain amount of time only--namely, only as long as necessary to transport dredge material from the dredging of the slip and access channel to a disposal site at South Dunes. JCEP will dismantle the dredge line when that dredging is completed.

For the above reasons, the temporary dredge line in the 6-WD and 7-D zones is allowed as a “special temporary use.” The dredge line satisfies the management objective of the 6-WD and 7-D zones, and the general development standards of CCZLDO 3.2.100, as follows.

6-WD Zone - Management Objective - CCZLDO 3.2.275

This district shall be managed so as to protect the shoreline for water-dependent uses in support of the water-related and non-dependent, non-related industrial use of the area further inland. To assure that the district shoreline is protected for water-dependent uses while still allowing nonwater-dependent uses of the inland portion of the property (outside of the Coastal Shoreland Boundary), any new proposed use of the property must be found by the Board of County Commissioners (or their designee) to be located in such a manner that it does not inhibit or preclude water-dependent uses of the shoreline. Further, use of wetlands in the district must be consistent with state and federal wetland permit requirements.

RESPONSE: The temporary dredge line in the 6-WD zone does not preclude or inhibit water-dependent uses of the shoreline within the 6-WD zone. Moreover, it is not located within and will not affect wetlands. Therefore, the temporary dredge line satisfies the management objective of the 6-WD zone.

7-D Zone - Management Objective - CCZLDO 3.2.285

This shoreland district, which borders a natural aquatic area, shall be managed for industrial use. Continuation of and expansion of existing non-water-dependent/non-water-related industrial uses shall be allowed provided that this use does not adversely impact Natural Aquatic District #7. In addition, development shall not conflict with state and federal requirements for the wetlands located in the northwest portion of this district.

RESPONSE: The temporary dredge line in the 7-D zone will not affect the zone’s management for industrial uses. Rather, the purpose of the dredge line is to transport dredge material from JCEP’s work in the slip and access channel, and the purpose of which is to provide water access for the LNG Terminal and related facilities. The temporary dredge line thus facilitates industrial uses. Further, the temporary dredge line is not a continuation or expansion of an existing use. Finally, it does not cross a wetland and does not interfere with state or federal requirements for the same. Therefore, the temporary dredge line satisfies the management objective of the zone.

6-WD and 7-D Zones - General Development Standards - CCZLDO 3.2.100

RESPONSE: The development standards of the 6-WD and 7-D zones include standards for lot size, width and depth, setbacks, parking, and building height. These standards cannot logically be

applied to a dredge pipeline. Therefore, these standards do not apply to the temporary dredge line.

13B-NA Zone - Allowed Uses - CCZLDO 3.2.436

CCZLDO 3.2.436 allows, subject to an Administrative Conditional Use Process and general and special conditions, a “temporary alteration.” Uses in the 13B-NA zone are also subject to the zone’s management objective and the general development standards of CCZLDO 3.2.100.

RESPONSE: The temporary dredge line qualifies as a “temporary alteration.” JCEP requires the dredge line to facilitate dredging and the construction of the MOF and temporary barge berth in the slip and access channel.

CCZLDO 2.1.200 defines “temporary alteration” as “dredging, filling, or another estuarine alteration occurring over a specified short period of time which is needed to facilitate a use allowed by an acknowledged plan.” CCZLDO 2.1.200 further provides that temporary alterations cannot occur for more than three (3) years and the applicant must restore the affected area to its previous condition after that time.”

The temporary dredge line is a temporary estuarine alteration. It will not last for more than three years, and JCEP will restore the area to its previous condition when the need to transport dredged material from JCEP’s work widening the Coos Bay Deep Draft Navigation Channel has ended.

For the above reasons, the temporary dredge line qualifies as a “temporary alteration” and is allowed in the 13B-NA zone, subject to general and special conditions, the management objective of the zone, and the general development standards of CCZLDO 3.2.100. The temporary dredge line satisfies the management objective of the 13B-NA zone, applicable general and special conditions, and applicable general development standards, as follows.

13B-NA Zone - Management Objective - CCZLDO 3.2.435

This district shall be managed so as to protect the productivity of the extensive tideflats and subtidal beds in the aquatic area. Maintenance/repair of bridge crossing support structures is appropriate in this district.

RESPONSE: The temporary dredge line will not affect the productivity of tideflats or subtidal beds in the 13B-NA zone. Therefore, the temporary dredge line satisfies the management objective of the zone.

13B-NA Zone - General Development Standards - CCZLDO 3.2.100

CCZLDO 3.2.100 and Table 2 do not include any general development standards applicable to an “NA” zone.

RESPONSE: Because CCZLDO 3.2.100 and Table 2 of that section do not include general development standards for an “NA” zone, there are no general development standards applicable to the temporary dredge line in the 13B-NA zone.

13B-NA Zone - General Conditions - CCZLDO 3.2.436

- 1. Inventoried resources requiring mandatory protection in this unit are subject to Policies #17 and #18.**

RESPONSE: The temporary dredge line satisfies Policies #17 and #18, as discussed in Section II.E. of this Application.

CCZLDO 3.2.436 - 13B-NA Zone - Special Conditions

- 10. This activity is only permitted subject to Policy #5a.**

RESPONSE: The temporary dredge line satisfies Policy #5a for the reasons discussed in Section II.E. of this Application.

14-DA Zone - Allowed Uses - CCZLDO 3.2.446

CCZLDO 3.2.446 allows, subject to an Administrative Conditional Use Process and general and special conditions, a “temporary alteration.” Uses in the 14-DA zone are also subject to the zone’s management objective and the general development standards of CCZLDO 3.2.100.

RESPONSE: The temporary dredge line qualifies as a “temporary alteration.” JCEP requires the dredge line to facilitate dredging and the construction of the MOF (for which JCEP seeks approval in the Application On Remand) and temporary barge berth (for which JCEP seeks approval in this Application) in the slip and access channel.

CCZLDO 2.1.200 defines “temporary alteration” as “dredging, filling, or another estuarine alteration occurring over a specified short period of time which is needed to facilitate a use allowed by an acknowledged plan.” CCZLDO 2.1.200 further provides that temporary alterations cannot occur for more than three (3) years and the applicant must restore the affected area to its previous condition after that time.”

The temporary dredge line is a temporary estuarine alteration. It will not last for more than three years, and JCEP will restore the area to its previous condition when the need to transport dredged material from JCEP’s work widening the Coos Bay Deep Draft Navigation Channel has ended.

For the above reasons, the temporary dredge line qualifies as a “temporary alteration” and is allowed in the 13B-NA zone, subject to general and special conditions, the management objective of the zone, and the general development standards of CCZLDO 3.2.100. The temporary dredge line satisfies the management objective of the 13B-NA zone, applicable general and special conditions, and applicable general development standards, as follows.

14-DA Zone - Management Objective - CCZLDO 3.2.445

This area shall be managed to allow access to the natural Kentuck Channel for the purposes of transporting jetty stone quarried in the uplands above the district. This district also permits filling of the small bermed aquatic area at the western end of the existing fill,

to provide additional space for rock loading. Dredging and other activities shall be limited to the minimum necessary to accomplish this purpose. That is, if necessary, a "bathtub" may be dredged adjacent to the existing barge off-loading site to allow moorage of a barge during low tide. However, access to and use of the natural channel shall only occur when tides are sufficiently high to facilitate safe navigation. Future dredging of the natural channel (beyond the "bathtub") in District 13B NA is otherwise not allowed. Upon completion of filling in the small bermed area, it will become part of Shoreland District 14 WD.

RESPONSE: The temporary dredge line does not affect access to the natural Kentuck Channel for transporting jetty stone quarried in the uplands above the 14-DA zone. Moreover, the temporary dredge line is not itself a proposal for dredging but a proposal to transport dredged material, so the management objective's limitations on dredging do not apply to the temporary dredge line. Therefore, the temporary dredge line satisfies the management objective of the 14-DA zone.

14-DA Zone - General Conditions - CCZLDO 3.2.446

- 1. Inventoried resources requiring mandatory protection in this unit are subject to Policies #17 and #18.**

RESPONSE: The temporary dredge line satisfies Policies #17 and #18 for the reasons discussed in Section II.E. of this Application.

14-DA Zone - Special Conditions - CCZLDO 3.2.446

- 12. This activity is subject to Policy #5a.**

RESPONSE: The temporary dredge line satisfies Policy #5a for the reasons discussed in Section II.E. of this Application.

For the above reasons, the temporary dredge lines satisfy all approval criteria for temporary alterations in the 6-WD, 7-D, 13B-NA, and 14-DA zones. The County should approve the temporary dredge lines.

B. Modification of Existing Proposals Requiring New Land Use Approval

This Application seeks approval for the following proposed uses which represent modifications of similar or the same uses at a different location than approved previously by the County in 2016. These modified proposals require new land use authorization.

1. Gas Processing

JCEP previously proposed gas processing in the IND zone. JCEP proposes in this Application to relocate that gas processing proposal to the 6-WD zone. Exhibit 2 shows the new location of the gas processing at the Ingram Yard site. The gas processing conditions natural gas transmitted to the LNG Terminal site by the Pacific Connector Gas Pipeline, for which JCEP has sought approval in separate applications in the County and elsewhere. Processing prepares the gas for

liquefaction and storage and transport at and from the LNG Terminal. The gas will undergo mercury (Hg) and acid gas (CO₂ and H₂S) removal and dehydration to remove moisture. The relocation of gas processing for which JCEP here seeks approval will increase the efficiency of the conditioning process by consolidating all gas processing near the liquefaction area and reducing its necessary footprint by using only one liquefaction train instead of two, which the prior design proposed to use.

6-WD Zone - Allowed Uses - CCZLDO 3.2.276

CCZLDO 3.2.276 allows in the 6-WD zone, subject to an Administrative Conditional Use, “Industrial & Port Facilities.” Industrial & Port Facilities in the 6-WD zone are also subject to the management objective of the 6-WD zone and to general and special conditions of the zone, and to the general development standards of CCZLDO 3.2.100.

RESPONSE: The gas processing qualifies as an “industrial & port facility.” CCZLDO 2.1.200 defines “Industrial (Uses) and Port Facility” as the “[p]ublic or private use of land or structures for manufacturing, processing, port development, and energy generating facilities.” The gas processing is the private use of land for “processing” of natural gas. Therefore, it qualifies as an “industrial & port facility.” The gas processing satisfies the management objective, general development standards, and general and special conditions of the 6-WD zone as follows.

6-WD Zone - Management Objective - CCZLDO 3.2.275

This district shall be managed so as to protect the shoreline for water-dependent uses in support of the water-related and non-dependent, non-related industrial use of the area further inland. To assure that the district shoreline is protected for water-dependent uses while still allowing nonwater-dependent uses of the inland portion of the property (outside of the Coastal Shoreland Boundary), any new proposed use of the property must be found by the Board of County Commissioners (or their designee) to be located in such a manner that it does not inhibit or preclude water-dependent uses of the shoreline. Further, use of wetlands in the district must be consistent with state and federal wetland permit requirements.

RESPONSE: The gas processing does not preclude or inhibit in the zone water-dependent uses of the shoreline. Moreover, the gas processing is not located within and will not affect wetlands. Therefore, the gas processing satisfies the management objective of the 6-WD zone.

6-WD Zone - General Development Standards - CCZLDO 3.2.100

Minimum Lot Size - None

Minimum Lot Width/Depth/Street Frontage - 20’; N/A; 20’

Setbacks - 35’ from centerline of adjacent right-of-way or 5’ from adjacent right-of-way boundary if no adjacent right-of-way

Building Height - None

Parking - Required parking subject to staff determination via CCZLDO 7.5.100.5.

RESPONSE: The gas processing will satisfy the above general development standards of the 6-WD zone.

6-WD Zone - General Conditions - CCZLDO 3.2.276

- 1. Inventoried resources requiring mandatory protection in this district are subject to Policies #17 and #18.**

RESPONSE: The gas processing complies with Policies #17 and #18 for the reasons discussed in Section II.E. of this Application.

- 2. All permitted uses and activities shall be consistent with Policy #23 requiring protection of riparian vegetation.**

RESPONSE: The gas processing complies with Policy #23 for the reasons discussed in Section II.E. of this Application.

- 3. Uses in this district are only permitted as stated in Policy #14 "General Policy on Uses within Rural Coastal Shorelands." Except as permitted outright, or where findings are made in this Plan, uses are only allowed subject to the findings in this policy.**

RESPONSE: The gas processing complies with Policy #14 for the reasons discussed in Section II.E. of this Application.

- 4. All permitted uses shall be consistent with the respective flood regulations of local governments, as required in Policy #27.**

RESPONSE: The gas processing complies with Policy #27 for the reasons discussed in Section II.E. of this Application.

- 5. All permitted uses in dune areas shall be consistent with the requirements of Policy #30.**

RESPONSE: The gas processing is not subject to compliance with Policy #30.

- 6. In rural areas (outside of UGBs) utilities, public facilities and services shall only be provided subject to Policies #49, #50, and #51.**

RESPONSE: The gas processing complies with Policies #49, 50, and 51 for the reasons discussed in Section II.E. of this Application.

6-WD Zone - Special Conditions - CCZLDO 3.2.276

An Industrial & Port Facility is subject to review and approval when consistent with Policy #16.

RESPONSE: The gas processing complies with Policy #16, for the reasons discussed in Section II.E. of this Application.

Therefore, for the reasons discussed above and in Section II.E. of this Application, the gas processing satisfies all approval criteria of the 6-WD zone. The County should approve the gas processing.

2. Fire Station

JCEP proposes to construct a fire station in the 6-WD zone. The use is a standalone fire department building within the access and utility corridor that JCEP has established for the LNG Terminal site. JCEP initially proposed to co-locate this use with the SORSC in the IND zone. JCEP now proposes to relocate the fire station proposal from the IND zone to the 6-WD zone. Exhibit 2 shows the location JCEP proposes for the fire station. Splitting the fire station from the SORSC and relocating it will improve emergency incident response time. Fire water storage tanks will be located and stored adjacent to and used by the fire station. The fire department will house Jordan Cove Fire Department chief and staff. The LNG Terminal will provide electric power for operation of the fire department building.

6-WD Zone - Allowed Uses - CCZLDO 3.2.276

CCZLDO 3.1.450.5 allows in all zones “Accessory Uses,” unless the zone specifically prohibits them. Uses in the 6-WD zone are subject to its management objective and the general development standards of CCZLDO 3.2.100.

RESPONSE: The fire station qualifies as an “accessory use” to the LNG Terminal, which is a primary industrial and port facility use. CCZLDO 3.1.450.5 requires that an accessory use (1) satisfy the definition in CCZLDO 2.1.200 of an accessory use, (2) “may be located on the same lot, parcel or tract or on a contiguous lot, parcel or tract under the same ownership as the lot, parcel or tract that contains the principal use,” and (3) “shall only be allowed subject to an administrative conditional use and findings that establish that the use is compatible with surrounding uses or may be made compatible through the imposition of conditions.” The fire station satisfies these criteria.

The fire station satisfies the definition of “accessory use.” CCZLDO 2.1.200 defines “accessory use” as “[a] use, building or structure that is customarily incidental and subordinate to the principal use, main building or structure, and subordinate in extent, area and purpose to the principal use.” The purpose and function of the fire station is to support the LNG Terminal by providing emergency incident response capability to protect people and property in the area of the LNG Terminal. Therefore, the fire station is incidental and subordinate to the LNG Terminal. Furthermore, the fire station is subordinate in extent, area, and purpose to the LNG Terminal. Its purpose is to support the LNG Terminal, which is a subordinate purpose. It is subordinate in extent and area because it is smaller than, and co-located with the LNG Terminal. Finally, the fire station is located at Ingram Yard, on the same lot, parcel, or tract as the LNG Terminal. Therefore, the fire station satisfies CCZLDO 2.1.200’s definition of an accessory use.

The fire station is compatible with surrounding uses, and any incompatibilities could be addressed by conditions of approval. The surrounding land is either zoned industrial or has an

estuary zoning designation (including 6-WD) that authorizes port and industrial uses. JCEP proposes the fire station as a component part of the larger LNG Terminal site development. JCEP has approved and pending applications, including this Application, that propose to develop the LNG Terminal site with the LNG Terminal and supporting facilities, including the fire station. The applicable County zoning designations authorize JCEP's proposals, which means the County has planned and determined that JCEP's proposals are the kind that are compatible with the area in which JCEP proposes them. Moreover, the purpose of the fire station is to supply the LNG Terminal site with emergency management response capability to prevent and minimize the damage from accidents and other emergency events. Further, the fire station is by definition compatible with surrounding uses because its purpose is to protect them. Therefore, the fire station is compatible with surrounding uses. The fire station satisfies the management objective and general development standards of the 6-WD zone, as follows.

6-WD Zone - Management Objective - CCZLDO 3.2.275

This district shall be managed so as to protect the shoreline for water-dependent uses in support of the water-related and non-dependent, non-related industrial use of the area further inland. To assure that the district shoreline is protected for water-dependent uses while still allowing nonwater-dependent uses of the inland portion of the property (outside of the Coastal Shoreland Boundary), any new proposed use of the property must be found by the Board of County Commissioners (or their designee) to be located in such a manner that it does not inhibit or preclude water-dependent uses of the shoreline. Further, use of wetlands in the district must be consistent with state and federal wetland permit requirements.

RESPONSE: The fire station does not preclude or inhibit water-dependent uses of the shoreline within the 6-WD zone. Moreover, the fire station is not located within and will not affect identified wetlands. Therefore, the fire station satisfies the management objective of the 6-WD zone.

CCZLDO 3.2.275 - 6-WD Zone - General Development Standards

The general development standards for the 6-WD zone, outside the UGB, for industrial development, are as follows:

Minimum Lot Size - None

Minimum Lot Width/Depth/Street Frontage - 20'; N/A; 20'

Setbacks - 35' from centerline of adjacent right-of-way or 5' from adjacent right-of-way boundary if no adjacent right-of-way

Building Height - None

Parking - Required parking subject to staff determination via CCZLDO 7.5.100.5.

RESPONSE: The fire station will satisfy the above general development standards of the 6-WD zone.

For the above reasons, the fire station satisfies all approval criteria for an accessory use in the 6-WD zone and should be approved.

C. Proposals That Do Not Require New Land Use Approval

JCEP requests confirmation that relocation of these previously-authorized facilities does not require land use approval:

- Relocation of a guardhouse within the 6-DA zone;
- Relocation of LNG tanks within the 6-WD zone; and
- Relocation within the IND zone of meter station associated with natural gas pipeline.

JCEP proposes only a minor relocation within the same zone of each of these previously-approved components. The earlier approval of these facilities in 2016 was conceptual in nature rather than site-specific and is not subject to site plan approval. Thus, we understand that no new land use approval is required to relocate the proposals within the same zone, and we request confirmation of this interpretation by the County.

D. Approval Criteria in Balance of County Zones

Each development in the IND zone in this Application must respond to each of the approval criteria listed in this section. These proposals include the IWWP in Section II.A.2., the concrete batch facility in Section II.A.3., the SORSC in Section II.A.4., the helipad in Section II.A.5., the administration building in Section II.A.6., the workforce housing in Section II.A.7., the wastewater treatment facilities in Section II.A.8., the park and ride in Section II.A.9., and the temporary construction laydown (located in the IND zone) in Section II.A.10 of this Application. This section collectively refers to these proposals as (the “IND Zone Proposals”). Each proposal satisfies the approval criteria of the IND zone, as follows.

CCZLDO 4.3.220.6 - IND Zone - Additional Conditional Use Review Standards

(a) Industrial developments within an Unincorporated Community Boundary:

- vi. shall not occupy more than 8,000 square feet of floor space in any building or combination of buildings within an Urban Unincorporated Community Boundary; or
- vii. shall not occupy more than 4,000 square feet of floor space in any building or combination of buildings in a Rural Unincorporated Community Boundary.

RESPONSE: None of the IND Zone Proposals are located within an unincorporated community boundary. Therefore, these criteria do not apply to any of the IND Zone Proposals.

(b) Industrial development within an Urban Growth Boundary is not subject to floor square foot limitation but a notice to the city is required as described in subsection (c)(v) below.

RESPONSE: All of the IND Zone Proposals are located outside an urban growth boundary. Therefore, this criterion does not apply to the IND Zone Proposals.

- (c) **Industrial developments on land planned and zoned for industrial uses as of January 1, 2004, located outside of an urban growth boundary when exceeding the size limits of subsections (a) above:**
- i. **Location:** A qualifying site must be located outside of a city Urban Growth Boundary (UGB), and may not be closer than three (3) miles from a UGB of a city containing a population of 20,000 or more.
 - ii. **Building Size:** Subject to building permit approval process; there shall be no limitation on the size or type of industrial buildings authorized.
 - iii. **Sewer Facilities:** Subject to DEQ approval, on-site sewer facilities may be allowed to serve authorized industrial development on qualifying lands, but shall be limited in size to meet only the needs of the authorized industrial use.
 - iv. **Other uses not permitted:** On qualifying lands, retail, commercial and non-accessory residential development is prohibited.
 - v. **Notice to cities:** At least 21 days prior to taking action, notice of pending industrial development (including sewer facilities serving the development) under this section shall be sent to any city within an urban growth boundary within ten (10) miles of the subject site. If the city objects to the pending development, the city and the County shall negotiate to establish conditions of approval, or changes in the development to mitigate concerns raised by the city. If the city requests conditions of approval a notice of decision will be sent to allow an opportunity for a public hearing.

RESPONSE: The “size limitations of subsections (a) above” are “8,000 square feet square feet of floor space in any building or combination of buildings within an Urban Unincorporated Community Boundary” or “4,000 square feet of floor space in any building or combination of buildings in a Rural Unincorporated Community Boundary.” The size limitations by default apply only to buildings within rural or urban unincorporated community boundaries. Because none of the IND Zone Proposals are located within such boundaries, the “size limitations of subsections (a) above” do not apply the IND Zone Proposals and, by extension, neither do the criteria of this subsection (c).

- (d) **The following standards apply to any land identified as an abandoned or diminished mill site regardless of current zoning:**
- i. **On property outside of an Urban Growth Boundary. An “abandoned or diminished mill site” is a former or current wood products mill site that was closed after January 1, 1980, or has been operating at less than 25% of capacity since January 1, 2003, and contains, or contained, permanent**

buildings used in the production or manufacturing of wood products. The County shall identify and determine the boundaries of abandoned or diminished mill sites (the boundary may only include those areas that were improved for the processing or manufacturing of wood products).

- ii. **Location:** The site must be located outside of a city UGB.
- iii. **Building Size:** Subject to the building permit approval process; there shall be no limitations on the size or type of industrial buildings authorized for lands that qualify under this section.
- iv. **Sewer facilities:** Subject to DEQ approval, on-site sewer facilities, or the extension of sewer facilities from a city UGB or County urban unincorporated area, may be allowed to serve authorized industrial development on qualifying lands, but shall be limited in size to meet only needs of the authorized industrial use. The presence of the sewer facilities may not be used to justify an exception to statewide land use planning goals protecting agricultural lands or forestlands or relating to urbanization.
- v. The governing body of a county or its designee shall determine the boundary of an abandoned or diminished mill site. For an abandoned or diminished mill site that is rezoned for industrial use under this section, land within the boundary of the mill site may include only those areas that were improved for the processing or manufacturing of wood products.
- vi. A permit may be approved on an abandoned or diminished mill site as defined in ORS 215.402 or 227.160 for industrial development and accessory uses subordinate to such development on the mill site. The governing body or its designee may not approve a permit for retail, commercial or residential development on the mill site.
- vii. For land that on June 10, 2003, is zoned under statewide land use planning goals protecting agricultural lands or forestlands and that is rezoned for industrial, the governing body of the county or its designee may not later rezone the land for retail, commercial or other nonresource use, except as provided under the statewide land use planning goals or under ORS 197.732.

RESPONSE: None of the IND Zone Proposals are located on land identified as an abandoned or diminished mill site. Therefore, these criteria do not apply to the IND Zone Proposals.

(e) Regionally Significant Industrial Areas – See Special Development Considerations and Overlays

RESPONSE: None of the IND Zone Proposals are within a “regionally significant industrial area” identified as a special development consideration or overlay. Therefore, this criterion does not apply to the IND Zone Proposals.

(f) Conditional Use Review Criteria - The following criteria only apply to Use, Activity or Development identified as conditional uses in the zoning table:

RESPONSE: Among the IND Zone Proposals, only the temporary and non-commercial concrete batch facility is listed as a conditional use in the zoning table at CCZLDO 4.3.200. Therefore, the criteria of this subsection (f) apply only to the concrete batch facility. These criteria do not apply to the other IND Zone Proposals.

- i. COMPATIBILITY: The proposed USE, ACTIVITY OR DEVELOPMENT is required to demonstrate compatibility with the surrounding properties or compatibility may be made through the imposition of conditions. Compatibility means that the proposed use is capable of existing together with the surrounding uses without discord or disharmony. The test is where the proposed use is compatible with the existing surrounding uses and not potential or future uses in the surround area.**

RESPONSE: The temporary and non-commercial concrete batch plant in the area known as Boxcar Hill is compatible with surrounding properties. CCZLDO 4.3.220.6.f. establishes that the test for compatibility under this criterion “is where the proposed use is compatible with the *existing* surrounding uses and not potential or future uses in the surround (sic) area.” (Emphasis added). The area proposed for the plant is bounded by large swaths of IND-zoned property to the north and south, which is currently vacant and is owned by JCEP. To the east and west of the area lie, respectively, a small sliver of recreation-zoned property abutting the bay and an area of recreation-zoned property. The area where JCEP proposes to construct the plant is compatible with the areas to the north and south because they share the same IND zoning and therefore can accommodate similar uses over time. The area is compatible with the recreation-zoned areas to the east because this area is currently undeveloped. The single use to the west is a commercial campground facility, and discussions with the owner and operator indicate that they support the proposed use at this location and foresee no incompatibility. Thus, the concrete batch plant is compatible with surrounding uses.

ii. Within a City Urban Growth Boundary:

- i. Signage – This category does not apply to address markers/stakes, County Road signs, or State or Federal Highway signs. This requirement only applies in the City of Bandon Urban Growth Boundary.**
 - a) All signs must be located on the same property on which the activity to which the sign refers is located. Signs attached to a building, which are allowed by a temporary right-of-way permit to extend into the right-of-way, are not considered off-site signs.**
 - b) No sign shall interfere with the required vision clearance area.**

- c) **Signs placed on or affixed to vehicles and/or trailers which are parked in the public right-of-way, public property, or private property so as to be visible from a public right-of-way where the apparent purpose is to display the sign are prohibited.**
- d) **The area of a sign shall be the area of the smallest rectangle required to encompass the outside of all words, numbers, letters, logos and symbols.**
- e) **Electronic displays or reader boards are prohibited.**
- f) **Manually changed reader boards are prohibited except the following:**
 - i. **Gas station price signs;**
 - ii. **An eating and drinking establishment may have one erasable sign, provided that it does not exceed six square feet in area and it does not intrude into the right-of-way.**
 - iii. **A church may have a bulletin board not exceeding ten (10) square feet in area, provided it has been approved by the Planning Commission as part of the Conditional Use.**
 - iv. **When the angle of a double-sided sign is less than 10 degrees, only one side will be calculated in the sign area.**
- g) **Signs, except as otherwise specifically allowed herein, are prohibited in the public right-of-way.**
- h) **No freestanding sign shall exceed a height of fifteen (15) feet, measured from existing grade to the highest point of the sign.**
- i) **No sign attached to any building shall exceed twenty (20) feet in height, or the height of the building, whichever is less.**
- j) **No single sign shall exceed forty-eight (48) square feet in size.**
- k) **Except as otherwise allowed in this chapter, all signs shall comply with the building setback requirements.**
- l) **No sign projecting from a structure or mounted on a pole shall be less than eight feet above the ground at its lowest point.**
- m) **No freestanding signs shall be permitted in the public right-of-way, except as otherwise specifically allowed in this Chapter.**

- n) Signs attached to a building and projecting into a public right-of-way shall require a temporary right-of-way permit approved by County Road Department or ODOT depending on the type of road.
- o) No sign, or portion thereof, shall be so placed as to obstruct any fire escape or human exit from any portion of a building.
- p) The total exterior sign area for a building shall not be affected by the number of businesses located in the building. The building owner is ultimately responsible for allocating this allowed area to the businesses located therein and for insuring compliance of sign area limitations in the case of multiple businesses being located on a property.
- q) Nuisances or Hazardous Conditions prohibited:
 - i. The illumination of signs shall be designed to eliminate negative impacts on surrounding right-of-way and properties.
 - ii. No sign or light source shall create a distraction, hazard, or nuisance.
 - iii. Signs shall not be used at a location or in a manner so as to be confused with, or construed to be, traffic control devices.
 - iv. All signs shall be securely fastened to their supporting surface or structure.
- r) An eating and drinking establishment may attach to a window a menu, identical to those distributed to customers. Such a menu will not be used in the calculation of total sign area allowed.
- s) Incidental signs displayed strictly for a direction, safety, or the convenience of the public, including but not limited to signs that identify restrooms, public telephones, parking area entrances, and exits are allowed. Individual signs in this category shall not exceed two square feet in area, and shall not be considered in calculating the total sign area allowed.

RESPONSE: The concrete batch plant is not within a city UGB. Therefore, these criteria do not apply to the plant.

iii. Design Standards:

1. **The landscape shall minimize soil erosion. The exterior portion of the property shall provide an ornamental, sight-obscuring fence, wall, evergreen or other screening/planting along all boundaries of the site abutting public roads or property lines that are common to other owners of property that are zoned for residential, except for points of ingress and egress;**

RESPONSE: The landscape for the concrete batch plant will be designed and installed to minimize soil erosion. The remainder of the criterion does not apply to the plant because there are no boundaries of the site that abut public roads or property lines that are common to other owners of property that are zoned for residential.

2. **Lighting: Any lights provided to illuminate any public or private parking area shall be so arranged as to reflect the light away from any abutting or adjacent Urban Residential, Rural Residential or Controlled Development district.**

RESPONSE: This criterion does not apply to the concrete batch plant because the proposed development site does not abut urban residential, rural residential, or controlled development zones.

3. **Exposed storage areas, service areas, utility buildings and structures and similar accessory areas and structures shall be subject to the setbacks of this zoning designation, screen plantings or other screening methods;**

RESPONSE: Exposed storage areas, service areas, utility buildings, structures, and similar accessory areas and structures at the site of the concrete batch plant will comply with all setbacks, screen plantings, or other screening methods of the IND zone.

4. **Trash service shall be provided to the facility and the area for trash receptacle or receptacles shall be identified on the plot plan; and**

RESPONSE: Trash service will be provided to the concrete batch plant .

5. **Hours of operation may be required in areas predominantly surrounded by residential zones.**

RESPONSE: This criterion does not apply to the concrete batch plant because it is not predominantly surrounded by residential zones.

CCZLDO 4.3.225 - IND Zone - General Siting Standards

All new USES, ACTIVITIES and DEVELOPMENT are subject to the following siting standards:

- (1) **Agricultural and Forest Covenant - Any applicant for a dwelling permit adjacent to a Forest or Exclusive Farm Zone shall sign a statement on the Compliance**

Determination or Zoning Clearance Letter acknowledging that: “the normal intensive management practices occurring on adjacent resource land will not conflict with the rural residential landowner’s enjoyment of his or her property.

RESPONSE: None of the IND Zone Proposals are located adjacent to a forest or exclusive farm use zone. Therefore, this criterion does not apply to the IND Zone Proposals.

- (2) Fences, Hedges, and Walls: No requirement, but vision clearance provisions of Section 7.1.525 apply.**

RESPONSE: None of the IND Zone Proposals involve fences, hedges, or walls. The vision clearance standards of CCZLDO 7.1.525 forbid visual obstructions greater than thirty-six (36) inches in height within a “vision clear area,” which is an area along the right-of-way of the street for a minimum of 100 feet where the speed limit is less than 35 M.P.H, and not less than 150 feet where the speed limit is greater than 35 m.p.h. The clear vision area shall be effective from a point in the center of the access not less than 25 feet back from the street right-of-way line. The IND Zone Proposals will not involve visual obstructions within the vision clear area that CCZLDO 7.1.525 establishes. Therefore, the IND Zone Proposals satisfy these criteria.

- (3) Limitation on uses of manufactured dwellings/structures for commercial purposes pursuant to ORS 466 et seq. Manufactured dwellings shall not be used for commercial purposes except:**

- (a) Where use of the manufactured dwelling for commercial purposes is authorized by the Building Codes Agency.**
- (b) Where used as a temporary sales office for manufactured structures; or**
- (c) As part of an approved home occupation. [OR-92-07-012PL]**

RESPONSE: None of the IND Zone Proposals involve the use of manufactured dwellings for commercial purposes. Therefore, these criteria do not apply to the IND Zone Proposals.

- (4) New lots or parcels - Creation of lots or parcels, unless it meets the circumstances of § 5.6.130, shall meet the street frontage, lot width, lot depth and lot size. Minimum road frontage/lot width shall be met unless waived by the Planning Director in consultation with the County Surveyor and County Roadmaster due to creating an unsafe or irregular configuration:**

- (a) Minimum Street frontage should be at least 30 feet; and**
- (b) Minimum lot width and Minimum lot depth is 50 feet.**

Minimum parcel/lot size cannot be waived or varied unless otherwise provided by a specific zoning regulation. Tax lot creation and consolidations do not change the legally created status of a lot or parcel.

RESPONSE: None of the IND Zone Proposal involves the creation of a new lot or parcel. Therefore, these criteria do not apply to the IND Zone Proposals.

(5) Parking - Off-street access, parking and loading requirements per Chapter VII apply.

RESPONSE: The IND Zone Proposals are subject to the parking requirements of Chapter 7.5. CCZLDO 7.5.175 lists the parking required by specific use. CCZLDO 7.5.100.5. explains that “[p]arking space requirements for a use not specifically mentioned shall be the same as for a use which has similar traffic-generating characteristics as determined by the Planning Director.” JCEP will supplement this Application narrative with a site plan that shows the various parking areas JCEP has proposed in various areas in and around the LNG Terminal site, which comply with the requirements of CCZLDO Chapter 7. Therefore, the IND Zone Proposals will satisfy this criterion.

The IND Zone Proposals’ compliance with additional parking requirements is discussed below.

(6) Riparian -

- (a) Riparian vegetation setback within 50 feet of an estuarine wetland, stream, lake or river, as identified on the Coastal Shoreland and Fish and Wildlife habitat inventory maps, shall be maintained except:**
- i. Trees certified as posing an erosion or safety hazard. Property owner is responsible for ensuring compliance with all local, state and federal agencies for the removal of the tree.**
 - ii. Riparian vegetation may be removed to provide direct access for a water-dependent use if it is a listed permitted within the zoning district;**
 - iii. Riparian vegetation may be removed in order to allow establishment of authorized structural shoreline stabilization measures;**
 - iv. Riparian vegetation may be removed to facilitate stream or stream bank clearance projects under a port district, ODFW, BLM, Soil & Water Conservation District, or USFS stream enhancement plan;**
 - v. Riparian vegetation may be removed in order to site or properly maintain public utilities and road right-of-ways;**
 - vi. Riparian vegetation may be removed in conjunction with existing agricultural operations (e.g., to site or maintain irrigation pumps, to limit encroaching brush, to allow harvesting farm crops customarily grown within riparian corridors, etc.) provided that such vegetation removal does not encroach further into the vegetation buffer except as needed to provide an access to the water to site or maintain irrigation pumps; or**

- vii. **The 50-foot riparian vegetation setback shall not apply in any instance where an existing structure was lawfully established and an addition or alteration to said structure is to be sited not closer to the estuarine wetland, stream, lake, or river than the existing structure and said addition or alteration is not more than 100% of the size of the existing structure's "footprint".**
- (b) **Riparian removal within the Coastal Shoreland Boundary requires an Administrative Conditional Use application and review. See Special Development Considerations Coastal Shoreland Boundary.**
- (c) **The 50' measurement shall be taken from the closest point of the ordinary high-water mark to the structure using a right angle from the ordinary high water mark.**

RESPONSE: None of the IND Zone Proposals are located within 50 feet of an estuarine wetland, stream, lake or river identified by the applicable County maps. Therefore, these criteria do not apply to the IND Zone Proposals.

(7) Setbacks:

- (a) **All buildings or structures with the exception of fences shall be set back a minimum of thirty-five (35) feet from any road right-of-way centerline, or five (5) feet from the right-of-way line, whichever is greater. This setback may be greater under specific zoning siting requirements.**
- (b) **Firebreak Setback - New or replacement dwellings on lots, parcels or tracts abutting the "Forest" zone shall establish and maintain a firebreak, for a distance of at least 30 feet in all directions. Vegetation within this firebreak may include mowed grasses, low shrubs (less than ground floor window height), and trees that are spaced with more than 15 feet between the crowns and pruned to remove dead and low (less than 8 feet from the ground) branches. Accumulated needles, limbs and other dead vegetation should be removed from beneath trees.**

RESPONSE: All of the IND Zone Proposals except for the IWWP, which is not a building or structure, will comply with the thirty-five-foot setback from any road right-of-way centerline or five feet from the right-of-way- line, whichever is greater. Therefore, all the IND Zone Proposals comply with subsection (a) above.

Furthermore, none of the IND Zone Proposals abuts the forest zone. Therefore, subsection (b) above does not apply to any of the IND Zone Proposals.

CCZLDO 7.5 - Additional Parking Requirements

CCZLDO 7.5.150 - Parking Area Design

1. **Ingress and Egress:** In any zoning district, driveways or access ways providing ingress and egress for private/public parking areas or garages and parking spaces shall be permitted, together with any appropriate traffic control devices in any required yard or setback area.

RESPONSE: This section does not impose approval criteria on the IND Zone Proposals.

2. **Minimum Standards for Parking:** All public or private parking areas and parking spaces shall be designed and laid out to conform to the minimum standards as specified in the Parking Table and Diagram. All parking lot designs shall be reviewed and approved by the County Roadmaster.

RESPONSE: JCEP will provide a supplement to this Application that shows that parking for the IND Zone Proposals will be designed and laid out in conformance with the minimum standards in the Parking Table and Diagram, as more fully set forth below.

3. **Service Drive:** Groups of three or more parking spaces, except those in conjunction with single-family or two-family dwelling structures on a single lot, shall be served by a service drive so that no backward movement, or other maneuvering of a vehicle within a public right-of-way, other than an alley, will be required. Service drives shall be designed and constructed to facilitate the flow of traffic, provide maximum safety for ingress and egress and maximum safety of pedestrians.

RESPONSE: JCEP will provide a supplement to this Application that shows that parking for the IND Zone Proposals will conform with this requirement. Parking areas will have service drives to eliminate the need for backward movement or other maneuvering of vehicles and to facilitate the flow of traffic, provide maximum safety for ingress and egress and maximum safety for pedestrians.

4. **Lighting:** Any lights provided to illuminate any public or private parking area shall be so arranged as to reflect the light away from any abutting or adjacent residential district or use.

RESPONSE: None of the IND Zone Proposals abuts a residential zone. This criterion does not apply to the Application.

5. **Landscaping:** For every 10 required parking spaces, 16 square feet of landscaping will be required. Each 16 square foot area should include one tree and three one-gallon shrubs or living ground cover.

RESPONSE: JCEP will provide a supplement to this Application that shows that parking for the IND Zone Proposals will provide 16 sf of landscaping for each 10 required parking spaces, and each 16-sf area of landscaping will include one tree and one three-gallon shrub or living ground cover.

6. **Sign standards:** All signs must comply with the current manual on uniform traffic control devices.

RESPONSE: All signage in all parking areas associated with the IND Zone Proposals will comply with the current manual on uniform traffic control devices.

CCZLDO 4.3.230 - IND Zone - Additional Siting Standards

(6) Industrial (IND) and Airport Operations (AO) - The following siting standards apply to all USES, activities and development within the IND and AO zoning districts.

(a) Minimum lot/parcel size –

- i. No minimum lots size standard for this zone.**
- ii. Minimum street frontage and minimum lot width is 20 feet.**

RESPONSE: The IND Zone Proposals, with the exception of the IWWP which is a utility pipeline and not a building or structure, will comply with the 20 foot minimum street frontage and lot width requirement of subsection (a)(ii) above.

Subsection (a)(i) does not impose approval criteria on the IND Zone Proposals.

(b) Setback -

- i. Front, side and rear setbacks are 5 feet from abutting properties that are zoned Controlled Development or residential zoning districts.**
- ii. Setback exception – Front yard setback requirements of this Ordinance shall not apply in any residential district where the average depth of existing front yards on developed lots within the same zoning district block, but no further than 250 feet from the exterior side lot lines of the lot and fronting on the same side of the street as such lot, is less than the minimum required front yard building setback. In such cases the front yard setback requirement on any such lot shall not be less than the average existing front yard building setback.**

RESPONSE: The IND Zone Proposals do not abut a residential zone. These criteria do not apply to the Application.

(c) Building Height - does not have any requirement, except those sites abutting a residential or controlled development zone shall have a max height of 35 feet plus one (1) additional foot in height for each foot of setback exceeding 5 feet (i.e. if the setback is 10 feet, the maximum building height would be 40 feet). However, spires, towers, domes, steeples, flag poles, antennae, chimneys, solar collectors, smokestacks, ventilators or other similar objects may be erected above the prescribed height limitations, provided no usable floor space above the height limits is added. Such over height object shall not be used for advertising of any kind.

RESPONSE: None of the IND Zone Proposals involve a building on a site that abuts a residential or controlled development zone. Therefore, this criterion does not apply to the IND Zone Proposals.

(d) Building Density or Size limits –

- i. For building or buildings located within an Unincorporated Community Boundary as adopted by the Coos County Comprehensive Plan Volume 1 Part 2 § 5.5 the following square foot requirements apply:**
 - 1. Urban Unincorporated Community shall not exceed 60,000 square feet of floor space; or**
 - 2. Rural Unincorporated Community shall not exceed 40,000 square feet of floor space.**

RESPONSE: None of the IND Zone Proposals are located within an unincorporated community boundary. Therefore, these criteria do not apply to the IND Zone Proposals.

(e) Design Standards:

- i. The landscape shall minimize soil erosion. The exterior portion of the property shall provide an ornamental, sight-obscuring fence, wall, evergreen or other suitable screening/planting along all boundaries of the site abutting public roads or property lines that are common to other owners of property that are zoned for residential, except for points of ingress and egress;**

RESPONSE: The landscape for the IND Zone Proposals will minimize soil erosion. Furthermore, the exterior portions of the properties where the IND Zone Proposals are located will provide an ornamental, sight-obscuring fence, wall, evergreen or other suitable screening/planting along all site boundaries abutting public roads. None of the IND Zone Proposals abut a residential zone. Therefore, the IND Zone Proposals comply with this criterion.

- ii. Lighting: Any lights provided to illuminate any public or private parking area shall be so arranged as to reflect the light away from any abutting or adjacent Rural Residential, Urban Residential or Controlled Development Zoning districts.**

RESPONSE: None of the IND Zone Proposals abuts a residential zone. This criterion does not apply to the Application.

- iii. Exposed storage areas, service areas, utility buildings and structures and similar accessory areas and structures shall be subject to the setbacks of the zoning designation, screen plantings or other screening methods;**
- iv. Trash service shall be provided to the facility and the area for trash receptacle or receptacles shall be identified on the plot plan; and**

- v. **Hours of operation may be required in areas predominantly surrounded by residential zones.**

RESPONSE: With respect to each of the IND Zone Proposals (except the IWWP, which is a utility pipeline) any exposed storage areas, service areas, utility buildings and structures and similar accessory areas and structures will comply with the applicable setbacks of the zoning designation, trash service will be provided to each individual proposal, and the area for trash service is identified on the plot plan.

Subsection (v) above is not an approval criterion.

CCZLDO 4.11 - IND Zone - Special Development Considerations

CCZLDO 4.11.125.1 - Mineral & Aggregate Plan Implementation Strategies (Balance of County Policy 5.5)

CCZLDO 4.11.125.1 imposes approval criteria on development within 500 feet of a County-mapped protected mineral and aggregate site.

RESPONSE: None of the IND Zone Proposals are within 500 feet of a County-mapped protected mineral and aggregate site. Therefore, this criterion does not apply to the IND Zone Proposals.

CCZLDO 4.11.125.2 - Water Resources (Balance of County Policy 5.8)

The water resources maps have inventoried the following:

- **Existing municipal watersheds;**
 - **Watersheds for potential reservoir sites;**
 - **Dam & Reservoir sites considered suitable by the Water Resources Department;**
 - **Possible Future Reservoir sites suggested by Coos Bay-North Bend Water Board (April 4, 1985);**
 - **Existing wells in the Dunes Aquifer;**
 - **Approximate extent of Dunes Aquifer; and**
 - **Existing Water District Withdrawal Points.**
- a. **Coos County shall not permit further new residential and commercial development in rural areas where the Oregon State Water Resources Department (OSWRD), the Oregon State Environmental Quality Commission (EQC), or the Coos County Health Department has submitted compelling evidence to Coos County that water resources within that area would be irreversibly degraded by new consumptive withdrawal or by**

additional septic tank or other waste discharges. Implementation measures in such areas may include a moratorium on construction permits for new residences or new commercial uses in the identified area. If an adequate solution to resolve the problem cannot be reached, such as extension of public water to the area in conformance with this plan, the County shall initiate a process to redesignate any undeveloped land within the area to a resource designation, and shall reallocate any other plan designations on such undeveloped land to other rural areas of the County on an acreage-by-acreage basis.

RESPONSE: None of the IND Zone Proposals are located within an area where the Oregon State Water Resources Department, the Oregon State Environmental Quality Commission, or the Coos County Health Department has submitted compelling evidence to Coos County that water resources within that area would be irreversibly degraded by new consumptive withdrawal or by additional septic tank or other waste discharges. Therefore, this criterion does not apply to the IND Zone Proposals.

b. Coos County shall protect the following dam sites identified by the Oregon Water Policy Review Board for possible future water resource development or until alternative methods of meeting water needs are developed:

- **West Fork of the Millicoma River, site 223.**
- **South Fork of Coquille River at Eden Ridge, Site 430.**
- **North Fork Coquille River, Site 146A.**
- **Rock Creek at Rasler Creek, Site 201.**
- **Catching Creek, Site 101.**
- **Fourmile Creek, Site 158.**
- **Joe Ney Slough, (no site number)**
- **North Fork Floras Creek at Oakietown, Site 435.**

(Source: Oregon State Water Resources Department) Implementation shall occur through appropriate designation on the Water Resource Map, which is an implementation measure." Interim uses shall be limited to farm and forest uses, as these do not materially interfere with the possible use of these sites for dams. This strategy recognizes: (1) the responsibility of the State Water Policy Board under ORS 536.300 to study and formulate programs for the use and control of water resources in the state, and (2) the responsibility of the county to protect potential water resources consistent with Oregon Statewide Planning Goal #5 provisions.

RESPONSE: None of the IND Zone Proposals are located within one of the above-listed dam sites. Therefore, this criterion does not apply to the IND Zone Proposals.

CCZLDO 4.11.125.3 - Historical, Cultural and Archaeological Resources, Natural Areas and Wilderness (Balance of County Policy 5.7)

The Historical/Archeological maps have inventoried the following:

- Historical;
- Area of Archaeological Concern;
- Botanical; and
- Geological Resources.

Purpose Statement:

Coos County shall manage its historical, cultural and archaeological areas, sites, structures and objects so as to preserve their original resource value. This strategy recognizes that preservation of significant historical, cultural and archaeological resources is necessary to sustain the County's cultural heritage.

- a. **Historical Structures:** Coos County shall permit the expansion, enlargement or other modification of identified historical structures or sites provided that such expansion, enlargement or other modification is consistent with the original historical character of the structure or site:
 - i. This strategy shall be implemented by requiring Planning Director review of site and architectural plans. The proposed project shall be consistent with the original historical character of the site and structure.
 - ii. This strategy recognizes that enlargement, expansion or modification of historical structures is not inconsistent with Coos County's historic preservation goal. The Planning Director shall approve the alteration or modification if the proposal is found to be compatible with the character of the resource with respect to style, scale, texture and construction materials or it is found to enhance the historical value of the resource. Further, this strategy recognizes that the site and architectural modification may be necessary to preserve, protect or enhance the original historical character of the structure.
 - iii. If there is evidence to show that the cost of repairs or restoration cost more than the value of the structure then the Planning Commission may authorize the structure to be removed and replaced with something of like value.

- iv. **Staff shall refer to the Oregon State Historical Preservation Office data for details on locations of historical structures.**

RESPONSE: None of the IND Zone Proposals involve the expansion, enlargement or other modification of an identified historical structure or site. Therefore, these criteria do not apply to the IND Zone Proposals.

- b. **Areas of Archaeological Concern: Coos County shall continue to refrain from widespread dissemination of site-specific inventory information concerning identified archaeological sites. Rather, Coos County shall manage development in these areas so as to preserve their value as archaeological resources.**

- i. **This strategy shall be implemented by requiring development proposals to be accompanied by documentation that the proposed project would not adversely impact the historical and archaeological values of the project's site. "Sufficient documentation" shall be a letter from a qualified archaeologist/historian and/or a duly authorized representative of a local Indian tribe(s).**
- ii. **Properties which have been determined to have an "archaeological site" location must comply with the following steps prior to issuance of a "Zoning compliance Letter" for building and/or septic permits.**
 - 1) **The County Planning Department shall make initial contact with the Tribe(s) for determination of an archaeological site(s). The following information shall be provided by the property owner/agent:**
 - a) **Plot plan showing exact location of excavation, clearing, and development, and where the access to the property is located;**
 - b) **Township, range, section and tax lot(s) numbers; and**
 - c) **Specific directions to the property.**
 - 2) **The Planning Department will forward the above information including a request for response to the appropriate tribe(s).**
 - 3) **The Tribe(s) will review the proposal and respond in writing within 30 days to the Planning Department with a copy to the property owner/agent.**
 - 4) **It is the responsibility of the property owner/agent to contact the Planning Department in order to proceed in obtaining a "Zoning Compliance Letter" (ZCL) or to obtain further instruction on other issues pertaining to their request.**

- iii. In cases where adverse impacts have been identified, then development shall only proceed if appropriate measures are taken to preserve the archaeological value of the site. "Appropriate measures" are deemed to be those, which do not compromise the integrity of remains, such as:
 - 1) Paving over the sites;
 - 2) Incorporating cluster-type housing design to avoid the sensitive areas; or
 - 3) Contracting with a qualified archaeologist to remove and re-inter the cultural remains or burial(s) at the developer's expense. If an archaeological site is encountered in the process of development, which previously had been unknown to exist, then, these three appropriate measures shall still apply. Land development activities found to violate the intent of this strategy shall be subject to penalties prescribed by ORS 97.745 (Source: Coos Bay Plan).
- iv. This strategy is based on the recognition that preservation of such archaeologically sensitive areas is not only a community's social responsibility but is also a legal responsibility pursuant to Goal #5 and ORS 97.745. It also recognizes that historical and archaeological sites are non-renewable, cultural resources (Source: Coos Bay Plan).

RESPONSE: None of the IND Zone Proposals are within, and none will affect, an archaeological site identified on the County's "Goal 5 Element Historical, Botanical, Geological & Archaeological Locations" map. Therefore, these criteria do not apply to the IND Zone Proposals.

- c. **Botanical:** Coos County shall protect sites of special botanical interest by use of appropriate zoning for the site inventoried on the Botanical Resources Map. Such significant Botanical Areas shall be preserved in their natural character, as consistent with the zoning established for the site. However, this is not meant to preclude the development of residences adjacent to the Yoakum Point Darlingtonia Bog; as otherwise allowed by the Coos County Comprehensive Plan, residences may be permitted adjacent to the bog provided care is taken during construction of such to ensure that the bog is not disturbed in any way. This strategy recognizes the value of Significant Botanic Areas, and also that residential development can occur in a compatible way with the Yoakum Point Darlingtonia Bog.

RESPONSE: None of the IND Zone Proposals are within an area of special botanical interest identified on the County's "Goal 5 Element Historical, Botanical, Geological & Archaeological Locations" map. Therefore, this criterion does not apply to the IND Zone Proposals.

- d. **Geological Sites:** Coos County shall protect the Geologic Sites inventories on the Geologic Resources Map through appropriate zoning that preserves the sites in

their natural character. Appropriate zoning (as designated on the Official Zoning Map) and public ownership of the sites ensures that the sites will be preserved in their natural character. This strategy recognizes the value of inventoried Geologic Sites.

RESPONSE: None of the IND Zone Proposals are within a Geologic Site that is inventoried and identified on the County's "Goal 5 Element Historical, Botanical, Geological & Archaeological Locations" map. JCEP incorporates its response to CBEMP Policy #18 set forth later in this narrative in response to this criterion.

CCZLDO 4.11.125.4 - Beaches and Dunes (Policy 5.10)

The Beaches and Dunes map has inventoried the following:

Beaches and Dunes:

- **Suitable for most uses; few or no constraints (Does not require a review)**
- **Limited Suitability; special measures required for most development**
- **Not Suitable for Residential, commercial or Industrial Structures**

Purpose Statement:

Coos County shall base policy decisions for dunes on the boundaries for these areas as identified on the plan map titled "Development Potential within Ocean Shorelands and Dunes" and the boundaries delineates following specific areas "Suitable", "Limited Suitability" and "Not Suitable" areas of development potential.

- a. Limited Suitability: "Beach and Dune Areas with Limited Development Suitability" includes all dune forms except older stabilized dunes, active foredunes, conditionally stable foredunes that are subject to ocean undercutting or wave overtopping, and interdune areas (deflation plains) subject to ocean flooding.**

The measures prescribed in this policy are specifically required by Statewide Planning Goal #18 for the above-referenced dune forms; and that this strategy recognizes that designated mitigation sites must be protected from other uses.

Implementation shall occur through an Administrative Conditional Use process, which shall include submission of a site investigation report that addresses this subsection, by a qualified registered and licensed geologist or engineer.

- i. Coos County shall permit development within areas designated as "Beach and Dune Areas with Limited Development Suitability" only upon the establishment of findings that consider at least:**
- a) The type of use proposed and the adverse effects it might have on the site and adjacent areas;**

- b) **The need for temporary and permanent stabilization programs and the planned maintenance of new and existing vegetation;**
- c) **The need for methods for protecting the surrounding area from any adverse effects of the development; and**
- d) **Hazards to life, public and private property, and the natural environment which may be caused by the proposed use.**

RESPONSE: Among the IND Zone Proposals, only the IWWP is within an area identified by County maps as a beach or dune area with limited development suitability. These criteria do not apply to the IND Zone Proposals, except for the IWWP.

The IWWP is within a beach or dune area of limited development suitability, according to the County's Development Potential within Ocean Shorelands and Dunes map. Therefore, JCEP must submit a site investigation report from a qualified registered and licensed geologist or engineer that addresses the above criteria. This required assessment of development suitability for various proposed uses including the IWWP at this location is addressed in a technical memorandum prepared by SHN Consultants dated July 25, 2019, which provides analysis and evidentiary support for a conclusion of consistency with this Policy. The subject report is included herein as Exhibit 12.

- ii. **Further, Coos County shall cooperate with affected local, state and federal agencies to protect the groundwater from drawdown, which would lead to loss of stabilizing vegetation, loss of water quality, or intrusion of saltwater into water supplies. Coos County shall cooperate with state and federal agencies in regulating the following actions in the beach and dune areas with limited development potential:**
 - a) **Destruction of desirable vegetation (including inadvertent destruction by moisture loss or root damage);**
 - b) **The exposure of stable and conditionally stable areas to erosion;**
 - c) **Construction of shore structures which modify current air wave patterns leading to beach erosion; and**
 - d) **Any other development actions with potential adverse impacts.**

RESPONSE: This subsection (ii) does not impose approval criteria on the IND Zone Proposals.

- b. **Unsuitable: Coos County shall prohibit residential development and commercial and industrial buildings within areas designated as "Beach and Dune Areas Unsuitable for Development". The "Beach and dune Areas Unsuitable for Development" includes: active foredunes; other foredunes which are conditionally stable and that are subject to ocean undercutting or wave overtopping; and interdune areas (deflation plains) that are subject to ocean flooding.**

The measures prescribed in this policy are specifically required by Statewide Planning Goal #18 for the above referenced dune forms, and that is important to ensure that development in sensitive beach and dune areas is compatible with or can be made compatible with, the fragile and hazardous conditions common to such areas.

Implementation shall occur through an Administrative Conditional Use process, which shall include submission of a site investigation report by a registered civil engineer or geologist that addresses this subsection. Coos County shall permit other developments in these areas only:

- i. When specific findings have been made that consider at least:**
 - a) the type of use proposed and the adverse effects it might have on the site and adjacent areas;**
 - b) the need for temporary and permanent stabilization programs and the planned maintenance of new and existing vegetation;**
 - c) the need for methods for protecting the surrounding area from any adverse effects of the development, and**
 - d) hazards to life, public and private property, and the natural environment, which may be caused by the proposed use, and**
- ii. When it is demonstrated that the proposed development:**
 - a) is adequately protected from any geologic hazards, wind erosion, undercutting, ocean flooding and storm waves; or is of minimal value; and**
 - b) is designed to minimize adverse environmental effects, and**
- iii. When breaching of foredunes is contemplated the following specific criteria has to be addressed:**
 - a) the breaching and restoration is consistent with sound principles of conservation, and either**
 - b) the breaching is necessary to replenish sand supply in interdune areas, or**
 - c) the breaching is done on a temporary basis in an emergency (e.g., fire control, cleaning up oil spills, draining farm lands, and alleviating flood hazards).**
- iv. Coos County shall cooperate with affected local, state and federal agencies to protect the groundwater from drawdown which would lead to loss of**

stabilizing vegetation, loss of water quality, or intrusion of saltwater into water supplies. Coos County shall cooperate with state and federal agencies in regulating the following actions in the beach and dune areas with limited development potential:

- a) Destruction of desirable vegetation (including inadvertent destruction by moisture loss or root damage);
- b) The exposure of stable and conditionally stable areas to erosion;
- c) Construction of shore structures which modify current air wave patterns leading to beach erosion; and
- d) Any other development actions with potential adverse impacts.

RESPONSE: None of the IND Zone Proposals are located in a beach or dune area that is “unsuitable” for development. Therefore, these criteria do not apply to the IND Zone Proposals.

CCZLDO 4.11.125.5 - Non-Estuarine Shoreland Boundary (Balance of County Policy 5.10)

The Coastal Shoreland Boundary map has inventoried the following:

- Coastal Shoreland Boundary
- Beach Erosion
- Coastal Recreation Areas
- Area of Water-Dependent Uses
- Riparian Vegetation
- Fore Dunes
- Head of Tide
- Steep Bluffs over 50% Slope
- Significant wetland wildlife habitats
- Wetlands under agricultural use
- Areas of Exceptional Aesthetic or Scenic Quality and Coastal Headlands
- Headland Erosion

Purpose Statement:

Protection of major marshes (wetlands), habitats, headlands, aesthetics, historical and archaeological sites: Coos County shall provide special protection to major marshes, significant wildlife habitat, coastal headlands, exceptional aesthetic resources, and historic and archaeological sites located within the Coastal Shorelands Boundary of the ocean, coastal lakes and minor estuaries. This strategy shall be implemented through plan designations and ordinance measures that limit uses in these special areas to those uses that are consistent with protection of natural values, such as propagation and selective harvesting of forest products, grazing, harvesting wild crops, and low intensity water-dependent recreation. This strategy recognizes that special protective consideration must be given to key resources in coastal shorelands over and above the protection afforded such resources elsewhere in this plan.

Coos County shall consider:

- i. "Major marshes" to include certain extensive marshes associated with dune lakes in the Oregon Dunes National Recreation Area and wetlands associated with New River as identified in the Inventory text and maps, and on the Special Considerations Map;**
- ii. "Significant wildlife habitat" to include "sensitive big-game range", Snowy Plover nesting areas, Bald Eagle, and Osprey nesting areas, Salmonid spawning and rearing areas, and wetlands;**
- iii. "Coastal headlands" to include Yoakum Point, Gregory Point, Shore Acres, Cape Arago south to Three-Mile Creek, Five Mile Point, and Coquille Point;**
- iv. "Exceptional resources Aesthetic or Scenic Quality" to include the coastal headlands identified above, and other areas identified in the Coastal Shorelands Inventory Map; and**
- v. "Historical, cultural and archaeological sites" to include those identified in the Historical, Cultural and Archaeological Sites Inventory and Assessment.**

RESPONSE: JCEP acknowledges this aspirational policy and implementation objectives but notes that these provisions do not constitute approval criteria that apply to the IND Zone Proposals.

- a. Uses allowed within the Coastal Shoreland Boundary: This strategy recognizes: (1) that Coos County's rural shorelands are a valuable resource and accordingly merit special consideration; and (2) that Statewide Planning Goal #17 places strict limitations on land divisions within coastal shorelands.**
 - i. Uses within the Coastal Shoreland Boundary: Coos County shall manage its rural areas within the "Coastal Shorelands Boundary" of the ocean, coastal lakes and minor estuaries through implementing ordinance measures that allow the following uses:**
 - a) Farm uses as provided in ORS 215;**

- b) **Propagation and harvesting of forest products consistent with the Oregon Forest Practices Act.**
- c) **private and public water dependent recreation developments;**
- d) **aquaculture;**
- e) **water-dependent commercial and industrial uses and water-related uses are allowed only upon finding by the Board of Commissioners that such uses satisfy a need, which cannot otherwise be accommodated on shorelands in urban and urbanizable areas;**
- f) **single family residences on existing lots, parcels, or units of land when compatible with the objectives and implementation standards of the Coastal Shorelands goal, and as otherwise permitted by the underlying zone; or g) any other uses, provided that the Board of Commissioners determines that such uses:**
- g) **any other uses, provided that the Board of Commissioners determines that such uses:**
 - a. **Satisfy a need which cannot be accommodated at other upland locations or in urban or urbanizable areas;**
 - b. **Are compatible with the objectives of Statewide Planning Goal #17 to protect riparian vegetation and wildlife habitat;**
 - c. **The "other" use complies with the implementation standard of the underlying zone designation; and**
 - d. **In addition, the above uses shall only be permitted upon a finding that such uses do not otherwise conflict with the resource preservation and protection policies established elsewhere in this plan.**

RESPONSE: JCEP acknowledges the above policy objectives but notes that these provisions do not constitute approval criteria that apply to IND Zone Proposals. CCZLDO 4.11.125(5)(a)(i)(a)-(g) above explain that the County must manage its rural areas within the Coastal Shorelands Boundary “through implementing ordinance measures that allow the following uses[.]” These provisions do not themselves restrict the uses allowed in rural areas within the Coastal Shorelands Boundary, including where JCEP proposes to construct the IND Zone Proposals. Rather, these provisions obligate the County to implement such restrictions through separate ordinances. These provisions do not create any obligation for JCEP or this Application. Therefore, they do not constitute approval criteria for this Application.

However, because all of the IND Zone Proposals except the concrete batch plant proposed in Section II.A.3. of this Application and portions of the temporary construction laydown proposed in Section II.A.10. of this Application (Boxcar Hill laydown) are located within the County's Coastal Shorelands Boundary, this Application addresses the remaining provisions of CCZLDO 4.11.125(5).

ii. **A site plan and design review is only necessary when required in Coos County Comprehensive Plan Volume I Part 3 § 3.5: Structures associated with the above uses, with the exception of farm and forest uses, shall only be permitted after an Administrative Conditional Use Review or higher review addressing the criteria and requirements of this subsection below and upon a finding that such uses do not otherwise conflict with the Special Development Considerations and Overlay Zones found in this Ordinance.**

a) **Site Review and Approval Criteria. Construction, site development and landscaping shall be carried out in substantial accord with the plans, drawings, sketches and other documents as approved.**

Nothing in this subsection shall be construed to prevent ordinary repair, maintenance and replacement of any part of the building or landscaping which does not involve a substantial change from the purpose and objectives of this section. Proposed "substantial changes" shall be submitted to the Planning Director for approval. All variances from the site development criteria which are deemed necessary by the applicant shall be requested pursuant to ARTICLE 5.3. These standards are intended to provide a frame of reference for the applicant to the development of a site and building plans as well as a method of review. These standards shall not be regarded as inflexible requirements, nor do they advocate any particular architectural style, for they are intended to encourage creativity, invention and innovation. The following standards shall be utilized in reviewing the plans, drawings, sketches and other documents required under for this review:

1. Landscaping

- a. **The landscape shall be such to minimize soil erosion and lessen the visual impact;**
- b. **Any grade changes shall be in keeping with the general appearance of neighboring developed areas.**

2. Structures

- a. **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;**
- b. **The achievement of such relationship may include the enclosure of space in conjunction with other existing buildings or other proposed buildings and the creation of focal points with respect to avenues of approach, terrain features or other buildings.**

3. Drives, Parking and Circulation

With respect to vehicular and pedestrian circulation, including walkways, interior drives and parking, special attention shall be given to the location and number of access points, general interior circulation, separation of pedestrian and vehicular traffic, and arrangement of parking areas that are safe and convenient and must comply with the standards found in Chapter VII. The Roadmaster is responsible for determining compliance with this subsection.

4. Surface Water Drainage

Special attention shall be given to proper site surface drainage so that removal of surface waters will not adversely affect neighboring properties, the public storm drainage system, or create environmental problems.

5. Utility Service

- a. **Whenever feasible, electric, telephone and other utility lines shall be underground;**
- b. **Any utility installations remaining above ground shall be located so as to have a harmonious relation to neighboring properties and the site;**
- c. **The proposed method of sanitary sewage disposal from all buildings shall be indicated.**

RESPONSE: Coos County Comprehensive Plan Volume I, Section 3.5 does not require site plan and design review for the IND Zone Proposals located within the Coastal Shorelands Boundary. Therefore, these criteria do not apply to the IND Zone Proposals.

b) Application Submittal and Review Procedure.

- 1. Submission of Documents - A prospective applicant for a building or other permit who is subject to site design review shall submit the following to the County Planning Director:**
 - a. A site plan, drawn to scale, shows the proposed layout of all structures and other improvements;**
 - b. A landscape plan, drawn to scale, showing the location of existing trees proposed to be retained on the site, the location and design of landscaped areas, the varieties and sizes of trees and plant materials to be planted on the site, other pertinent landscape features, and irrigation systems required to maintain trees and plant materials;**
 - c. Architectural drawings or sketches, drawn to scale, including floor plans, in sufficient detail to permit computation of yard requirements and showing all elevations of the proposed structures and other improvements as they will appear on completion of construction;**
 - d. Specifications as to type, color and texture of exterior surfaces of proposed structures including reflective surfaces of solar collectors;**
 - e. An application request which shall include:**
 - 1) Name and address of applicant;**
 - 2) Statement of applicant's legal interest in the property (owner, contract purchaser, lessee, renter, etc.) and a description of that interest, and in case the applicant is not the owner, verification of the owner's consent;**
 - 3) Address and legal description of the property;**
 - 4) Statement explaining the intended request;**
 - 5) The required fee; and**

- 6) Any other materials or information as may be deemed necessary to assist in evaluation of the request. The request will be made prior to deeming the application complete. However, if this review is before the hearings body they may request for additional information to ensure compliance.

2. **Threshold Standard.** The Planning Director has the discretion to waive part or all of the site plan requirements if, in the Director's judgment, the proposed development is "de minimis" in extent to the existing development.

RESPONSE: The IND Zone Proposals are not subject to site design review. Therefore, subsection 1 above does not apply. Subsection 2 is not an approval criterion for the IND Zone Proposals.

- b. **Land Divisions within the Coastal Shoreland Boundary:** This strategy recognizes that Coos County's rural shorelands are a valuable resource and accordingly merit special consideration under Statewide Planning Goal #17. Coos County shall permit subdivisions and partitions within the "Coastal Shorelands Boundary" of the ocean, coastal lakes or minor estuaries in rural areas only upon finding by the governing body:
 - i. That such land divisions will not conflict with agriculture and forest policies and ordinance provisions of the Coos County Comprehensive Plan and would be compatible with the objectives of Statewide Planning Goal #17 to protect riparian vegetation and wildlife and either;
 - ii. That the new land divisions fulfill a need that cannot otherwise be accommodated in other uplands or in urban and urbanizable areas;
 - iii. That the new land divisions are in a documented area, "committed" area; or
 - iv. That the new land divisions have been justified through a goal exception.

RESPONSE: These provisions represent aspirational policy objectives rather than implementing criteria applicable to discretionary permit applications. Further, none of the IND Zone Proposals involve a land division. Therefore, these criteria do not apply to the IND Zone Proposals.

- c. **Coastal Lakes and Minor Estuary Coastal Shorelands:** Coos County shall consider the following general priorities for the overall use of ocean, coastal lake or minor estuary coastal shorelands (from highest to lowest):

- i. promote uses, which maintain the integrity of estuaries and coastal waters;
- ii. provide for water-dependent uses;
- iii. provide for water-related uses;
- iv. provide for nondependent, nonrelated uses, which retain flexibility of future use and do not prematurely or inalterably commit shorelands to more intensive uses;
- v. provide for development, including nondependent, nonrelated uses, in urban areas compatible with existing or committed uses;
- vi. permit nondependent, nonrelated uses, which cause a permanent or long-term change in the features of coastal shorelands only upon a demonstration of public need.

In addition, priority uses for flood hazard and floodplain areas shall include agriculture, forestry, recreation and open space uses, which are water-dependent. This strategy shall serve as a guide when evaluating discretionary zoning and land development actions. This strategy recognizes Statewide Planning Goal #17 requirements.

RESPONSE: This section does not constitute approval criteria that apply to the IND Zone Proposals.

- d. **Non-structural solutions for erosion control: Coos County shall prefer non-structural solutions to problems of erosion and flooding to structural solutions in ocean, coastal lake or minor estuary shorelands. Where shown to be necessary, water and erosion control structures, such as jetties, bulkheads, seawalls, and similar protective structures and fill shall be designed to minimize adverse impacts on water currents, erosion, and accretion patterns. Implementation of this strategy shall occur through county review of and comment on state and federal permit applications for such projects. This strategy is based on the recognition that non-structural solutions are often more cost-effective as corrective measures but that carefully designed structural solutions are occasionally necessary.**

RESPONSE: This section does not constitute approval criteria that apply to the IND Zone Proposals.

- e. **Riparian vegetation in Coastal Shoreland Boundary: Maintain, restore or enhancing riparian vegetation as consistent with water dependent uses requires a conditional use. Coos County shall maintain riparian vegetation within the shorelands of the ocean, coastal lakes, and minor estuaries, and when appropriate, restore or enhance it, as consistent with water-dependent uses. Variances to riparian vegetation setback shall not be permitted within the CSB unless it is to allow for a water dependent use as permitted by the**

zoning. If a property owner would like to remove vegetation in the Coastal Shoreland Boundary then a conditional use is required. The Planning Department will request comments from ODFW and DEQ regarding water quality and fish habitat. An applicant may provide reports from a qualified biologist.

Timber harvest, if permitted in the zoning ordinance, shall be regulated by the Oregon Forest Practices Act. Where the County's Comprehensive Plan identifies riparian vegetation on lands in the coastal shorelands subject to forest operations governed by the FPA, the Act and Forest Practices Rules administered by the Department of Forestry will be used in such a manner as to maintain, and where appropriate, restore and enhance riparian vegetation. This strategy shall be implemented by County review of and comment on state permit applications for waterfront development.

This strategy is based on the recognition that prohibiting excessive removal of vegetative cover is necessary to stabilize the shoreline and, for coastal lakes and minor estuaries, to maintain water quality and temperature necessary for the maintenance of fish habitat.

RESPONSE: None of the IND Zone Proposals is near a riparian area, will affect riparian vegetation, or will involve timber harvest. Therefore, this criterion does not apply to the IND Zone Proposals.

CCZLDO 4.11.125.6 - Significant Wildlife Habitat (Balance of County Policy 5.6)

Uses and activities deemed compatible with the objective of providing adequate protection for all identified Statewide Planning Goal 5 resources are all uses and activities allowed, or conditionally allowed by the Zoning and Land Development Ordinance, except that special care must be taken when developing property adjacent to salmonid spawning and rearing areas so as to avoid to the greatest practical extent the unnecessary destruction of riparian vegetation that may exist along stream banks. The Oregon Forest Practices Act is deemed adequate protection against adverse impacts from timber management practices.

- a. **5c Bird Sites protection shall be implemented by:**
 - i. **County reliance upon the Oregon Department of Forestry and Oregon Department of fish and Wildlife insuring adequate protection of "5c" bird sites from possible adverse impacts of timber management practices thru the Forest Practices Act;**
 - ii. **Use of the Fish and Wildlife Plan Maps and detailed inventories above to identify "5c" bird sites subject to special protection;**
 - iii. **For "5c" bird site protection, stipulating in the Zoning and Land Development Ordinance that conflicting uses shall be reviewed by the Oregon Department of Fish and Wildlife to determine that any proposed use**

is not expected to produce significant and unacceptable environmental impacts on any of the "5c" bird sites; and

- iv. Stipulating on County Zoning Clearance Letters that establishment of conflicting uses adjacent to "5c" bird sites shall be permitted only pursuant to the provisions of this policy.
- v. Coos County shall require a location map for any development activity with the exception of grazing within its regulatory scope that is determined to be within a "5c" bird habitat. The location map shall be referred to the Oregon Department of Fish and Wildlife requesting an opinion within 10 days as to whether the development is likely to produce significant and unacceptable impacts upon the "5c" resource, and what safeguards it would recommend to protect the resource. If ODFW's determinations the development will impact the "5c" bird habitat a conditional use will be required by the applicant. ODFW's and the applicants findings will be reviewed based upon sound principles of conservation and appropriate balancing of the ESEE consequences so if conflicting uses are allowed the resource site is protected to some extent. The ACU will be processed pursuant to Article 5.0. If ODFW's determination does not show any impacts then a zoning compliance letter may be issued if the use is permitted or has completed a conditional use process.

RESPONSE: None of the IND Zone Proposals are within a significant bird resting, feeding or nesting habitat that County maps identify. Therefore, these criteria do not apply to the IND Zone Proposals.

- b. **5b Bird Sites protection shall consider the following to be "5b" resources, pursuant to the inventory information available in this Plan and OAR 660-16-000(5)(b):**
 - Osprey Nesting Sites
 - Snowy Plover Habitat (outside the CREMP)
 - Spotted Owl Nesting Sites

This policy recognizes the requirements of OAR 660-16. Coos County's Planning Staff is unable to perform ground verification; therefore, the County relies on ODFW for the applicable information.

Coos County shall require a location map for any development activity with the exception of grazing within its regulatory scope that is determined to be within a "5b" bird habitat. The location map shall be referred to the Oregon Department of Fish and Wildlife requesting an opinion as to whether the development is likely to produce significant and unacceptable impacts upon the "5b" resource. Oregon Department of Fish and Wildlife staff shall respond prior to any development.

RESPONSE: None of the IND Zone Proposals is within a significant bird resting, feeding or nesting habitat or a Snowy Plover habitat that County maps identify. Therefore, these criteria do not apply to the IND Zone Proposals.

c. BIG GAME RESOURCES AND HABITAT

Roosevelt elk, black-tailed deer, black bear and cougar are the big game species found in Coos County. Their estimated populations are given below:

Estimated big game population in Coos County, 19766. Species Estimated Population:

- **Roosevelt Elk 4,953**
- **Black-tailed Deer 10,632**
- **Black Bear 1,066**
- **Cougar 43**

The sensitive areas are entirely on the forestlands in the County, and there is no development in these areas. Peripheral areas have value as deer and elk habitat, but the wildlife value of these areas is reduced because of the density of existing development. The habitat value of impacted areas is limited or non-existent for big game because the density of development is too great. ODFW has recommended that residential development be kept to a general minimum of one dwelling per 80 acres in areas identified as sensitive big game range. ODFW intends that these recommended minimum densities be applied over a broad area. A location map shall be provided to the Oregon Department of Fish and Wildlife requesting an opinion within 10 days as to whether the development is likely to produce significant and unacceptable impacts to the resource, and what safeguards it would recommend to protect the resource. This does not require a conditional use.

RESPONSE: This criterion does not apply to IND Zone Proposals. The above explains that “the sensitive areas are entirely on forestlands in the County.” All of the IND Zone Proposals are located in the County’s IND zone.

CCZLDO 4.11.125.7 - Natural Hazards (Balance of County Policy 5.11)

The Natural Hazards map has inventoried the following hazards:

- **Flood Hazard**
 - **Riverine flooding**
 - **Coastal flooding**
- **Landslides**

- **Earthquakes**
 - **Liquefaction potential**
 - **Fault lines**
- **Tsunamis**
- **Erosion**
 - **Riverine streambank erosion**
 - **Coastal**
 - **Shoreline and headlands**
 - **Wind**
- **Wildfire**
 - **High wildfire hazard**
 - **Gorse fire**

Purpose Statements:

Coos County shall regulate development in known areas potentially subject to natural disasters and hazards, so as to minimize possible risks to life and property. Coos County considers natural disasters and hazards to include river and coastal flooding, landslides, liquefaction potential due to earthquakes, fault lines, tsunamis, river bank erosion, coastal erosion along shorelines and headlands, coastal erosion due to wind, and wildfires, including those areas affected by gorse.

This strategy shall be implemented by enacting special protective measures through zoning and other implementing devices, designed to minimize risks to life and property associated with new development. The determination of whether a property is located in one of the above referenced potentially hazardous areas shall be made by the reviewing body (Planning Director, Planning Commission, Board of Commissioners, or any designee based upon adopted inventory mapping). A specific site may not include the characteristics for which it is mapped. In these circumstances staff shall apply § 5.11.100.2.c.

Hazard review shall not be considered applicable to any application that has received approval and requesting an extension to that approval or any application that was deemed completed as of the date this ordinance effective (July 31, 2017). If a land use authorization has expired the applicant will be required to address any applicable hazards.

- a. **Flooding: Coos County shall promote protection of valued property from risks associated with river and coastal flooding along waterways in the County through**

the establishment of a floodplain overlay zone (/FP). See Sections 4.11.211-257 for the requirements of this overlay zone.

RESPONSE: This Application narrative responds to floodplain-overlay-related approval criteria in the section below regarding the floodplain overlay zone.

- b. Landslides: Areas subject to landslides (mass movement) include active landslides, inactive landslides, earth flow and slump topography, and rockfall and debris flow terrain as identified on the 2015 Coos County Comprehensive Plan Hazards Map (mapped as the very high-existing landslides). Coos County shall permit the construction of new structures in an inventoried Landslide hazard area (earth flow/slump topography/rock fall/debris flow) through a conditional use process subject to a geological assessment review as set out in Article 5.11.**

RESPONSE: None of the IND Zone Proposals crosses any area that the County's Natural Hazards Map designates as "Very High - Existing Landslide." Therefore, this criterion does not apply to the IND Zone Proposals.

- c. Tsunamis: Coos County shall promote increased resilience to a potentially catastrophic Cascadia Subduction Zone (CSZ) tsunami through the establishment of a Tsunami Hazard Overlay Zone (THO) in the Balance of County Zoning. See Sections 4.11.260-4.11.270 for the requirements of this overlay zone.**

RESPONSE: This Application narrative responds to tsunami-overlay-related approval criteria in the section below regarding the floodplain overlay zone.

- d. Earthquakes: Areas subject to earthquakes include fault lines and liquefaction potential, as identified on the 2015 Coos County Comprehensive Plan Natural Hazards Map. Coos County shall permit the construction of new structures in known areas potentially subject to earthquakes (fault line and liquefaction potential) through a conditional use process subject to a geologic assessment review as set out in Article 5.11. Coos County shall support Oregon State Building Codes to enforce any structural requirements related to earthquakes. Staff will notify Oregon State Building Codes by providing a copy of the geologic assessment report at the time of review.**

RESPONSE: None of the IND Zone Proposals crosses any area that the County's Natural Hazards Map identifies as an area subject to earthquakes. Therefore, this criterion does not apply to the IND Zone Proposals.

- e. Erosion: Coos County shall promote protection of property from risks associated with shoreline, headland, and wind erosion/deposition erosion hazards. Coos County shall promote protection of property from risks associated with bank erosion along rivers and streams through necessary erosion-control and stabilization measures, preferring non-structural solutions when practical.**

Any proposed structural development within a wind erosion/deposition area, within 100 feet of a designated bank erosion area, or on a parcel subject to wave attack,

including all oceanfront lots, will be subject to a geologic assessment review as set out in Article 5.11.

RESPONSE: None of the IND Zone Proposals are within a wind erosion/deposition area or within 100 feet of a designated bank erosion area, or on a parcel subject to wave attack. Therefore, this criterion does not apply to the IND Zone Proposals.

- f. **Wildfires: Coos County shall promote protection of property from risks associated with wildfires and gorse fires by requiring all new dwellings, permanent structures, and replacement dwellings and structures shall, at a minimum, meet the following standards on every parcel designated or partially designated as at-risk of fire hazard on the 2015 Coos County Comprehensive Plan Natural Hazards Map:**
1. **The dwelling shall be located within a fire protection district or shall be provided with residential fire protection by contract. If the dwelling is not within a fire protection district, the applicant shall provide evidence that the applicant has asked to be included within the nearest such district or is provided fire protection by contract.**
 2. **When it is determined that these standards are impractical the Planning Director may authorize alternative forms of fire protection that shall comply with the following:**
 - a. **The means selected may include a fire sprinkling system, onsite equipment and water storage or other methods that are reasonable, given the site conditions, as established by credible documentation approved in writing by the Director;**
 - b. **If a water supply is required for fire protection, it shall be a swimming pool, pond, lake, or similar body of water that at all times contains at least 4,000 gallons per dwelling or a stream that has a continuous year round flow of at least one cubic foot per second per dwelling;**
 - c. **The applicant shall provide verification from the Water Resources Department that any permits or registrations required for water diversion or storage have been obtained or that permits or registrations are not required for the use; and**
 - d. **Road access shall be provided to within 15 feet of the water's edge for firefighting pumping units. The road access shall accommodate the turnaround of firefighting equipment during fire season. Permanent signs shall be posted along the access route to indicate the location of the emergency water source.**
 3. **Fire Siting Standards for New Dwellings:**

- a. **The property owner shall provide and maintain a water supply of at least 500 gallons with an operating water pressure of at least 50 PSI and sufficient $\frac{3}{4}$ inch garden hose to reach the perimeter of the primary fuel-free building setback.**
- b. **If another water supply (such as a swimming pool, pond, stream, or lake) is nearby, available, and suitable for fire protection, then road access to within 15 feet of the water's edge shall be provided for pumping units. The road access shall accommodate the turnaround of firefighting equipment during the fire season. Permanent signs shall be posted along the access route to indicate the location of the emergency water source.**

4. Firebreak:

- a. **A firebreak shall be established and maintained around all structures, including decks, for a distance of at least 30 feet in all directions.**
- b. **This firebreak will be a primary safety zone around all structures. Vegetation within this primary safety zone may include mowed grasses, low shrubs (less than ground floor window height), and trees that are spaced with more than 15 feet between the crowns and pruned to remove dead and low (less than 8 feet from the ground) branches. Accumulated needles, limbs and other dead vegetation should be removed from beneath trees.**
- c. **Sufficient garden hose to reach the perimeter of the primary safety zone shall be available at all times.**
- d. **The owners of the dwelling shall maintain a primary fuel-free break area surrounding all structures and clear and maintain a secondary fuel-free break on land surrounding all structures that is owned or controlled by the owner in accordance with the provisions in "Recommended Fire Siting Standards for Dwellings and Structures and Fire Safety Design Standards for Roads" dated March 1, 1991, and published by Oregon Department of Forestry and shall demonstrate compliance with Table 1.**
 - a. **All new and replacement structures shall use non-combustible or fire-resistant roofing materials, as may be approved by the certified official responsible for the building permit.**
 - b. **If a water supply exceeding 4,000 gallons is suitable and available (within 100 feet of the driveway or road) for fire suppression, then road access and turning space shall be provided for fire protection pumping units to the source during fire season. This includes water supplies such as a swimming pool, tank or natural water supply (e.g. pond).**

- c. The structure shall not be sited on a slope of greater than 40 percent.
- d. If the structure has a chimney or chimneys, each chimney shall have a spark arrester.
- e. Except for private roads and bridges accessing only commercial forest uses, public roads, bridges, private roads, and driveways shall be constructed so as to provide adequate access for firefighting equipment. Confirmation shall be provided from the Coos County Road Department or local fire protection district that these standards have been met.

- 5. Wildfires inside urban growth boundaries. Certain areas inside urban growth boundaries may present special risks and may be made subject to additional or different standards and requirements jointly adopted by a city and the county in the form of code requirements, master plans, annexation plans, or other means.

RESPONSE: These criteria do not apply to the IND Zone Proposals, none of which are located on a parcel designated or partially designated as at-risk of fire hazard on the 2015 Coos County Comprehensive Plan Natural Hazards Map.

CCZLDO 4.11.200 - Overlay Zones

Floodplain Overlay

CCZLDO 4.11.231 - Lands to Which This Overlay Applies

This Ordinance shall apply to all areas of special flood hazards within the jurisdiction of Coos County that have been identified on the Flood Insurance Maps dated March 17, 2014 as described in Section 4.11.232.

RESPONSE: CCZLDO 4.11.220.3 explains that “area of special flood hazard” means “the land in the flood plain within a community subject to a 1 percent or greater chance of flooding in any given year.” Therefore, land within the 100-year floodplain is by definition within an “area of special flood hazard.” The County’s natural hazard map appears to identify all floodplain within the County as a 100-year floodplain. However, JCEP believes this mapping feature is in error. Since the same mapping also identifies much of the same area with the “X” designation, which is a FEMA designation for 500-year floodplain. All the IND Zone Proposals are within the “X” zone. Based upon the above interpretation, JCEP requests that the County confirm that the Floodplain Overlay does not apply to the IND Zone Proposals, and that no floodplain development permit is required for these proposals.

Further, several proposals in this Application are subject to CBEMP Policy #27, which subjects proposals in the CBEMP zones to the Floodplain Overlay. Of those proposals, only the pile dike rock apron in the 5-WD zone and the shoreline stabilization in the 5-WD zone is within a 100-

year floodplain (outside the “X” flood zone), and accordingly, only these proposals require a floodplain development permit.

CCZLDO 4.11.235 - Establishment of Development Permit

- 1. Floodplain Application Required** A floodplain application shall be submitted and approved before construction or regulated development begins within any area of special flood hazard established in Section 4.11.232. The permit shall be for all structures including manufactured homes, as set forth in the “DEFINITIONS,” and for all development including fill and other activities, also as set forth in the “DEFINITIONS.”

RESPONSE: Per the above analysis, JCEP concludes that only the pile dike rock apron and shoreline stabilization in the 5-WD zone are subject to the Floodplain Overlay. These proposals are not “structures” but instead qualify as “development” within the meaning of CCZLDO 2.1.200. Therefore, these proposals require floodplain development permits.

- 2. Application**

An application shall be made on the forms furnished by the Planning Department and may include, but not be limited to, plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities, and the location of the foregoing. Specifically, the following information is required:

- a. Elevation in relation to mean sea level, of the lowest floor (including basement) of all structures which may be submitted by a registered surveyor;
- 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 nonresidential structure meet the floodproofing criteria in Section 4.11.252; and
- d. Description of the extent to which a watercourse will be altered or relocated as a result of proposed development.
- e. Plot plan drawn to scale showing the nature, location and dimensions and elevation referenced to mean sea level, or NAVD 88, whichever is applicable, of the area in question including existing and proposed structures, fill, storage of materials, and drainage facilities. Applicants shall submit certification by an Oregon registered professional engineer or land surveyor of the site's ground elevation and whether or not the development is located in a flood hazard area. If so, the certification shall include which flood hazard area applies, the location of the floodway at the site, and the 100 year flood elevation at the site. A reference mark shall be set at the elevation of the 100 year flood at the site. The location, description, and elevation of the reference mark shall be included in the certification; and

- f. **Any other information required to make a determination.**

RESPONSE: The pile dike rock apron and shoreline stabilization are not structures with “floors” or floodproofing. The pile dike rock apron in 5-WD is comprised of riprap, while the shoreline stabilization in this zone is a bulkhead. These developments will not alter a watercourse.

CCZLDO 4.11.251 - General Standards

In all areas of special flood hazards, the following standards are required:

1. Anchoring

- a. **All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure; and**
- b. **All manufactured homes must likewise be anchored to prevent flotation, collapse, or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors (Reference FEMA’s “Manufactured Home Installation in Flood Hazard Areas” guidebook for additional techniques).**

RESPONSE: The pile dike rock apron and shoreline stabilization are not structures or manufactured homes. Therefore, these criteria do not apply.

2. Construction Materials and Methods

- a. **All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;**
- b. **All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage; and**
- c. **Electrical, heating, ventilation, plumbing, and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.**

RESPONSE: The pile dike rock apron and shoreline stabilization are not structures. The definitions of “new construction” and “substantial improvement” are limited to structures. Therefore, these criteria do not apply.

3. Utilities

- a. **All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;**

- b. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters; and
- c. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding consistent with the Oregon Department of Environmental Quality.

RESPONSE: The pile dike rock apron and shoreline stabilization are not developments that incorporate utilities. Thus, these criteria do not apply.

4. Land Divisions Proposals

- a. All land division proposals shall be consistent with the need to minimize flood damage;
- b. All land division proposals that are proposing public utilities and facilities such as sewer, gas, electrical, and water systems shall be required to locate and construct them to minimize or eliminate flood damage;
- c. All land division proposals that consist of three or more lots shall have adequate drainage provided to reduce exposure to flood damage; and
- d. Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals and other proposed developments which contain at least 50 lots or 5 acres (whichever is less).

RESPONSE: The pile dike rock apron and shoreline stabilization do not involve land divisions. Therefore, these criteria do not apply.

5. Review of Applications

Where elevation data is not available either through the Flood Insurance Study, FIRM, or from another authoritative source [Section 4.11.243(2)], applications for structural development shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available. Failure to elevate at least two feet above grade in these zones may result in higher insurance rates.

RESPONSE: JCEP acknowledges this provision, which does not impose approval criteria.

6. AH Zone Drainage

Adequate drainage paths are required around structures on slopes to guide floodwaters around and away from proposed structures.

RESPONSE: The pile dike rock apron and shoreline stabilization are not structures. Therefore, this criterion does not apply.

7. **Other Development.** Includes mining, dredging, filling, grading, paving, excavation or drilling operations located within the area of a special flood hazard, but does not include such uses as normal agricultural operations, fill less than 12 cubic yards, fences, road and driveway maintenance, landscaping, gardening and similar uses which are excluded from definition because it is the County's determination that such uses are not of the type and magnitude to affect potential water surface elevations or increase the level of insurable damages.

Review and authorization of a floodplain application must be obtained from the Coos County Planning Department before "other development" may occur. Such authorization by the Planning Department shall not be issued unless it is established, based on a licensed engineer's certification that the "other development" shall not:

- a. Result in any increase in flood levels during the occurrence of the base flood discharge if the development will occur within a designated floodway; or,
- b. Result in a cumulative increase of more than one foot during the occurrence of the base flood discharge if the development will occur within a designated flood plain outside of a designated floodway.

RESPONSE: The pile dike rock apron and shoreline stabilization are not "other development" within the meaning of this subsection. Therefore, these criteria do not apply.

8. **COMMUNITY OFFICIAL BASE FLOOD ELEVATION DETERMINATION REQUEST AND PROCEDURES:** The Coos County Planning Department shall sign a community official base flood elevation (BFE) confirmation received from a mortgage insurance company if:

- a. The development is located outside of the mapped flood hazard area;
- b. A Letter of Map Revision or Amendment has been approved by FEMA; or
- c. The property has an approved flood hazard determination application that shows the development was built to flood proofing standards or is located above the base flood elevation.

If the development is located within the mapped flood hazard area and there is not a flood hazard determination on file with the Coos County Planning Department a confirmation letter will not be signed until a flood hazard application has been approved as complying with Sections 4.11.211 through 4.11.252.

RESPONSE: These criteria do not apply to the pile dike rock apron and shoreline stabilization , neither of which is outside a mapped flood hazard area, is the subject of a letter of map revision or amendment approved by FEMA, or has an approved flood hazard determination application.

CCZLDO 4.11.252 - Specific Standards

In all areas of special flood hazards where base flood elevation data has been provided (Zones A1-30, AH, and AE) as set forth in Section 4.11.232, BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD or Section 4.11.243(2), Use of Other Base Flood Data (In A and V Zones), the following provisions are required:

1. Residential Construction

- a. New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to a minimum of one foot above the base flood elevation; and**
- b. Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:**
 - i. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided;**
 - ii. The bottom of all openings shall be no higher than one foot above grade; and**
 - iii. Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.**

RESPONSE: Part of the pile dike rock apron is located in an AE flood zone. But these criteria nonetheless do not apply to the pile dike rock apron because it is not “new construction” or a “substantial improvement,” the definitions of both of which are limited to “structures,” and the pile dike rock apron is not a structure within the meaning of CCZLDO 2.1.200. The other shoreline stabilization is not within an AE zone.

2. Nonresidential Construction

New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated at or above the base flood elevation; or, together with attendant utility and sanitary facilities, shall:

- a. Be floodproofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water;**

- b. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;
- c. Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the official as set forth in Section 4.11.243(3)(b);
- d. Nonresidential structures that are elevated, not floodproofed, must meet the same standards for space below the lowest floor as described in 4.11.252(1)(b);
- e. Applicants floodproofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the floodproofed level (e.g. a building floodproofed to the base flood level will be rated as one foot below);
- f. Applicants shall supply a comprehensive Maintenance Plan for the entire structure to include but not limited to: exterior envelope of structure; all penetrations to the exterior of the structure; all shields, gates, barriers, or components designed to provide floodproofing protection to the structure; all seals or gaskets for shields, gates, barriers, or components; and, the location of all shields, gates, barriers, and components as well as all associated hardware, and any materials or specialized tools necessary to seal the structure; and
- g. Applicants shall supply an Emergency Action Plan (EAP) for the installation and sealing of the structure prior to a flooding event that clearly identifies what triggers the EAP and who is responsible for enacting the EAP.

RESPONSE: Part of the pile dike rock apron is located in an AE flood zone. But these criteria nonetheless do not apply to the pile dike rock apron because it is not “new construction” or a “substantial improvement,” the definitions of both of which are limited to “structures,” and the pile dike rock apron is not a structure within the meaning of CCZLDO 2.1.200. The other shoreline stabilization that JCEP is not within an AE zone.

3. Manufactured Dwellings

- a. Manufactured dwellings supported on solid foundation walls shall be constructed with flood openings that comply with Section 4.11.252(1)(b) above;
- b. The bottom of the longitudinal chassis frame beam in A zones, shall be at or above BFE;

- c. The manufactured dwelling shall be anchored to prevent flotation, collapse, and lateral movement during the base flood. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors (Reference FEMA's "Manufactured Home Installation in Flood Hazard Areas" guidebook for additional techniques); and
- d. Electrical crossover connections shall be a minimum of 12 inches above BFE.

RESPONSE: Part of the pile dike rock apron is located in an AE flood zone. But these criteria nonetheless do not apply to the pile dike rock apron because it is not a manufactured dwelling. The other shoreline stabilization is not within an AE zone.

4. Recreational Vehicles

Recreational vehicles placed on sites are required to:

- a. Be on the site for fewer than 180 consecutive days; and
- b. Be fully licensed and ready for highway use, on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or
- c. Meet the requirements of Section 4.11.252(3) above and the elevation and anchoring requirements for manufactured homes.

RESPONSE: Part of the pile dike rock apron is located in an AE flood zone. But these criteria nonetheless do not apply to the pile dike rock apron because it is not and does not involve recreational vehicles. The other shoreline stabilization is not within an AE zone.

5. Small Accessory Structures

Relief from elevation or floodproofing as required in Section 4.11.252(1) or 4.11.252(2) above may be granted for small accessory structures that are:

- a. Less than 200 square feet and do not exceed one story;
- b. Not temperature controlled;
- c. Not used for human habitation and are used solely for parking of vehicles or storage of items having low damage potential when submerged;
- d. Not used to store toxic material, oil or gasoline, or any priority persistent pollutant identified by the Oregon Department of Environmental Quality shall unless confined in a tank, that is installed in compliance with this ordinance or stored at least one foot above Base Flood Elevation;
- e. Located and constructed to have low damage potential;
- f. Constructed with materials resistant to flood damage;

- g. Anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the base flood;
- h. Constructed to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater. Designs for complying with this requirement must be certified by a licensed professional engineer or architect or:
 - i. provide a minimum of two openings with a total net area of not less than one square inch for every square foot of enclosed area subject to flooding;
 - ii. the bottom of all openings shall be no higher than one foot above the higher of the exterior or interior grade or floor immediately below the opening;
 - iii. openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwater in both directions without manual intervention; and
- i. Constructed with electrical and other service facilities located and installed so as to prevent water from entering or accumulating within the components during conditions of the base flood.

RESPONSE: Part of the pile dike rock apron is located in an AE flood zone. But these criteria nonetheless do not apply to the pile dike rock apron because it does not require relief from the floodproofing standards of CCZLDO 4.11.252(1) or 4.11.252(2). The other shoreline stabilization is not within an AE zone.

6. Below-Grade Crawlspace

Below-grade crawlspaces are allowed subject to the following standards as found in FEMA Technical Bulletin 11-01, Crawlspace Construction for Buildings Located in Special Flood Hazard Areas:

- a. The building must be designed and adequately anchored to resist flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy. Hydrostatic loads and the effects of buoyancy can usually be addressed through the required openings stated in Section B below. Because of hydrodynamic loads, crawlspace construction is not allowed in areas with flood velocities greater than five (5) feet per second unless the design is reviewed by a qualified design professional, such as a registered architect or professional engineer. Other types of foundations are recommended for these areas;
- b. The crawlspace is an enclosed area below the base flood elevation (BFE) and, as such, must have openings that equalize hydrostatic pressures by allowing

the automatic entry and exit of floodwaters. The bottom of each flood vent opening can be no more than one (1) foot above the lowest adjacent exterior grade;

- c. Portions of the building below the BFE must be constructed with materials resistant to flood damage. This includes not only the foundation walls of the crawlspace used to elevate the building, but also any joists, insulation, or other materials that extend below the BFE. The recommended construction practice is to elevate the bottom of joists and all insulation above BFE;
- d. Any building utility systems within the crawlspace must be elevated above BFE or designed so that floodwaters cannot enter or accumulate within the system components during flood conditions. Ductwork, in particular, must either be placed above the BFE or sealed from floodwaters;
- e. The interior grade of a crawlspace below the BFE must not be more than two (2) feet below the lowest adjacent exterior grade;
- f. The height of the below-grade crawlspace, measured from the interior grade of the crawlspace to the top of the crawlspace foundation wall must not exceed four (4) feet at any point. The height limitation is the maximum allowable unsupported wall height according to the engineering analyses and building code requirements for flood hazard areas;
- g. There must be an adequate drainage system that removes floodwaters from the interior area of the crawlspace. The enclosed area should be drained within a reasonable time after a flood event. The type of drainage system will vary because of the site gradient and other drainage characteristics, such as soil types. Possible options include natural drainage through porous, well-drained soils and drainage systems such as perforated pipes, drainage tiles or gravel or crushed stone drainage by gravity or mechanical means; and
- h. The velocity of floodwaters at the site should not exceed five (5) feet per second for any crawlspace. For velocities in excess of five (5) feet per second, other foundation types should be used.

For more detailed information refer to FEMA Technical Bulletin 11-01.

RESPONSE: Part of the pile dike rock apron is located in an AE flood zone. But these criteria nonetheless do not apply to the pile dike rock apron because it does not involve below grade crawlspaces. The other shoreline stabilization is not within an AE zone.

CCZLDO 4.11.253 - Before Regulatory Floodway

In areas where a regulatory floodway has not been designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and

anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

RESPONSE: Part of the pile dike rock apron is within an AE flood zone. A technical memorandum addressing flood risks associated with these proposed uses within the Floodplain Overlay and compliance with applicable criteria in this Section has been prepared by SHN Consultants. This memorandum dated July 19, 2019 is attached as Exhibit 11. Specially, the SHN analysis confirms that the minimal fill associated with the proposed pile dike rock apron and shoreline stabilization “. . . will have no measurable effect on the estuary nor will it affect flooding within the estuary,” which confirms compliance with the applicable Overlay zone criteria.

CCZLDO 4.11.254 - Floodway

Located within areas of special flood hazard established in Section 4.11.232 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

RESPONSE: The floodway provisions do not apply to the proposed development.

CCZLDO 4.11.255 - Standards for Shallow Flooding Areas (AO Zones)

Shallow flooding areas appear on FIRMs as AO zones with depth designations. The base flood depths in these zones range from 1 to 3 feet above ground where a clearly defined channel does not exist, or where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is usually characterized as sheet flow. In these areas, the following provisions apply:

RESPONSE: The shallow flooding area provisions of CCZLDO 4.11.255 do not apply to the pile dike rock apron or shoreline stabilization because they are not within a shallow flooding area.

CCZLDO 4.11.256 - Coastal High Hazard Areas

Located within areas of special flood hazard established in Section 4.11.232 are Coastal High Hazard Areas, designated as Zones V1-V30, VE, and/or V. These areas have special flood hazards associated with high velocity waters from surges and, therefore, in addition to meeting all provisions in this ordinance and state building code, the following provisions shall also apply:

RESPONSE: The coastal high hazard area provisions of CCZLDO 4.11.256 do not apply to the pile dike rock apron or shoreline stabilization because they are not within a Coastal High Hazard Area.

CCZLDO 4.11.257 - Critical Facility

Construction of new critical facilities shall be, to the extent practicable, located outside the limits of the Special Flood Hazard Area (SFHA) (100-year floodplain). Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available, taking into account cost and practicability. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet above BFE or to the height of the 500-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities to the extent possible.

RESPONSE: The pile dike rock apron and shoreline stabilization are not “critical facilities.” As defined in CCZLDO 4.11.220, this criterion does not apply.

Tsunami Hazard Overlay Zone

CCZLDO 4.11.270 - Tsunami Hazard Overlay Zone (Purpose, Applicability and Uses)

1. Purpose

The purpose of the Tsunami Hazard Overlay Zone is to increase the resilience of the community to a local source (Cascadia Subduction Zone) tsunami by establishing standards, requirements, incentives, and other measures to be applied in the review and authorization of land use and development activities in are as subject to tsunami hazards. The standards established by this section are intended to limit, direct and encourage the development of land uses within are as subject to tsunami hazards in a manner that will:

- a. Reduce loss of life;
- b. Reduce damage to private and public property;
- c. Reduce social, emotional, and economic disruptions; and
- d. Increase the ability of the community to respond and recover.

Significant public and private investment has been made in development in areas which are now known to be subject to tsunami hazards. It is not the intent or purpose of this section to require the relocation of or otherwise regulate existing development within the Tsunami Hazard Overlay Zone. However, it is the intent of this section to control, direct and encourage new development and redevelopment such that, over time, the community’s exposure to tsunamis will be reduced.

RESPONSE: JCEP acknowledges this provision as a policy statement but notes that it does not impose approval criteria applicable to the Application.

2. Applicability of Tsunami Hazard Overlay Zone

The Tsunami Inundation Zone is applicable to all Balance of County Zoning Districts and any zoning districts located within the Coos Bay Estuary and Coquille Estuary Management Plans when the Estuary Policies directly reference this section. Tsunami Inundation Map(s) (TIM) published by the Oregon Department of Geology and Mineral Industries (DOGAMI) are subject to the requirements of this section:

- a. Except as provided in subsection (b), all lands identified as subject to inundation from the XXL magnitude local source tsunami event as set forth on the applicable Tsunami Inundation Map(s) (TIM) published by the Oregon Department of Geology and Mineral Industries (DOGAMI) are subject to the requirements of this section.**
- b. Lands within the area subject to inundation from the XXL magnitude local source tsunami event as set forth on the applicable Tsunami Inundation Map(s) (TIM) published by the Oregon Department of Geology and Mineral Industries (DOGAMI) that have a grade elevation, established by fill or other means, higher than the projected elevation of the XXL magnitude local source tsunami event are exempt from the requirements of this section. Grade elevations shall be established by an elevation survey performed by a Professional Land Surveyor licensed in Oregon.**

RESPONSE: All the IND Zone Proposals are, according to the County's Natural Hazard's Map, subject to inundation from an XXL magnitude local source tsunami event. None of the IND Zone Proposals have a grade elevation higher than the projected elevation of the XXL magnitude local source tsunami event. Therefore, the IND Zone Proposals are subject to the requirements of the Tsunami Hazard Overlay Zone.

3. Uses

In the Tsunami Hazards Overlay Zone, except for the prohibited uses set forth in subsection 5 all uses permitted pursuant to the provisions of the underlying zone map be permitted, subject to the additional requirements and limitations of this section.

RESPONSE: JCEP acknowledges this provision.

4. Prohibited Uses

Unless authorized in accordance with subsection 6, the following uses are prohibited in the specified portions of the Tsunami Hazard Overlay Zone:

- a. In areas identified as subject to inundation from the L magnitude local source tsunami events set forth on the TIM, the following uses are prohibited:**
 - i. Hospitals and other medical facilities having surgery and emergency treatments area as;**
 - ii. Fire and police stations;**

- iii. **Hospital and other medical facilities having surgery and emergency treatment areas;**
- iv. **Fire and police stations;**
- v. **Structures and equipment in government communication centers and other facilities required for emergency response;**
- vi. **Building with a capacity greater than 250 individuals for every public, private or parochial school through secondary level or childcare centers;**
- vii. **Buildings for colleges or adult education schools with a capacity of greater than 500 persons; and**
- viii. **Jails and detention facilities**

RESPONSE: Among the IND Zone Proposals, only the SORSC and helipad are subject to the above, because they are “facilities required for emergency response” and are within an area subject to inundation from an L magnitude local source tsunami event. Therefore, the SORSC and helipad are permissible only if they satisfy the criteria of subsection 5 below (although the CCZLDO says subsection 6, that appears to be a typo--it is subsection 5 that governs permitting of the above structures).

- b. **In areas identified as subject to inundation from the M magnitude local source tsunami event as set forth on the Tsunami Inundation Map (TIM), the following uses are prohibited:**
 - i. **Tanks or other structures containing, housing or supporting water or fire suppression materials or equipment required for the protection of essential or hazardous facilities or special occupancy structures;**
 - ii. **Emergency vehicle shelters and garages;**
 - iii. **Structures and equipment in emergency preparedness centers;**
 - iv. **Standby power generating equipment for essential facilities;**
 - v. **Covered structures whose primary occupancy is public assembly with a capacity of greater than 300 persons;**
 - vi. **Medical facilities with 50 or more resident, in capacitated patients;**
 - vii. **Manufactured home parks, of a density exceeding 10 units per acre; and**
 - viii. **Hotels or motels with more than 50 units.**

RESPONSE: Among the IND Zone Proposals, only the SORSC is subject to the above because it is a “structure ... in [an] emergency preparedness center” and is within an area subject to inundation from an M magnitude local source tsunami event. Therefore, the SORSC is permissible in the location to construct it only if it satisfies the criteria of subsection 5 below (although the CCZLDO says subsection 6, that appears to be a typo--it is subsection 5 that governs permitting of the above structures).

- c. **Notwithstanding the provisions of Article 5.6 of the Coos County Zoning and Land Development Ordinance, the requirements of this subsection shall not have the effect of rendering any lawfully established use or structure nonconforming. The Tsunami Hazard Overlay is, in general, not intended to apply to or regulate existing uses or development.**

RESPONSE: JCEP acknowledges this provision.

5. Use Exceptions

A use listed in subsection (4) of this section maybe permitted upon authorization of a Use Exception in accordance with the following requirements:

- a. **Public schools may be permitted upon findings that there is a need for the school to be within the boundaries of a school district and fulfilling that need cannot otherwise be accomplished.**

RESPONSE: The SORSC and helipad are not public schools. Therefore, this criterion does not apply to the SORSC and helipad.

- b. **Fire or police stations may be permitted upon findings that there is a need for a strategic location.**

RESPONSE: The SORSC and helipad are not fire or police stations. Therefore, this criterion does not apply to the SORSC and helipad.

- c. **Other uses prohibited by subsection (4) of this section may be permitted upon the following findings:**

RESPONSE: The SORSC and helipad are not the uses listed in subsections 5.a and 5.b. above. Therefore, it must satisfy the following criteria.

- i. **There are no reasonable, lower-risk alternative sites available for the proposed use;**

RESPONSE: These facilities must be located in immediate proximity to the proposed terminal operation for effective emergency response, and these locational criteria is particularly reluctant given the significant distance to establish emergency service providers in the cities of Coos Bay and North Bend. Given this location priority, there are no reasonable, lower-risk alternative sites available for the SORSC and helipad serving the specific terminal other than the proposed on-site locations.

- ii. **Adequate evacuation measures will be provided such that life safety risk to building occupants is minimized;**

RESPONSE: JCEP will provide adequate evacuation measures at the SORSC that it proposes such that life safety risk to the occupants of the building is minimized. The helipad is not a building.

- iii. **The buildings will be designed and constructed in accordance with the Oregon Structural Code to minimize the risk of structural failure during the design earthquake and tsunami event; and**

RESPONSE: Final occupancy of the SORSC will occur only upon issuance of construction permits in accordance with the Oregon Structural Code. The helipad is not a structure, but mandatory compliance with the Structural Code will be achieved as applicable.

- iv. **Developers of new essential facilities, hazardous facilities and major structures described in subsection (1)(a)(E), (b) and (c) of ORS 455.447 and new special occupancy structures described in subsection (1)(e)(A), (D) and (F) of ORS 455.447 that are located in an identified tsunami inundation zone shall consult with the State Department of Geology and Mineral Industries 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. Consultation shall take place prior to submittal of design plans to the building official for final approval. The process for construction of certain facilities and structures in tsunami inundation zones including establishment of zones, rules and exceptions are set out in ORS 455.446. The provision of ORS 455.446 does not apply to water-dependent and water-related facilities, including but not limited to docks, wharves, piers and marinas. Decisions made under ORS 455.446 are not land use decisions. Applications, reviews, decisions and appeals for Use Exceptions authorized by this subsection with the exclusion of subsections iii and iv shall be in accordance with the requirements for an administrative conditional use procedure as set forth in Article 5.2 – Conditional Uses.**

RESPONSE: The SORSC and helipad are “essential facilities” in accordance with ORS 455.447(1)(a)(G), which defines the same to include “facilities required for emergency response.” The SORSC and helipad are such facilities because the SORSC is an emergency preparedness center and the helipad is an accessory to it that serves its purpose. Moreover, the SORSC and helipad are located in an identified tsunami inundation zone. Therefore, this criterion applies to the SORSC and helipad. Accordingly, JCEP has consulted with the Department of Geology and Mineral Industries for assistance in preparing methods to mitigate risk at the site of a potential tsunami. JCEP acknowledges this requirement and will comply. Evidence of such consultation will be provided upon request.

7. Flexible Development Option

- a. The purpose of the Flexible Development Option is to provide incentives for, and to encourage and promote, site planning and development within the Tsunami Hazard Overlay Zone that results in lower risk exposure to tsunami hazard than would otherwise be achieved through the conventional application of the requirements of this chapter. The Flexible Development Option is intended to:**

 - i. Allow for and encourage development designs that incorporate enhanced evacuation measures, appropriate building siting and design, and other features that reduce the risks to life and property from tsunami hazard; and**
 - ii. Permit greater flexibility in the siting of buildings and other physical improvements and in the creation of new lots and parcels in order to allow the full realization of permitted development while reducing risks to life and property from tsunami hazard.**
- b. The Flexible Development Option may be applied to the development of any lot, parcel, or tract of land that is wholly or partially within the Tsunami Hazard Overlay Zone.**
- c. The Flexible Development Option may include any uses permitted outright or conditionally in any zone, except for those uses prohibited pursuant to subsection 5 of this section.**
- d. Overall residential density shall be as set forth in the underlying one or zones. Density shall be computed based on total gross land area of the subject property, excluding street right of-way.**
- e. Yards, setbacks, lot area, lot width and depth, lot coverage, building height and similar dimensional requirements may be reduced, adjusted or otherwise modified as necessary to achieve the design objectives of the development and fulfill the purposes of this section.**
- f. Applications, review, decisions, and appeals for the Flexible Development Option shall be in accordance with the requirements for an administrative conditional use procedure as set forth in Article 5 of the Coos County Zoning and Land Development Ordinance.**
- g. Approval of an application for a Flexible Development Option shall be based on findings that the following criteria are satisfied:**

 - i. The applicable requirements of sub-paragraphs and of this subsection are met; and**
 - ii. The development will provide tsunami hazard mitigation and/ or other risk reduction measures at a level greater than would otherwise**

be provided under conventional land development procedures. Such measures may include, but are not limited to:

1. Providing evacuation measures, improvements, evacuation way finding techniques and signage;
2. Providing tsunami evacuation structure(s) which are accessible and provide capacity for evacuees from off-site;
3. Incorporating building designs or techniques which exceed minimum structural specialty code requirements in a manner that increases the capacity of structures to withstand the forces of a local source tsunami; and
4. Concentrating or clustering development in lower risk portions or areas of the subject property, and limiting or avoiding development in higher risk areas.

RESPONSE: This Application does not include an application for approval of a Flexible Development Option. Therefore, these criteria and this section does not apply to the IND Zone Proposals.

E. Approval Criteria in Estuary Zones - CBEMP Policies

CBEMP Policy #5a: Temporary Alterations

- I. Local government shall support as consistent with this Plan: (a) temporary alteration to the estuary, in Natural and Conservation Management Units provided it is consistent with the resource capabilities of the management units. Management unit in Development Management Units temporary alterations, which are defined in the definition section of the Plan are allowed provided they are consistent with purpose of the Development Management Unit. (b) alterations necessary for federally authorized Corps of Engineers projects, such as access to dredge material disposal sites by barge or pipeline or staging areas, or dredging for jetty maintenance.

RESPONSE: The temporary dredge line in the 13B-NA, and 14-DA zones are subject to Policy #5a.

The temporary dredge line in the 13B-NA, and 14-DA zones comply with Paragraph I Policy #5a because it is consistent with the resource capabilities of the management units, as further described below. In the 14-DA zone, which is a development management unit, the temporary dredge line satisfies the management objective of the zone, as described above, and thus the temporary dredge line in the 14-DA zone is consistent with the purpose of the 14-DA zone.

- II. Further, the actions specified above shall only be allowed provided that:

- a. **The temporary alteration is consistent with the resource capabilities of the area (see Policy #4); and**

RESPONSE: This subsection requires a showing that the temporary dredge line in the 13B-NA and 14-DA zones is consistent with the resource capabilities of the areas in which it is located, in accordance with Policy #4. Policy #4 explains that “all proposed actions (approved in this Plan), which would alter or potentially alter, the integrity of the estuarine ecosystem have been based upon a full consideration of the impacts of the proposed alteration and a demonstration of the public’s need and gain, which warrant such modification or loss,” except for certain enumerated activities.

Therefore, Policy #4 explains that, with the exception of the uses specifically listed, the County has completed resource capability findings for all uses and activities allowed in the respective County zones. The temporary dredge line is not among the uses and activities that Policy #4 lists as an exception to this rule. Accordingly, identification of the temporary dredge line in the subject zone as an allowed activity constitutes a determination of compliance with the resource capabilities standard, which, in turn, supports the conclusion that the temporary dredge line is consistent with the resource capabilities of the areas in which it is located.

- b. **Findings satisfying the impact minimization criterion of Policy #5 are made for actions involving dredge, fill or other significant temporary reduction or degradation of estuarine values; and**

RESPONSE: The temporary dredge line, which consists of a contained pipe utilized solely for the transmission of material resulting from authorized dredging, in the 13B-NA and 14-DA zones does not involve dredge, fill, or other significant temporary reduction or degradation of estuarine values.

- c. **The affected area is restored to its previous condition by removal of the fill or other structures, or by filling of dredged areas (passive restoration may be used for dredged areas, if this is shown to be effective); and**

RESPONSE: The temporary dredge line in the 13B-NA, and 14-DA zones does not involve fill or structures. JCEP will remove the dredge lines when JCEP no longer has a need to transport dredge spoils from dredging in the DDNC and slip and access channel.

- d. **The maximum duration of the temporary alteration is three years, subject to annual permit renewal, and restoration measures are undertaken at the completion of the project within the life of the permit.**

Mitigation shall not be required by this Plan for such temporary alterations.

This policy shall be implemented through the administrative conditional use process and through local review and comment on state and federal permit applications.

This policy is based on the recognition that temporary estuarine fill and habitat alterations are frequently legitimate actions when in conjunction with jetty repair and other important economic activities. It is not uncommon for projects to need

staging areas and access that require temporary alteration to habitat that is otherwise protected by this Plan.

RESPONSE: JCEP will comply with durational limits on the temporary dredge line that it proposes in the 13B-NA and 14-DA zones.

CBEMP Policy #9: Solutions to Erosion and Flooding Problems

Local government shall prefer nonstructural solutions to problems of erosion and flooding to structural solutions. Where shown to be necessary, water and erosion control structures such as jetties, bulkheads, seawalls and similar protective structures and fill whether located in the waterways or on shorelands above ordinary high-water mark shall be designed to minimize adverse impacts on water currents, erosion and accretion patterns.

- I. Further, where listed as an “allowable” activity within respective management units, riprap may be allowed in Development Management Units upon findings that:**
 - a. Land use management practices and nonstructural solutions are inadequate; and**
 - b. Adverse impacts on water currents, erosion and accretion patterns are minimized; and**
 - c. It is consistent with the Development Management Unit requirements of the Estuarine Resources Goal.**
- II. Further, where listed as an “allowable” activity within respective management units, riprap may be allowed in Conservation Aquatic Management Units upon findings that:**
 - a. Land use management practices and nonstructural solutions are inadequate; and**
 - b. Adverse impacts on water currents, erosion and accretion patterns are minimized; and**
 - c. Riprap is consistent with the resource capabilities of the area and the purposes of maintaining Conservation management units.**
- III. Further, where listed as an “allowable” activity within respective management units, riprap shall only be allowed in Natural Aquatic (NA) units upon findings that:**
 - a. There is a need to protect from erosion: uses existing as of October 7, 1977, unique natural resources and historic archaeological values, or public facilities; and**

- b. Land use management practices and nonstructural solutions are inadequate; and**
- c. It is consistent with the natural management unit as set forth in this Plan and required by Goal #16; and**
- d. Adverse impacts on water currents, erosion and accretion patterns and estuarine organisms and their habitat are minimized.**

Implementation of this policy shall occur through local review of and comment on state and federal permit applications for such projects.

This strategy is based on the recognition that nonstructural solutions are often more cost effective as corrective measures, but that carefully designed structural solutions are occasionally necessary. The strategy also recognizes Statewide Planning Goals #16 and #17 requirements and the Oregon Administrative Rule classifying Oregon estuaries (OAR 660-17-000 as amended June, 1981).

RESPONSE: The pile dike rock apron in the 5-DA zone and the shoreline stabilization that it proposes in the 5-WD zone (riprap) are subject to Policy #9. These proposals comply with Policy #9 for the revisions set forth below.

During JCEP's early coordination with the United States Army Corps of Engineers ("USACE") Northwest Division, Portland District, Section 408 Project Development Team, a need was identified to protect Pile Dike 7.3 from slope migration (erosion) or equilibration. JCEP and USACE determined that implementing a pile dike rock apron (riprap) is the necessary protective measures to arrest slope migration before it progresses to a condition that will negatively impact Pile Dike 7.3. The pile dike rock apron is riprap, a nonstructural solution.

Further, the pile dike rock apron complies with paragraph I of Policy #9. Land use management practices and nonstructural solutions are inadequate to protect Pile Dike 7.3. Without protective riprap, wind, waves, and currents will erode Pile Dike 7.3. The design of the pile dike rock apron will minimize adverse impacts on water currents, erosion and accretion patterns. The pile dike rock apron is consistent with the development management unit requirements of the Estuarine Resources Goal (16). Goal 16 explains that development management units "provide for navigation and other identified needs for public, commercial, and industrial water-dependent uses," and that permissible uses include "navigation and water-dependent commercial and industrial uses." A primary purpose of Pile Dike 7.3 is to assist with navigation in the Coos Bay Deep Draft Navigation Channel. Thus, the riprap is a use that will facilitate navigation, which in turn will facilitate industrial development of the North Spit, including creation of a slip and access channel for maritime navigation that will support that development. Goal 16 allows such uses in development management units.

Paragraphs II and III do not apply to the pile dike rock apron or the shoreline stabilization .

Therefore, the pile dike rock apron and shoreline stabilization complies with CBEMP Policy #9.

CBEMP Policy #13: Overall Use Priorities Within Coastal Shorelands

- I. Local governments shall maintain the following priorities for the overall use of coastal shorelands (from highest to lowest):**
 - a. Promote uses which maintain the integrity of estuaries and coastal waters;**
 - b. Provide for water-dependent uses;**
 - c. Provide for water-related uses;**
 - d. Provide for nondependent, nonrelated uses which retain flexibility of future use and do not prematurely or inalterably commit shorelands to more intensive uses;**
 - e. Provide for development, including nondependent, nonrelated uses in urban areas compatible with existing or committed uses;**
 - f. Permit nondependent, nonrelated uses which cause a permanent or long-term change in the features of coastal shorelands only upon a demonstration of public need.**

In addition, priority uses for flood hazard and floodplain areas outside of incorporated cities shall include agriculture, forestry, recreation and open space.

This strategy recognizes that the Coos Bay Estuary Management Plan's shoreland designations, and permitted uses and activities are based upon and establish general priorities for the use of coastal shoreland resources.

RESPONSE: The meteorological station is subject to Policy #13. But Policy #13 does not create mandatory approval criteria that apply to the meteorological station. The policy establishes a priority system for the County to apply with respect to land use within coastal shorelands. The 4-CS zone allows low-intensity utilities like the meteorological station. Permitting low-intensity utilities in the 4-CS zone does not upset the aspirational priority system that Policy #13 establishes with respect to land use within coastal shorelands. The meteorological station is a use that maintains the integrity of estuaries and coastal waters and is both a water-dependent and a water-related use. The purpose of the meteorological station is to provide real time meteorological data for ships transiting the Coos Bay Deep Draft Navigation Channel. The station is thus dependent on the existence of water and shipping transit. Therefore, it is consistent with Policy #13 for the County to allow the meteorological station in the 4-CS zone.

CBEMP Policy #14: General Policy on Uses within Rural Coastal Shorelands

- I. Coos County shall manage its rural areas with the "Coos Bay Coastal Shorelands Boundary" by allowing only the following uses in rural shoreland areas, as prescribed in the management units of this Plan, except for areas where mandatory protection is prescribed by LCDC Goal #17 and CBEMP Policies #17 and #18:**
 - a. Farm uses as provided in ORS 215;**

- b. **Propagation and harvesting of forest products consistent with the Oregon Forest Practices Act;**
- c. **Private and public water-dependent recreation developments;**
- d. **Aquaculture;**
- e. **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;**
- f. **Single family residences on lots, parcels, or units of land existing on January 1, 1977 when it is established that:**
 - 1. **The dwelling is in conjunction with a permitted farm or forest use, or**
 - 2. **The dwelling is in a documented "committed" area, or**
 - 3. **The dwelling has been justified through a goal exception, and**
 - 4. **Such uses do not conflict with the resource preservation and protection policies established elsewhere in this Plan;**
- g. **Any other uses, including non-farm and non-forest uses, provided that the Board of Commissioners determines that such uses satisfy a need which cannot be accommodated at other upland locations or in urban or urbanizable areas. In addition, the above uses shall only be permitted upon a finding that such uses do not otherwise conflict with the resource preservation and protection policies established elsewhere in this Plan.**

This strategy recognizes (1) that Coos County's rural shorelands are a valuable resource and accordingly merit special consideration, and (2) that LCDC Goal #17 places strict limitations on land divisions within coastal shorelands. This strategy further recognizes that rural uses "a" through "g" above, are allowed because of need and consistency findings documented in the "factual base" that supports this Plan.

RESPONSE: The gas processing in the 6-WD zone, and the shoreline stabilization and pile dike rock apron in the 5-WD zone, are subject to and comply with Policy #14, as addressed below.

The 6-WD zone allows the gas processing “subject to the findings” in Policy #14. The gas processing is a “water-dependent industrial use” because it is an essential part of the LNG Terminal to develop on the North Spit, which will receive natural gas from the Pacific Connector Gas Pipeline, condition it, convert it to liquefied natural gas, and place it on vessels for transport through the Coos Bay Deep Draft Navigation Channel. As noted, the gas processing is the “conditioning” phase of this process, which is integral and essential to the purposes and operation of the LNG Terminal, and which has no independent purpose work unless a

component of the LNG Terminal. The LNG Terminal is a water-dependent industrial use and thus, so are its essential components, including the gas processing. The gas processing is also a “water-related” use in accordance with subsection e. of Paragraph I of Policy #14.

For the above reasons, the County can find that the gas processing “satisf[ies] a need which cannot be accommodated on uplands or in urban and urbanizable areas or in rural areas built upon or irrevocably committed to non-resource use.” In sum, the gas processing must be located at this location as a component of the LNG Terminal because it is an essential link in the chain of processes necessary to accept and process natural gas from the Pacific Connector Gas Pipeline for conversion to liquefied natural gas for transport out of Coos Bay. The gas processing could not serve its function if it was not located in the port and near the water.

The 5-WD zone allows the pile dike rock apron and shoreline stabilization “subject to the findings” in Policy #14. The pile dike rock apron and shoreline stabilization are “water-dependent industrial uses.” Their purpose is to protect Pile Dike 7.3 and to protect against erosion and slope cut-back. Pile Dike 7.3 has a primary purpose of facilitating navigation in the Coos Bay Deep Draft Navigation Channel. Specifically, JCEP seeks to protect Pile Dike 7.3 as part of its larger plan for developing the North Spit with the LNG Terminal and related uses, the terminal itself and such related uses being water-dependent industrial uses. Thus, owing to the fact that they are essential to protect the viability of industrial uses in the 5-WD zone, these uses are themselves a species of industrial use. The pile dike rock apron and shoreline stabilization are indisputably water-dependent (Pile Dike 7.3 is in the water, and “shoreline stabilization” cannot exist without a shore, which cannot exist without water) and it is an essential component of an overall plan to develop the North Spit with industrial uses. Further, the pile dike rock apron and shoreline stabilization are “water-related uses” because they are in the water and their purpose is to protect Pile Dike 7.3, a primary purpose of which pile dike is to facilitate maritime navigation.

For the above reasons, the County can find that the pile dike rock apron and shoreline stabilization in the 5-WD zone comply with Policy #14. Really, the pile dike rock apron satisfies a need that cannot be accommodated upland or in urban or urbanizable areas because its location in the estuary, at the location JCEP has proposed, is necessary to protect Pile Dike 7.3.

CBEMP Policy #16: Protection of Sites Suitable to Water-Dependent Uses; and Special Allowance for New Non-Water-Dependent Uses in "Urban Water-Dependent (UW) Units”

Local government shall protect shorelands in the following areas that are suitable for water-dependent uses, for water-dependent commercial, recreational and industrial uses.

- a. Urban or urbanizable areas;**
- b. Rural areas built upon or irrevocably committed to non-resource use; and**
- c. Any unincorporated community subject to OAR Chapter 660, Division 022 (Unincorporated Communities).**

This strategy is implemented through the Estuary Plan, which provides for water-dependent uses within areas that are designated as Urban Water-dependent (UW) management units.

- I. Minimum acreage. The minimum amount of shorelands to be protected shall be equivalent to the following combination of factors:**
 - a. Acreage of estuarine shorelands that are currently being used for water-dependent uses; and**
 - b. Acreage of estuarine shorelands that at any time were used for water-dependent uses and still possess structures or facilities that provide or provided water-dependent uses with access to the adjacent coastal water body. Examples of such structures or facilities include wharves, piers, docks, mooring piling, boat ramps, water intake or discharge structures and navigational aids.**
- II. Suitability. The shoreland area within the estuary designated to provide the minimum amount of protected shorelands, shall be suitable for water-dependent uses. At a minimum such water-dependent shoreland areas shall possess, or be capable of possessing, structures or facilities that provide water-dependent uses with physical access to the adjacent coastal water body. The designation of such areas shall comply with applicable Statewide Planning Goals.**
- III. Permissible Non-Water-Dependent Uses. Unless otherwise allowed through an Exception, new non-water-dependent uses which may be permitted in "Urban Water-Dependent (UW)" management units are a temporary use which involves minimal capital investment and no permanent structures, or a use in conjunction with and incidental and subordinate to a water-dependent use. Such new non-water-dependent uses may be allowed only if the following findings are made, prior to permitting such uses:**
 - 1. Temporary use involving minimal capital investment and no permanent structures:**
 - a. The proposed use or activity is temporary in nature (such as storage, etc); and,**
 - b. The proposed use would not pre-empt the ultimate use of the property for water-dependent uses; and**
 - c. The site is committed to long-term water-dependent use or development by the landowner.**
 - 2. Use in conjunction with and incidental and subordinate to a water-dependent use:**
 - a. Such non-water-dependent uses shall be constructed at the same time as or after the water-dependent use of the site is established, and must be carried out together with the water-dependent use.**
 - b. The ratio of the square footage of ground-level indoor floor space plus outdoor acreage distributed between the non-water-dependent uses and the**

water-dependent uses at the site shall not exceed one to three (non-water-dependent to water-dependent).

- c. Such non-water-dependent uses shall not interfere with the conduct of the water-dependent use.**

This policy shall be implemented through provisions in ordinance measures that require an administrative conditional use application be filed and approved, and the above findings be made, prior to the establishing of the proposed uses or activities.

RESPONSE: The gas processing in the 6-WD zone is subject to Policy #16.

Paragraph I of Policy #16 does not impose approval criteria on the gas processing in the 6-WD zone.

Paragraph II of Policy #16 does not impose approval criteria on the gas processing in the 6-WD zone. The gas processing does not affect the suitability for water-dependent uses of “the shoreland area within the estuary designated to provide the minimum amount of protected shorelands.”

Paragraph III of Policy #16 does not apply to the gas processing in the 6-WD zone because it is a water dependent use. Further, Paragraph III applies only to uses in UW zones and the 6-WD zone is a “WD” zone.

CBEMP Policy #17: Protection of “Major Marshes” and Significant “Wildlife Habitats” in Coastal Shorelands

Local government shall protect from development, major marshes and significant wildlife habitat, coastal headlands, and exceptional aesthetic resources located within the Coos Bay Coastal Shorelands Boundary, except where exceptions allow otherwise.

I. Local government shall protect:

- a. “Major marshes” to include areas identified in the Goal #17 “Linkage Matrix”, and the Shoreland Values Inventory map; and**
- b. “Significant wildlife habitats” to include those areas identified on the map “Shoreland Values Inventory” map; and**
- c. “Coastal headlands”; and**
- d. “Exceptional aesthetic resources” where the quality is primarily derived from or related to the association with coastal water areas.**

II. This strategy shall be implemented through:

- a. **Plan designations and use and activity matrices set forth elsewhere in this Plan that limit uses in these special areas to those that are consistent with protection of natural values, and**
- b. **Through use of the Special Considerations Map that identifies such special areas and restricts uses and activities therein to uses that are consistent with the protection of natural values. Such uses may include propagation and selective harvesting of forest products consistent with the Oregon Forest Practices Act, grazing, harvesting wild crops, and low-intensity water-dependent recreation.**
- c. **Contacting Oregon Department of Fish and Wildlife for review and comment on the proposed development within the area of the 5b or 5c bird sites.**

This strategy recognizes that special protective consideration must be given to key resources in coastal shorelands over and above the protection afforded such resources elsewhere in this Plan.

RESPONSE: The meteorological station and gas processing in the 4-CS and 6-WD zones, respectively, the temporary dredge line in the 13B-NA and 14-DA zones, the IWWP in the 7-D zone, and the pile dike rock apron and shoreline stabilization in the 5-WD zone, are all subject to Policy #17. These proposals comply with Policy #17.

Paragraph I of Policy #17 requires that development protect major marshes, significant wildlife habitats, coastal headlands, and exceptional aesthetic resources. There are no inventoried significant wildlife habitats, major marshes, or coastal headlands in the area of the meteorological station, gas processing, IWWP, pile dike rock apron, shoreline stabilization (5-WD and 7-D), or temporary dredge line in this Application. Furthermore, according to the Coos County Comprehensive Plan, there are no identified exceptional aesthetic resources in the areas for these developments: “There are no areas of exceptional or aesthetic or scenic quality within the Planning Area [See Section 4.3].” Plan Volume II, Part 2, Section 3.3-3. The Planning Area is defined as “all lands west of the Oregon Coast Highway,” subject to limited exceptions not applicable here. Plan Volume II, Part 2, Section 3.1-1.

The IWWP in the 7-D zone crosses an area identified on the County’s Shoreland Values Inventory Map as a freshwater wetland, which is a significant wildlife habitat. Paragraph II of Policy #17 explains that Policy #17’s mandate to “protect” identified resources is implemented by zoning to limit allowed uses to those that are consistent with protecting resources. The IWWP is a “high-intensity” utility and “high-intensity” utilities are allowed in the 7-D zone. Thus, the County has made the determination that high-intensity utilities like the IWWP are consistent with protecting the freshwater wetland in the 7-D zone. Further, the IWWP will not negatively impact the freshwater wetland because, although the County’s Shoreland Values Inventory Map shows the IWWP crossing a freshwater wetland, the IWWP does not in fact cross an existing delineated wetland boundary based upon available site-specific delineations.

Therefore, the meteorological station and gas processing in the 4-CS and 6-WD zones, respectively, the temporary dredge lines in the 6-DA, 7-NA, 13B-NA, and 14-DA zones,

respectively, the IWWP in the 7-D zone, the pile dike rock apron in the 5-WD zone, and the shoreline stabilization in the 6-WD zone, all comply with Paragraph I of Policy #17.

Paragraph II of Policy #17 does not impose approval criteria on the Application.

Therefore, the meteorological station, gas processing, IWWP, pile dike rock apron, shoreline stabilization (5-WD), and temporary dredge line all comply with Policy #17.

CBEMP Policy #18: Protection of "Historical, Cultural and Archaeological Sites"

Local government shall provide special protection to historical, cultural and archaeological sites and shall continue to refrain from widespread dissemination of site-specific information about identified archaeological sites.

- I. This strategy shall be implemented by requiring review of all development proposals involving an archaeological or historical site to determine whether the project as proposed would protect the historical and archaeological values of the site.**
- II. The development proposal, when submitted shall include a Site Plan Application, showing, at a minimum, all areas proposed for excavation, clearing and construction. Within three (3) working days of receipt of the development proposal, the local government shall notify the Coquille Indian Tribe and Coos, Siuslaw, Lower Umpqua Tribe(s) in writing, together with a copy of the Site Plan Application. The Tribe(s) shall have the right to submit a written statement to the local government within thirty (30) days of receipt of such notification, stating whether the project as proposed would protect the historical and archaeological values of the site, or if not, whether the project could be modified by appropriate measure to protect those values.**

"Appropriate measures" may include, but shall not be limited to the following:

- a. Retaining the historic structure in-situ or moving it intact to another site; or**
- b. Paving over the site without disturbance of any human remains or cultural objects upon the written consent of the Tribe(s); or**
- c. Clustering development so as to avoid disturbing the site; or**
- d. Setting the site aside for non-impacting activities, such as storage; or**
- e. If permitted pursuant to the substantive and procedural requirements of ORS 97.750, contracting with a qualified archaeologist to excavate the site and remove any cultural objects and human remains, reinterring the human remains at the developer's expense; or**
- f. Using civil means to ensure adequate protection of the resources, such as acquisition of easements, public dedications, or transfer of title.**

If a previously unknown or unrecorded archaeological site is encountered in the development process, the above measures shall still apply. Land development activities, which violate the intent of this strategy, shall be subject to penalties prescribed in ORS Chapter 97.990.

III. Upon receipt of the statement by the Tribe(s), or upon expiration of the Tribe(s) thirty-day response period, the local government shall conduct an administrative review of the Site Plan Application and shall:

- a. Approve the development proposal if no adverse impacts have been identified, as long as consistent with other portions of this Plan, or**
- b. Approve the development proposal subject to appropriate measures agreed upon by the landowner and the Tribe(s), as well as any additional measures deemed necessary by the local government to protect the cultural, historical and archaeological values of the site. If the property owner and the Tribe(s) cannot agree on the appropriate measures, then the governing body shall hold a quasi-judicial hearing to resolve the dispute. The hearing shall be a public hearing at which the governing body shall determine by preponderance of evidence whether the development project may be allowed to proceed, subject to any modifications deemed necessary by the governing body to protect the cultural, historical and archaeological values of the site.**
- c. Through the "overlay concept" of this policy and the Special Considerations Map, unless an exception has been taken, no uses other than propagation and selective harvesting of forest products consistent with the Oregon Forest Practices Act, grazing, harvesting wild crops, and low-intensity water-dependent recreation shall be allowed unless such uses are consistent with the protection of the cultural, historical and archaeological values, or unless appropriate measures have been taken to protect the historic and archaeological values of the site.**

This strategy recognizes that protection of historical and archaeological sites is not only a community's social responsibility, is also legally required by ORS 97.745. It also recognizes that historical and archaeological sites are non-renewable cultural resources.

RESPONSE: The meteorological station, gas processing, and IWWP in the 4-CS, 6-WD and 7-D zones, respectively, the temporary dredge line in the 6- 13B-NA and 14-DA zones, the pile dike rock apron in the 5-WD zone, and the shoreline stabilization in the 5-WD zone, are all subject to Policy #18.

For two reasons, the County should find that historical, archaeological, and cultural resources are protected in the areas where these project components would be developed. First, the project will not adversely affect County-inventoried resources.

There is a County-inventoried resource located in the vicinity of the area of the identified project components. JCEP retained the professional archaeologists and researchers at Historical Research Associates, Inc. (“HRA”) to survey the area where the resource is mapped to determine whether the project components would impact this resource. After conducting site-specific research, reviewing the results of past excavations in the area, and completing a pedestrian survey, HRA found no evidence of the resource. Accordingly, HRA concluded that the resource was not located within the project area and the project would not have adverse impacts to the resource. HRA also concluded, based upon available information, that no modifications were necessary to the project to protect the cultural, historical, and archaeological values of the resource/site. Due to the sensitive nature of the cultural resources involved, HRA’s full report is confidential and cannot be disclosed in this proceeding. HRA has prepared a summary of its methodology and findings, which is included in Exhibit 8.

Second, JCEP has entered a Memorandum of Agreement (“MOA”) with the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians (“Tribes”) to implement Policy #18. A copy of the MOA is included in Exhibit 9. The MOA incorporates a Cultural Resources Protection Agreement entered between JCEP and the Tribes (“CRPA”). The CRPA provides a process for the exchange of project-related information, confidentiality requirements, commitments to mitigation, monitoring agreements, agreements for the treatment of unanticipated discovery of cultural resources, site access agreements, and cost recovery agreements. The CRPA, in turn, incorporates an Unanticipated Discovery Plan (“UDP”), which provides procedures in the event of an unanticipated discovery of historic properties, archaeological objects, archaeological sites or human remains, funerary objects, sacred items, and items of cultural patrimony, during the construction and operation of the project. The CRPA and UDP are included as Exhibits to the MOA in Exhibit 9. In the MOA, JCEP and the Tribes agreed that the CRPA and the UDP constituted appropriate measures under CBEMP Policy #18 that would protect the cultural, historical, and archaeological values of the sites along the Early Works Alignment. JCEP is willing to accept a condition of County approval of the Application requiring compliance with the MOA and its attachments.

For these reasons, and subject to the proposed condition, the County should find that the Application is consistent with CBEMP Policy #18.

CBEMP Policy #20: Dredged Material Disposal Sites

Local government shall support the stockpiling and disposal of dredged materials on sites specifically designated in Plan Provisions, Volume II, Part 1, Section 6, Table 6.1, and also shown on the “Special Considerations Map.” Ocean disposal is currently the primary disposal method chosen by those who need disposal sites. The dredge material disposal designated sites on the list provided on Table 6.1 has decreased because the ocean has become the primary disposal method, the in-land DMD sites have diminished and those which have remained on the DMD list are sites which may be utilized in the future and not be cost prohibitive. Consistent with the "Use/Activity" matrices, designated disposal sites shall be managed so as to prevent new uses and activities, which would prevent its ultimate use for dredged material disposal. A designated site may only be released for some other use upon a finding that a suitable substitute upland site or ocean dumping is available to

provide for that need. Sites may only be released through a Plan Amendment. Upland dredged material disposal shall be permitted elsewhere (consistent with the "use/activity" matrices) as needed for new dredging (where permitted), maintenance dredging of existing functional facilities, minor navigational improvements or drainage improvements, provided riparian vegetation and fresh-water wetland are not affected. For any in-water (including inter-tidal or subtidal estuarine areas) disposal permit requests, this strategy shall be implemented by the preparation of findings by local government consistent with Policy #5 (Estuarine Fill and Removal) and Policy #20c (Intertidal Dredged Material Disposal). Where a site is not designated for dredged material disposal, but is used for the disposal of dredged material, the amount of material disposed shall be considered as a capacity credit toward the total identified dredged material disposal capacity requirement.

I. This policy shall be implemented by:

- a. Designating "Selected Dredged Material Disposal Sites" on the Special Considerations Map; and**
- b. Implementing an administrative review process (to preclude pre-emptory uses) that allows uses otherwise permitted by this Plan but proposed within an area designated as a "Selected DMD" site only upon satisfying all of the following criteria:**
 - 1. The proposed use will not entail substantial structural or capital improvements, such as roads, permanent buildings and non-temporary water and sewer connections; and**
 - 2. The proposed use must not require any major alteration of the site that would affect drainage or reduce the usable volume of the site (such as extensive site grading/excavation or elevation from fill); and**
 - 3. The proposed use must not require site changes that would prevent the expeditious conversion of the site to estuarine habitat.**
- c. Local government's review of and comment on applicable state and federal waterway permit applications for dike/tidegate and drainage ditch actions.**

II. This strategy recognizes that sites designated in the Comprehensive Plan reflect the following key environmental considerations required by LCDC Goal #16:

- a. Disposal of dredged material in upland or ocean waters was given general preference in the overall site selection process;**
- b. Disposal of dredged material in estuary waters is permitted in this plan only when such disposal is consistent with state and federal law.**
- c. Selected DMD sites must be protected from pre-emptory uses.**

RESPONSE: Stabilization is not located within the selected dredge material disposal site located within the 5-WD zone. Therefore, Policy #20 is not applicable to these proposed uses.

CBEMP Policy #23: Riparian Vegetation and Streambank Protection

- I. Local government shall strive to maintain riparian vegetation within the shorelands of the estuary, and when appropriate, restore or enhance it, as consistent with water-dependent uses. Local government shall also encourage use of tax incentives to encourage maintenance of riparian vegetation, pursuant to ORS 308.792 - 308.803.**

Appropriate provisions for riparian vegetation are set forth in the CCZLDO Section 3.2.180 (OR 92-05-009PL).

- II. Local government shall encourage streambank stabilization for the purpose of controlling streambank erosion along the estuary, subject to other policies concerning structural and non-structural stabilization measures.**

This strategy shall be implemented by Oregon Department of Transportation (ODOT) and local government where erosion threatens roads. Otherwise, individual landowners in cooperation with the Oregon International Port of Coos Bay, and Coos Soil and Water Conservation District, Watershed Councils, Division of State Lands and Oregon Department of Fish and Wildlife shall be responsible for bank protection.

This strategy recognizes that the banks of the estuary, particularly the Coos and Millicoma rivers are susceptible to erosion and has threatened valuable farm land, roads and other structures.

RESPONSE: The gas processing in the 6-WD zone and the IWWP in the 7-D zone are subject to Policy #23.

The gas processing and IWWP comply with Paragraph I of Policy #23, which requires that an applicant “strive” to implement the provisions of CCZLDO 3.2.180. CCZLDO 3.2.180 requires maintenance of riparian vegetation within 50 feet of an estuarine wetland, stream, lake or river, as identified on the Coastal Shoreland and Fish and Wildlife habitat inventory maps except in certain identified circumstances. Neither the gas processing nor the IWWP affects or is located within riparian vegetation within 50 feet of an inventoried estuarine wetland, stream, lake or river identified on County maps. Therefore, Paragraph I of Policy #23 does not apply to the gas processing or the IWWP.

Paragraph II of Policy #23 does not impose approval criteria on the Application.

Therefore, the gas processing and IWWP complies with Policy #23.

CBEMP Policy #27: Floodplain Protection within Coastal Shorelands

The respective Flood Regulations of local governments set forth requirements for uses and activities in identified flood areas; these shall be recognized as implementing ordinances of this Plan. This strategy recognizes the potential for property damage that could result from flooding of the estuary.

RESPONSE: The gas processing in the 6-WD zone, the IWWP in the 7-D zone, the pile dike rock apron and shoreline stabilization in the 5-WD zone, are all subject to Policy #27. The Floodplain Overlay zone of CCZLDO 4.11 constitutes the County's flood regulations and implements this policy. The applicable project components comply with the requirements of the County's floodplain overlay for the reasons discussed in Section II.D. of this Application based upon the analysis set forth in the SH technical memorandum included as Exhibit 11. Based upon those responses, the County should find that the Application is consistent with Policy #27.

CBEMP Policy #30: Restricting Actions in Beach and Dune Areas with "Limited Development Suitability"; and Special Consideration for Sensitive Beach and Dune Resources

- I. Coos County shall permit development within areas designated as "Beach and Dune Areas with Limited Development Suitability" on the Coos Bay Estuary Special Considerations Map only upon the establishment of findings that shall include at least:**
- a. The type of use proposed and the adverse effects it might have on the site and adjacent areas; and**
 - b. Temporary and permanent stabilization programs and the planned maintenance of new and existing vegetation; and**
 - c. Methods for protecting the surrounding area from any adverse effects of the development; and**
 - d. Hazards to life, public and private property, and the natural environment which may be caused by the proposed use; and**
 - e. Whether drawdown of groundwater would lead to loss of stabilizing vegetation, loss of water quality, or intrusion of saltwater into water supplies.**

Implementation shall occur through an administrative conditional use process which shall include submission of a site investigation report by the developer that addresses the five considerations above.

- II. This policy recognizes that:**
- a. The Special Considerations Map category of "Beach and Dune Areas with Limited Development Suitability" includes all dune forms except older stabilized dunes, active foredunes, conditionally stabilized foredunes that are**

subject to ocean undercutting or wave overtopping, and interdune areas (deflation plains) subject to ocean flooding;

- b. The measures prescribed in this policy are specifically required by LCDC Goal #18 for the above-referenced dune forms, and that;
- c. It is important to ensure that development in sensitive beach and dune areas is compatible with, or can be made compatible with, the fragile and hazardous conditions common to beach and dune areas.

III. Permits for beachfront protective structures shall be issued only where development existed on January 1, 1977 (see Section 3. Definitions for "development"). Criteria for review of all shore and beachfront protective structures shall provide that:

- a. visual impacts are minimized;
- b. necessary access to the beach is maintained;
- c. negative impacts on adjacent property are minimized; and
- d. long-term or recurring costs to the public are avoided.

IV. Local government shall cooperate with state and federal agencies in regulating the following actions in beach and dune areas by sending notification of Administrative Conditional Use decision:

- a. Destruction of desirable vegetation (including inadvertent destruction by moisture loss or root damage);
- b. The exposure of stable and conditionally stable areas to erosion;
- c. Construction of shore structures which modify current or wave patterns leading to beach erosion; and
- d. Any other development actions with potential adverse impacts.

RESPONSE: The meteorological station (4-CS zone), the temporary construction laydown (3-WD and 3-NWD), and segments of the IWWP (7-D) are subject to Policy #30. Of these proposals, only the IWWP, temporary construction laydown (3-WD and 3-NWD), and the meteorological station are located in a beach and dune area identified as “limited suitability” by the County’s “Beach and Dune Areas with Limited Development Suitability” map.

Paragraph I of Policy #30 requires JCEP to submit for the IWWP, temporary construction laydown (3-WD and 3-NWD), and the meteorological station a “site investigation report” that addresses the criteria set forth in subsections a.-e. of Paragraph I. Exhibit 10 to this Application is such a report, which demonstrates that these proposals comply with Policy # 30.

Paragraphs II, III, and IV of Policy #30 do not impose approval criteria with which any JCEP proposal must comply.

Based upon the report that is Exhibit 10 to this Application, the County should find that the proposed segments of the IWWP, meteorological station, and the temporary construction laydown activity are consistent with CBEMP Policy #30.

CBEMP Policy #49: Rural Residential Public Services

Coos County shall provide opportunities to its citizens for a rural residential living experience, where the minimum rural public services necessary to support such development are defined as police (sheriff) protection, public education (but not necessarily a rural facility), and fire protection (either through membership in a rural fire protection district or through appropriate on-site fire precaution measures for each dwelling).

Implementation shall be based on the procedures outlined in the County's Rural Housing State Goal Exception.

I. This strategy is based on the recognition:

- a. that physical and financial problems associated with public services in Coos Bay and North Bend present severe constraints to the systems' ability to provide urban level services, and**
- b. that rural housing is an appropriate and needed means for meeting housing needs of Coos County's citizens.**

RESPONSE: The meteorological station, gas processing, pile dike rock apron and shoreline stabilization, and IWWP in the 4-CS, 6-WD, 5-WD and 7-D zones, respectively, are subject to Policy #49. Policy #49 does not impose approval criteria on the meteorological station, gas processing, pile dike rock apron, shoreline stabilization or IWWP. None of these proposals are utilities or public services regarding the rural residential living experience of citizens of the County.

CBEMP Policy #50: Rural Public Services

Coos County shall consider on-site wells and springs as the appropriate level of water service for farm and forest parcels in unincorporated areas and on-site DEQ-approved sewage disposal facilities as the appropriate sanitation method for such parcels, except as specifically provided otherwise by Public Facilities and Services Plan Policies #49, and #51. Further, Coos County shall consider the following facilities and services appropriate for all rural parcels: fire districts, school districts, road districts, telephone lines, electrical and gas lines, and similar, low-intensity facilities and services traditionally enjoyed by rural property owners. This strategy recognizes that LCDC Goal #11 requires the County to limit rural facilities and services.

RESPONSE: The meteorological station, gas processing, pile dike rock apron and shoreline stabilization, and IWWP in the 4-CS, 6-WD , 5-WD and 7-D zones, respectively, are subject to Policy #50. Policy #50 does not impose approval criteria on the meteorological station, gas processing, pile dike rock apron, shoreline stabilization or IWWP . None of these proposals are utilities or public services regarding farm and forest parcels in unincorporated areas or water service for farm and forest parcels. Further, the IWWP is a low-intensity facility for supplying wastewater services at a level no greater than that traditionally enjoyed by rural property owners, and is therefore appropriate for the rural land on which JCEP proposes to construct it.

CBEMP Policy #51: Public Services Extension

- I. Coos County shall permit the extension of existing public sewer and water systems to areas outside urban growth boundaries (UGBs) and unincorporated community boundaries (UCB's) or the establishment of new water systems outside UGB's and UCB's where such service is solely for:**
 - a. development of designated industrial sites;**
 - b. development of "recreational" planned unit developments (PUDs);**
 - c. curing documented health hazards;**
 - d. providing domestic water to an approved exception for a rural residential area;**
 - e. development of "abandoned or diminished mill sites" as defined in ORS 197.719(1) and designated industrial land that is contiguous to the mill site.**
- II. This strategy shall be implemented by requiring:**
 - a. that those requesting service extensions pay for the costs of such extension; and**
 - b. that the services and facilities be extended solely for the purposes expressed above, and not for the purpose (expressed or implied) of justifying further expansion into other rural areas; and**
 - c. that the service provider is capable of extending services; and**
 - d. prohibiting hook-ups to sewer and water lines that pass through resource lands as allowed by "I, a through d" above; except, that hook-ups shall be allowed for uses covered under "II, a through d" above.**
 - e. That the service allowed by "e" above is authorized in accordance with ORS 197.719.**

RESPONSE: The meteorological station, gas processing, pile dike rock apron and shoreline stabilization and IWWP in the 4-CS, 6-WD, 5-WD and 7-D zones, respectively, are subject to

Policy #51. Policy #51 does not impose approval criteria on the meteorological station, gas processing, pile dike rock apron, shoreline stabilization, or IWWP . None of these proposals are public sewer or water systems.

F. Southwest Oregon Regional Airport Overlay Zone

CCZLDO 4.11.400 - Southwest Oregon Regional Airport

The Southwest Oregon Regional Airport is located within the City of North Bend; however, portions of the Approach, Transitional, Conical and the Horizontal Surfaces span into the Coos County’s jurisdiction. The City of North Bend has adopted airport standards and Coos County is adopting the portions of those standards that apply to the Approach, Transitional, Horizontal and Conical Surfaces. The provisions listed below apply only to the Southwest Oregon Regional Airport Transitional, Horizontal and Conical Surfaces do (sic) not apply to AO zoning districts or airports as identified (sic) Sections 4.11.300 through 4.11.460.

RESPONSE: This provision does not impose approval criteria on the Application.

CCZLDO 4.11.425 - Imaginary Surface and Noise Impact Boundary Delineation

The airport elevation, the airport noise impact boundary, and the location and dimensions of the runway, primary surface, runway protection zone, approach surface, horizontal surface, conical surface and transitional surface is delineated for the airport by the most current, and approved North Bend Municipal Airport master plan and airport layout plan, the airport master plan along with the associated maps and documents are made part of the official zoning map of the city of North Bend and Southwest Oregon Regional Airport Surface (NB/AS) Inventory Map for Coos County. All lands, waters and airspace, or portions thereof, that are located within these boundaries or surfaces shall be subject to the requirements of this overlay zone.

RESPONSE: Exhibit 12 to this Application is a map delineating the boundaries of the imaginary surfaces that comprise the County’s airport overlay zone. CCZLDO 4.11.420 defines the boundaries of the imaginary surfaces to define both the horizontal and vertical edges or outer reaches of each regulated surface. Thus, a development proposal is not within an imaginary surface unless the location of the proposed use of and structures associated lies within both the horizontal and vertical dimensions of that surface.

Exception noted below, the “horizontal surface” is 150 feet above base airport elevation of 17 feet MSL, which means the horizontal surface begins at 167 feet MSL. Thus, a proposal is not within the horizontal surface unless it is within both the horizontal dimension of as specific imaginary surface, which is depicted on Exhibit 12 and is also at least 167 feet high. The exception to this “floor” of the imaginary surfaces is the Runway Protection zone, which is a limited surface extending directly from the runway surface skyward at the slope of departing and arriving aircraft. The incoming vertical elevation of this zone at ascending elevations as applied to Exhibits 2-4, the overlay of Exhibit 13 upon these locations exhibits establishes the floor elevation of the zone at the location of the proposed use.

Of the development proposals included in this Application, none of the uses penetrate the “floor” elevation for the imaginary surfaces of 167 feet in height. Regarding the ascending elevation of the floor of the Runway Protection zone, only the Port laydown construction staging in 3-WD and 3-NWD and the limited easternmost portion of construction staging at Ingram Yard lies within this zone. However, the vertical floor of this zone at these locations is 150’ and 167’ respectively, and these structures and activities in the areas will not reach or “penetrate” this zone height. *See* Exhibit 13.

CCZLDO 4.11.430 - Notice of Land Use, Permit Applications and Overlay Zone Boundary or Surface Changes Within Overlay Zone Area

Except as otherwise provided herein, written notice of applications for land use decisions, including comprehensive plan or zoning amendments, in an area within this overlay zone, shall be provided to the airport sponsor and the Department of Aviation in the same manner as notice is provided to property owners entitled by law to written notice of land use applications found in Article 5.0.

RESPONSE: This provision does not impose approval criteria on the Application. The County must provide the required notices.

CCZLDO 4.11.435 Height Limitations on Allowed Uses in Underlying Zones

All uses permitted by the underlying zone shall comply with the height limitations in this section.

- 1. A person may not construct an object or structure that constitutes a physical hazard to air navigation, as determined by the Oregon Department of Aviation in coordination with the governing body with land use jurisdiction over the property.**
- 2. Subsection (1) of this section does not apply:**
 - a. To construction of an object or structure that is utilized by a commercial mobile radio service provider; or**
 - b. If a person received approval or submitted an application for approval from the Federal Aviation Administration or the Energy Facility Siting Council established under ORS 469.450 to construct an object or structure that constitutes a physical hazard to air navigation. A variance application will not be required if such application was made.**

RESPONSE: Since these adopted imaginary surfaces, together with the Runway Protection Zone, comprise the regulated airspace under the Overlay zone, the County should conclude that the proposed improvements do not constitute a physical hazard to aviation for purposes of CCZLDO. As noted, Exhibits 12 and 13, together with Exhibits 2-4 depicting the location of the proposed uses serve to document the location of the proposed uses and the vertical and

horizontal boundaries of the various imaginary surfaces including the Runway Protection zone. These proposed structures, only the structures comprising the gas processing facility penetrate the horizontal surface depicted on Exhibits 13 and 14. These structures, which house the thermal oxidizer, the amino regenerator and the amino contractor, exceed 167' in height but also are the subject of 7460 submittal to the FAA for notice of construction of a physical hazard to air navigation. *See* Exhibit 15. Consequently, these structures are exempt from the application of CCZLDO 4.11.435(1) pursuant to CCZLDO 4.11.435(2).

CCZLDO 4.11.440 - Procedures

An applicant seeking a land use approval in an area within this overlay zone shall provide the following information in addition to any other information required in the permit application:

- 1. A map or drawing showing the location of the property in relation to the airport imaginary surfaces. The airport authority shall provide the applicant with appropriate base maps upon which to locate the property.**
- 2. Elevation profiles and a plot plan, both drawn to scale, including the location and height of all existing and proposed structures, measured in feet above mean sea level (reference datum NAVD 88).**

RESPONSE: This Application seeks land use approvals within the area of the overlay zone established and described in CCZLDO 4.11.425. Exhibit 12 and 13 depict the location of the airport imaginary surfaces in relation to the property that is the subject of this Application and Exhibits 2-4 depict the location of the proposed improvements and structures. Taken together, those Exhibits show the location of the proposed activities and related structures in relation to the airport imaginary surfaces. JCEP may supplement, as necessary, this Application with specific elevation profiles for such proposed structures. Therefore, the Application complies with this criteria.

CCZLDO 4.11.445 - Land Use Compatibility Requirements

Applications for land use or building permits for properties within the boundaries of this overlay zone shall comply with the requirements of this section as provided herein:

- 1. Noise. Within airport noise impact boundaries, land uses shall be established consistent with the levels identified in OAR 660, Division 13, Exhibit 5. A declaration of anticipated noise levels shall be attached to any subdivision or partition approval or other land use approval or building permit affecting land within airport noise impact boundaries. In areas where the noise level is anticipated to be at or above 55 Ldn, prior to issuance of a building permit for construction of a noise sensitive land use (real property normally used for sleeping or as a school, church, hospital, public library or similar use), the permit applicant shall be required to demonstrate that a noise abatement strategy will be incorporated into the building design that will achieve an indoor noise level equal to or less than 55 Ldn.**

RESPONSE: None of the proposals that JCEP makes in this Application are within the “airport noise impact boundary,” which CCZLDO 4.11.420.3 defines as “areas located within 1,500 feet of an airport runway or within the most current, established noise contour boundaries exceeding 55 Ldn.” As to the first sub-criteria, the distance between the airport runway and the closest proposed, use or activity in this Application is at least 2,700 feet, which is well beyond the airport noise impact boundary. Regarding the noise contour boundary parameter, the adopted Master Plan for the North Bend Airport identifies 2020 noise contours of 55 Ldn or greater and none of the proposed uses or activities lies within these contours. *See* Exhibit 14. Therefore, this criterion does not apply to the Application.

2. **Outdoor Lighting. No new or expanded industrial, commercial or recreational use shall project lighting directly onto an existing runway or taxiway or into existing airport approach surfaces except where necessary for safe and convenient air travel. Lighting for these uses shall incorporate shielding in their designs to reflect light away from airport approach surfaces. No use shall imitate airport lighting or impede the ability of pilots to distinguish between airport lighting and other lighting.**

RESPONSE: This Application does not propose any structures or light-producing activities that project light directly onto an existing runway or taxiway or into existing airport approach surfaces. Most of the structures and activities that this Application proposes are located on the North Spit, which is across the bay from the airport runway and well removed from the airport approach surface or substantially north at Ingram Yard or South Dunes. The temporary construction laydown activities proposed at the Port Laydown sites is within the Runway Approach zone and any lighting at these locations incorporates shielding to ensure any lighting is directed away from the airport approach surfaces. JCEP will incorporate similar shielding to direct lighting from the remaining airport approach surface. Therefore, this Application complies with this criterion.

3. **Glare. No glare producing material, including but not limited to unpainted metal or reflective glass, shall be used on the exterior of structures located within an approach surface or on nearby lands where glare could impede a pilot’s vision.**

RESPONSE: Materials utilized for structures or activities proposed in this Application will be selected to avoid glare and related visual effects that could obscure a pilot’s vision. The exterior of structures that this Application proposes will generally be painted with flat colors and will not incorporate shiny or glare-producing materials. For example, the LNG tanks that the Application proposes will be constructed of untreated concrete of a light grey color for cryogenic (i.e., operational) purposes. Therefore, the Application complies with this criterion.

4. **Industrial Emissions. No new industrial, mining or similar use, or expansion of an existing industrial, mining or similar use, shall, as part of its regular operations, cause emissions of smoke, dust or steam that could obscure visibility within airport approach surfaces, except upon demonstration, supported by substantial evidence, that mitigation measures imposed as approval conditions will reduce the potential for safety risk or**

incompatibility with airport operations to an insignificant level. The review authority shall impose such conditions as necessary to ensure that the use does not obscure visibility.

RESPONSE: This Application does not include request for authorization of a new or expanded industrial, mining or similar use that as part of its regular operations will cause emissions of smoke, dust or steam that could obscure visibility in airport approach surfaces. Therefore, the Application complies with this approval criterion.

- 5. Landfills. No new sanitary landfills shall be permitted within 10,000 feet of any airport runway. Expansions of existing landfill facilities within these distances shall be permitted only upon demonstration that the landfills are designed and will operate so as not to increase the likelihood of bird/aircraft collisions. Timely notice of any proposed expansion shall be provided to the airport sponsor, the Department of Aviation and the FAA, and any approval shall be accompanied by such conditions as are necessary to ensure that an increase in bird/aircraft collisions is not likely to result.**

RESPONSE: This Application does not propose any new sanitary landfills or expansion of existing landfills. Therefore, this criterion does not apply to the Application.

- 6. Communications Facilities and Electrical Interference. Proposals for the location of new or expanded radio, radiotelephone, television transmission facilities and electrical transmission lines within this overlay zone shall be coordinated with the Department of Aviation and the FAA prior to approval.**

RESPONSE: This Application does not propose new or expanded radio, radiotelephone, television transmission facilities or electrical transmission lines that are within an airport imaginary surface that this overlay defines. Therefore, this criterion does not apply to the Application.

CCZLDO 4.11.450 - Water Impoundments Within Approach Surfaces and Airport Direct and Secondary Impact Boundaries

- 1. Any use or activity that would result in the establishment or expansion of a water impoundment shall comply with the requirements of this section.**
- 2. No new or expanded water impoundments of one-quarter acre in size or larger are permitted:**
 - a. Within an approach surface and within 5,000 feet from the end of a runway; or**
 - b. On land owned by the airport sponsor that is necessary for airport operations.**

RESPONSE: This Application does not request authorization for the establishment or expansion of a water impoundment a quarter acre in size or larger within an approach surface or within 5,000 feet from the end of a runway or on land owned by the airport sponsor that is necessary for airport operations. Therefore, this criterion does not apply to the Application.

CCZLDO 4.11.455 - Wetland Mitigation, Creation, Enhancement and Restoration Within Approach Surfaces and Airport Direct and Secondary Impact Boundaries

- 1. Wetland mitigation, creation, enhancement or restoration projects located within areas regulated by the Coos County Zoning and Land Development Ordinance shall be allowed upon demonstration of compliance with the requirements of this section.**
- 2. Wetland mitigation, creation, enhancement or restoration projects existing or approved on the effective date of the ordinance codified in this chapter and are recognized as lawfully existing uses.**
- 3. To help avoid increasing safety hazards to air navigation near public use airports, the establishment of wetland mitigation banks in the vicinity of such airports but outside approach surfaces and areas is encouraged.**
- 4. Applications to expand wetland mitigation projects in existence as of the effective date of the ordinance codified in this chapter, and new wetland mitigation projects, that are proposed within areas regulated by the Coos County Zoning and Land Development Ordinance shall be considered utilizing the review process applied to applications for conditional use permits and shall be permitted upon demonstration that:**
 - a. It is not practicable to provide off-site mitigation; or**
 - b. The affected wetlands provide unique ecological functions, such as critical habitat for threatened or endangered species or ground water discharge, and the area proposed for mitigation is located outside an approach surface.**
- 5. Wetland mitigation permitted under subsection (4) of this section shall be designed and located to avoid creating a wildlife hazard or increasing hazardous movements of birds across runways or approach surfaces.**
- 6. Applications to create, enhance or restore wetlands that are proposed to be located within approach surfaces or within areas regulated by Coos County Zoning and Land Development Ordinance, and that would result in the creation of a new water impoundment or the expansion of an existing water impoundment, shall be considered utilizing the review process applied to applications for conditional use permits and shall be permitted upon demonstration that:**



**Coos County
Planning Department
Application to Develop in a
Special Flood Hazard Area**

Official Use Only

Fee
Receipt No. 209848
Check No./Cash 2132826
Date 4/12/19
Received By C.O.M.
File No. FP-19-003

The undersigned hereby makes application for a permit to develop in a designated Special Flood Hazard Area ("floodplain"). The work to be performed is described below and in attachments hereto. The undersigned agrees that all such work shall be done in accordance with the requirements of the Coos County Comprehensive Plan, Coos County Zoning and Land Development Ordinance, and any other applicable Local, State, and Federal regulations. This application does not create liability on the part of the Coos County Planning Department or any officer or employee thereof for any flood damage that results from the reliance on this application or any decision made lawfully thereunder.

Owner(s): Various, see attached consents. Telephone: _____

Address: _____

City/State: _____ Zip Code: _____

Agent(s): Perkins Coie LLP Telephone: _____

Address: 1120 NW Couch Street, Tenth Floor, Attn: Steve Pfeiffer

City/State: Portland, OR Zip Code: 97209

Township: Various, see attached. Section: _____

Range: _____ Tax Lot: _____

Situs Address: _____

City/State: _____ Zip Code: _____

A. Description of Work (Complete for All Proposals):

1. Proposed Development Description:

- | | |
|--|---|
| <input type="checkbox"/> New Building | <input type="checkbox"/> Improvement to Existing Building |
| <input type="checkbox"/> Manufactured Structure | <input type="checkbox"/> Fill |
| <input checked="" type="checkbox"/> Other <u>See attached narrative.</u> | |

2. Size and location of proposed development (a site plan must be attached):

See attached narrative.

3. Is the proposed development in a Special Flood Hazard Area (Zones A, AE, A1-A30, AH, AO, V, or VE)?

☒ Yes Zone: See attached narrative.
☐ No

4. Per the FIRM, what is the zone and panel number of the area of the proposed development?

Zone: See attached narrative.

Panel Number: See attached narrative.

5. Have any other Federal, State, or Local permits been obtained?

☐ Yes - Copies of all permits must be attached.
☒ No

6. Is the proposed development in an identified floodway?

☒ Yes - A "No Rise Certification" with supporting data must be attached.
☐ No

B. Complete for New Structures and Building Site:

1. Base Flood Elevation (BFE) at the site (complete one):

☐ NGVD 29 _____ feet Source: See attached narrative.

☐ NAVD 88 _____ feet Source: See attached narrative.

2. Required lowest floor elevation, including basement (complete one):

☐ NGVD 29 _____ feet Source: See attached narrative.

☐ NAVD 88 _____ feet Source: See attached narrative.

3. Number and area of flood openings (vents): See attached narrative.

4. Enclosed area below BFE (in square feet): See attached narrative.

C. Complete for Alterations, Additions, or Improvements to Existing Structures:

1. What is the estimated market value of the existing structure? Justification for the estimate must be attached and may include, but is not limited to, appraisals completed by private agencies or the County Assessor's office.

N/A

2. What is the cost of the proposed construction? Justification for the estimate must be attached. The estimate is required to include fair market value for any work provided by the property owner or without compensation.

N/A

3. If the cost of the proposed construction equals or exceeds 50 percent of the market value of the structure, then the substantial improvement provisions shall apply.

D. Complete for Non-Residential Floodproofed Construction:

1. Type of floodproofing method:

See attached narrative.

2. The required floodproofing elevation is (complete one):

☐ NGVD 29 _____ feet Source: See attached narrative.

☐ NAVD 88 _____ feet Source: See attached narrative.

3. Floodproofing certification by a registered engineer must be attached.

E. Complete for Land Divisions, Subdivisions, and Planned Unit Development:

1. Does the proposal contain 50 lots or 5 acres?

☐ Yes - The plat or proposal must clearly identify base flood elevation.
☐ No

2. Are the 100-year Floodplain and Floodway delineated on the site plan?

☐ Yes
☐ No

F. Authorization: All areas must be initialed by all applicant(s) prior to the Planning Department accepting any application.

I hereby attest that I am authorized to make the application for Application to Develop in a Special Flood Hazard Area and the statements within this application are true and correct to the best of my knowledge and belief. I affirm that this is a legally created tract, lot or parcel of land. I understand that I have the right to an attorney for verification as to the creation of the subject property. I understand that any action authorized by Coos County may be revoked if it is determined that the action was issued based upon false statements or misrepresentation.

Applicant

I understand it is the function of the Planning Department to impartially review my application and to address all issues affecting it regardless of whether the issues promote or hinder the approval of my application. In the event a public hearing is required to consider my application, I agree I bear the burden of proof. I understand that approval is not guaranteed and the applicant(s) bear the burden of proof to demonstrate compliance with the applicable review criteria.

Applicant

As applicant(s) I/we acknowledge that is in my/our desire to submit this application and staff has not encouraged or discouraged the submittal of this application.


Applicant

Applicant(s) Original Signature



Applicant(s) Original Signature

Date



Date



Compliance Determination

SUBMIT TO COOS COUNTY PLANNING DEPT. AT 225 N. ADAMS STREET OR
MAIL TO: COOS COUNTY PLANNING 250 N. BAXTER, COQUILLE OR 97423.
EMAIL PLANNING@CO.COOS.OR.US PHONE: 541-396-7770

Date Received: _____ Fee Received _____ Receipt #: _____ Received by: _____

Please be aware if the fees are not with the included the application will not be processed.

FILE # CD- _____ (If payment is received on line a file number is required prior to submittal)

Land Owner(s) (print name): Various, see attached owner consents.

Mailing address: _____

Phone: _____ Email: _____

Applicant(s) (print name): Jordan Cove Energy Project L.P., Attn: Meagan Masten

Mailing address: 111 SW 5th Avenue, Suite 1100, Portland, OR 97204

Phone: _____ Email: mmasten@pembina.com

PROPERTY LOCATION:

See attached list.

Township	Range	Section	Tax lot(s)
----------	-------	---------	------------

Site address _____

PROJECT DESCRIPTION:

See attached narrative.

An application for Compliance Determination (CD) is required to be submitted to the Planning Department with the elements described in §5.10.200. Once the application is received the Planning Staff will review the CD against the applicable zoning district to determine if additional reviews or notifications are required.

ACKNOWLEDGEMENT STATEMENT: PERTAINING TO THE SUBJECT PROPERTY DESCRIBED ABOVE, I HEREBY DECLARE THAT I AM THE LEGAL OWNER OF RECORD OR AN AGENT HAVING CONSENT OF THE LEGAL OWNER OF RECORD AND I AM AUTHORIZED TO OBTAIN THIS ZONING COMPLIANCE LETTER SO AS TO OBTAIN NECESSARY PERMITS FOR DEVELOPMENT FROM THE DEPARTMENT OF ENVIRONMENTAL QUALITY AND/OR THE BUILDING CODES AGENCY. THE STATEMENTS WITHIN THIS FORM ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I UNDERSTAND THAT ANY PERMITS AND/OR AUTHORIZATION FOR DEVELOPMENT ISSUED BY THE PLANNING DEPARTMENT MAY BE REVOKED IF IT IS DETERMINED THAT IT WAS ISSUED BASED ON FALSE STATEMENTS, MISREPRESENTATIONS OR IN ERROR. AS A CONDITION FOR THE ISSUANCE OF THIS ZONING COMPLIANCE LETTER THE UNDERSIGNED HEREBY AGREES TO HOLD COOS COUNTY HARMLESS FROM AND INDEMNIFY THE COUNTY FOR ANY LIABILITY FOR DAMAGE WHICH MAY OCCUR AS A RESULT OF THE FAILURE TO BUILD, IMPROVE OR MAINTAIN ROADS WHICH SERVE AS ACCESS TO THE SUBJECT PROPERTY.

RURAL RESIDENTIAL COMPATIBILITY WITH FARM/FOREST MANAGEMENT PRACTICES: I HEREBY ACKNOWLEDGE THAT THE NORMAL INTENSIVE MANAGEMENT PRACTICES OCCURRING ON

ADJACENT RESOURCE LAND WILL NOT CONFLICT WITH THE RURAL RESIDENTIAL USE OR ENJOYMENT OF THE ABOVE DESCRIBED PROPERTY.

BY SIGNING THIS APPLICATION I AM ACKNOWLEDGING THAT I CAN ONLY DEVELOPE MY PROPERTY AS ALLOWED PURSUANT TO THE AUTHORIZATIONS GRANTED IN THE ZONING COMPLIANCE LETTER THAT WILL BE ISSUED. IF ADDITIONAL REVIEW IS REQUIRED I UNDERSTAND THAT IT IS MY RESPONSIBLY TO COMPLETE THE REVIEW. ALL APPLICABLE FEDERAL, STATE, AND LOCAL PERMITS SHALL BE OBTAINED PRIOR TO THE COMMENCEMENT OF ANY DEVELOPMENT ACTIVITY. ALL COSTS ASSOCIATED WITH COMPLYING WITH THE CONDITIONS ARE THE RESPONSIBILITY OF THE APPLICANT AND THAT THE APPLICANT IS NOT ACTING AS AN AGENT OF THE COUNTY.

APPLICANTS SIGNATURE: Natalie Euclos

SUBMITTAL REQUIREMENTS PLEASE CHECK OFF

The application form must be completed and include the following:

1. ☒ Plot plan drawn to scale;
2. ☒ If this is for an industrial or commercial use a parking plan is required (see Article 7.5);
3. ☒ If this is bare land and a driveway has not be completed a driveway confirmation form is required to be completed by the Roadmaster (see Article 7.6 for bonding options);
4. ☐ If this is bare land and the request is for a dwelling an address is required;
5. ☒ If this is for an estuary zoned property as defined in Chapter III then applicable zoning district standards and policies must be addressed; and
6. ☒ Consent if not the legal owner of record.

Coos County / Official Use Only

☐ Zoning Compliance Letter Issued ☐ Requires additional Review

Planner: _____ Date _____

Version 5/2014



**Coos County Planning Department
Land Use Application**

Official Use Only

FEE: _____
Receipt No. 209848
Check No./Cash 2132826
Date 4/12/19
Received By P.O.M.
File No. HBCU-19-003

Please place a check mark on the appropriate type of review that has been requested.

- ☐ Administrative Review ☒ Hearings Body Review
☐ Final Development Plan (BDR) ☐ Variance

An **incomplete** application **will not** be processed. Applicant is responsible for completing the form and addressing all criteria. Attach additional sheets to answer questions if needed. Please indicated not applicable on any portion of the application that does not apply to your request.

A. Applicant:

Name: Jordan Cove Energy Project L.P. Telephone: _____
Address: Attn: Meagan Masten, 111 SW 5th Avenue, Suite 1100
City: Portland State: OR Zip Code: 97204

B. Owner:

Name: Various, see attached consents. Telephone: _____
Address: _____
City: _____ State: _____ Zip Code: _____

C. As applicant, I am (check one): Please provide documentation.

- ☐ The owner of the property (shown on deed of record);
- ☐ The purchaser of the property under a duly executed written contract who has the written consent of the vendor to make such application (consent form attached).
- ☐ A lessee in possession of the property who has written consent of the owner to make such application (consent form attached).
- ☒ The agent of any of the foregoing who states on the application that he/she is the duly authorized agent and who submits evidence of being duly authorized in writing by his principal (consent form attached).

D. Description of Property: See attached list.

Township _____ Range _____ Section _____ Tax Lot _____
Tax Account _____ Lot Size _____ Zoning District _____

E. Information (please check off as you complete)

- ☒ 1. Project Proposal. Attach description if needed. See attached narrative.
- ☒ 2. A detailed parcel map of the subject property illustrating the size and location of existing and proposed uses, structures and roads on an 8½" x 11" paper to scale. Applicable distances must be noted on the parcel map along with slopes. (See example plot map)Covenants or deed restrictions on the property, if unknown contact title company.
- ☒ 3. Existing Use See application narrative.
- ☒ 4. Site Address Varies by property, see application narrative.
- ☒ 5. Access Road Trans-Pacific Parkway
- ☒ 6. Is the Property on Farm/Forest Tax Deferral No
- ☒ 7. Current Land Use (timber, farming, residential, etc.) Varies, see application narrative.
- ☒ 8. Major Topography Features (streams, ditches, slopes, etc.) Varies, see application narrative.
- ☒ 9. List all lots or parcels that the current owner owns, co-owns or is purchasing which have a common boundary with the subject property on an assessment map.
- ☒ 10. Identify any homes or development that exists on properties identified in #9.
- ☒ 11. A copy of the current deed of record.

F. Proposed use and Justification

Please attach an explanation of the requested proposed use and **findings (or reasons)** regarding how your application and proposed use comply with the following the Coos County Zoning and Land Development Ordinance (LDO). Pursuant to the LDO, this application may be approved only if it is found to comply with the applicable criteria for the proposed use. Staff will provide you with the criteria; however, staff cannot provide you with any legal information concerning the adequacy of the submitted findings, there is no guarantee of approval and the burden rests on the applicant. (You may request examples of a finding)

☒ **List of Applicable Criteria and Justification:**

See attached narrative.

G. Authorization:

All areas must be initialed by all applicant(s) prior to the Planning Department accepting any application unless the statement is not applicable. If one of the statements, below is not applicable to your request indicated by writing N/A.

I hereby attest that I am authorized to make the application for a conditional use and the statements within this application are true and correct to the best of my knowledge and belief. I affirm that this is a legally created tract, lot or parcel of land. I understand that I have the right to an attorney for verification as to the creation of the subject property. I understand that any action authorized by Coos County may be revoked if it is determined that the action was issued based upon false statements or misrepresentation.

ORS 215.416 Permit application; fees; consolidated procedures; hearings; notice; approval criteria; decision without hearing. (1) When required or authorized by the ordinances, rules and regulations of a county, an owner of land may apply in writing to such persons as the governing body designates, for a permit, in the manner prescribed by the governing body. The governing body shall establish fees charged for processing permits at an amount no more than the actual or average cost of providing that service. The Coos County Board of Commissioners adopt a schedule of fees which reflect the average review cost of processing and set forth that the Planning Department shall charge the actual cost of processing an application. Therefore, upon completion of review of your submitted application/permit a cost evaluation will be done and any balance owed will be billed to the applicant(s) and is due at that time. By signing this form you acknowledge that you are responsible to pay any debt caused by the processing of this application. Furthermore, the Coos County Planning Department reserves the right to determine the appropriate amount of time required to thoroughly complete any type of request and, by signing this page as the applicant and/or owner of the subject property, you agree to pay the amount owed as a result of this review. If the amount is not paid within 30 days of the invoice, or other arrangements have not been made, the Planning Department may choose to revoke this permit or send this debt to a collection agency at your expense.

I understand it is the function of the planning office to impartially review my application and to address all issues affecting it regardless of whether the issues promote or hinder the approval of my application. In the event a public hearing is required to consider my application, I agree I bear the burden of proof. I understand that approval is not guaranteed and the applicant(s) bear the burden of proof to demonstrate compliance with the applicable review criteria.

As applicant(s) I/we acknowledge that is in my/our desire to submit this application and staff has not encouraged or discouraged the submittal of this application.



Applicant(s) Original Signature

Applicant(s) Original Signature



Print Name

Print Name

Date Received: 4/12/19
Receipt # 209848

COOS COUNTY ROAD DEPARTMENT



ACCESS/DRIVEWAY/ROAD/ PARKING VERIFICATION PERMIT

**THIS FORM NEEDS TO BE SUBMITTED TO COOS COUNTY PLANNING DEPARTMENT
225 N. ADAMS STREET OR MAILED TO: 250 N. BAXTER, COQUILLE OR 97423**

All new and replacement dwellings, commercial or industrial development requires this form.

Other development may require verification of access.

Payment for this permit can be submitted to the Coos County Planning Department in the form of cash or check

For Office Use Only: FILE # DR-19-033 FEE: \$153

Applicant/Agent (print name): Jordan Cove Energy Project L.P.

Mailing address: Attn: Meagan Masten, 111 SW 5th Avenue, Suite 1100, Portland, OR 97204

Phone: _____ Email: mmasten@pembina.com

Land Owner (print name): Various, see attached consents.

Mailing address: _____

Phone: _____ Email: _____

LOCATION

See attached list.

Township _____ Range _____ Section _____ Tax Lot _____

Site address _____

Zone (s) _____

Acreage _____

EXISTING IMPROVEMENTS Describe any improvements to the property such as any roads, structures, etc.

See attached narrative.

Applicant Signature: Natalie Eagles

Through applying for this application I authorize the Coos County Roadmaster or designee to enter upon the property subject of the application to conduct a site visit necessary for processing the requested application. The applicant shall contact the Coos County Road Department to arrange for the site visit once the access, driveway, road and/or parking requirements have been met. If you would like to schedule a visit or inquire further about requirements including bonding please contact 541-396-7660. This signed form must be returned to the Planning Department prior to the issuance of a zoning compliance letter.

NOTICE: The Applicant is responsible for providing enough information in this application for staff to make reasonable findings.

REQUIRED SUBMITTALS

1. All permits shall contain the following:
 - a. Property boundaries;
 - b. Location of all structures on the subject property;
 - c. Required parking spaces;
 - d. Current utilities and proposed utilities; and
 - e. Roadmaster may require drawings and specs from the Oregon Standards Specification Manual (OSSC) (current edition).
2. In addition Parking Plans shall contain the following:
 - a. The location and design of bicycle and pedestrian facilities shall be indicated on the site plan if this is a parking plan;
 - b. Location of existing and proposed access point(s) on both sides of the road where applicable;
 - c. Pedestrian access and circulation will be required if applicable. Internal pedestrian circulation shall be provided in new commercial, office, and multi-family residential developments through the clustering of buildings, construction of walkways, landscaping, accessways, or similar techniques;
 - d. All plans (industrial and commercial) shall clearly show how the internal pedestrian and bicycle facilities of the site connect with external existing or planned facilities or systems;
 - e. Distances to neighboring constructed access points, median openings (where applicable), traffic signals (where applicable), intersections, and other transportation features on both sides of the property;
 - f. Number and direction of lanes to be constructed on the road plus striping plans;
 - g. All planned transportation features (such as sidewalks, bikeways, auxiliary lanes, signals, etc.); and
 - h. Parking and internal circulation plans including walkways and bikeways, in UGB's and UUC's.
3. Additional requirements that may apply depending on size of proposed development.
 - a. Traffic Study completed by a registered traffic engineer.
 - b. Access Analysis completed by a registered traffic engineer
 - c. Sight Distance Certification from a registered traffic engineer.

Regulations regarding roads, driveways, access and parking standards can be found in Coos County Zoning and Land Development Ordinance (CCZLDO) Article 7.

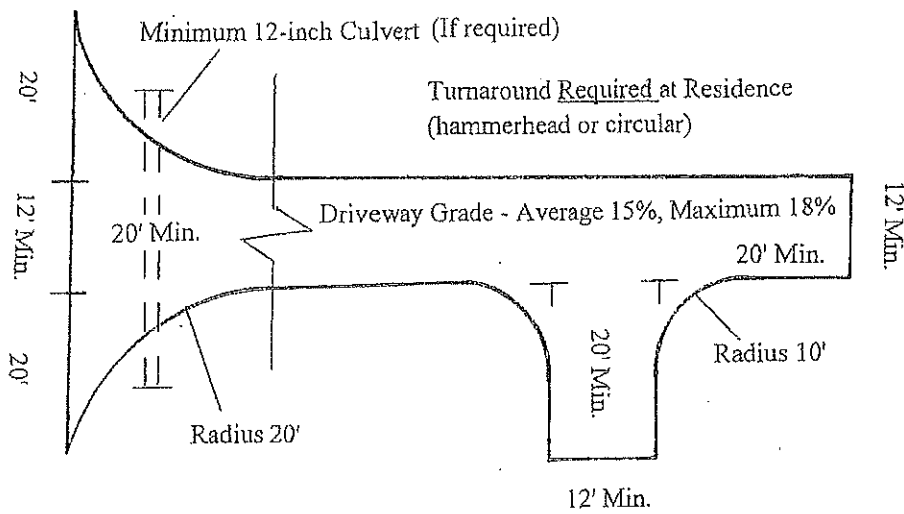
DRIVEWAY STANDARDS DRAWING – SINGLE RESIDENCE

Sight Distance Requirements (at the approach entrance)

- Speed less than 35 mph – 100' both directions
- Speed greater than 35mph – 150' both directions

All Weather Surface – minimum 4 – inches aggregate base or as required by Roadmaster.

Figure 7.1.425



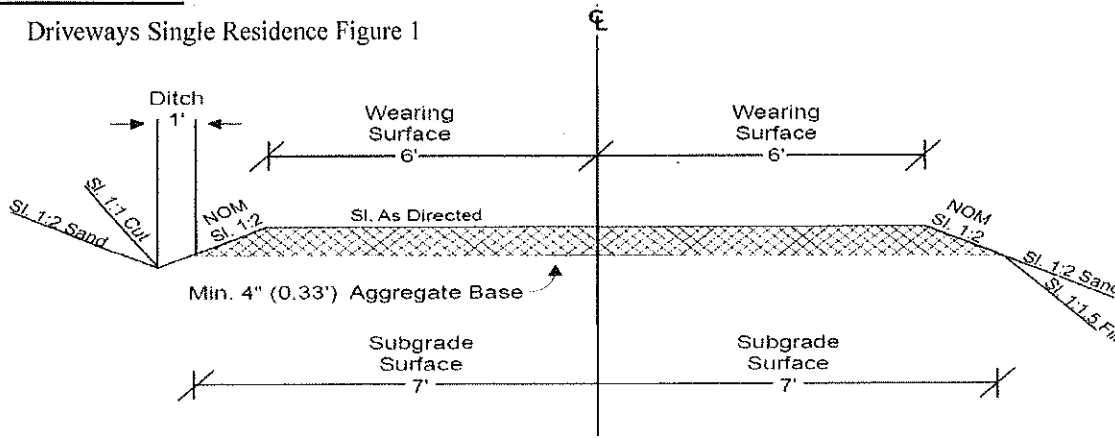
Construct appropriate ditches to prevent water runoff from discharging from the land onto a public road under county jurisdiction. Pursuant to ORS 368.256 the creation of a road hazard prohibited.

If driveway is over 1,000 ft., a pullout is required every 600 ft.

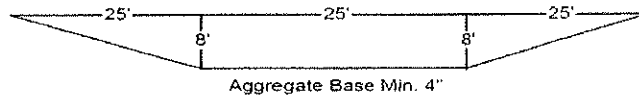
If a driveway cannot meet the maximum 18% grade then a legal agreement may be signed and recorded at the County Clerk's office releasing the County from any liability from such driveway development. This document must be referenced on the property deed to allow future purchasers know that the driveway does meet standard. A sign shall be placed at the bottom of the driveway to warn any users of the driveway that it is not built to standard. Proof must be filed with the Planning and Road Department that the documents have been filed and a sign has been placed. The form located on the following page must be completed, signed and recorded prior to any land use authorizations.

RURAL FIGURES

Driveways Single Residence Figure 1



Pull Outs



FORESTRY, MINING OR AGRICULTURAL ACCESS:

A private road which is created to provide ingress or egress in conjunction with the use of land for forestry, mining or agricultural purposes shall not be required to meet minimum road, bridge or driveway standards set forth in this ordinance, nor are such resource-related roads, bridges or driveways reviewable by the County. However, all new and re-opened forestry, mining or agricultural roads shall meet the access standards listed in this section.

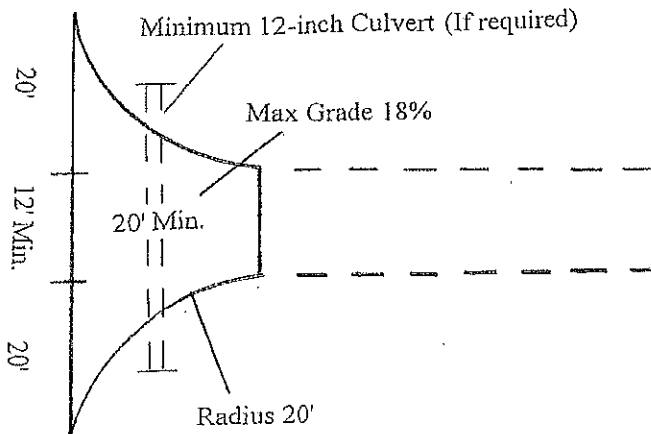
Forestry, Mining or Agricultural Access Standard drawing

Sight Distance Requirements (at the approach entrance)

- Speed less than 35 mph – 100' both directions
- Speed greater than 35 mph – 150' both directions

All Weather Surfaces – minimum aggregate base as required by the Roadmaster
The access will be developed from the edge of the developed road.

Figure 7.1.450

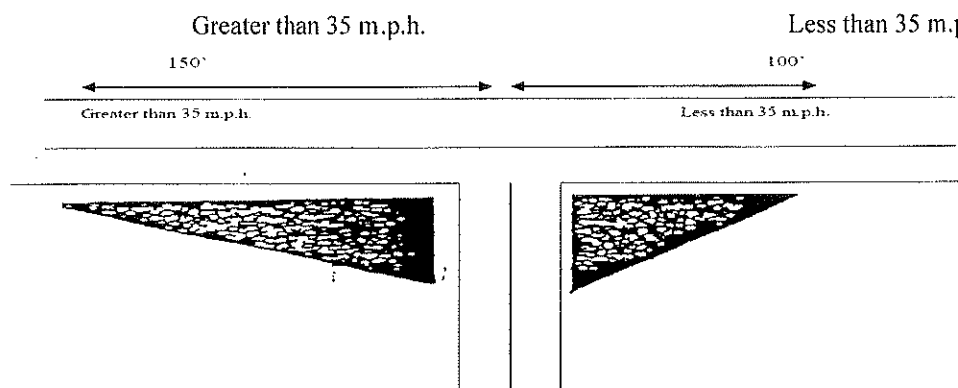


Construct appropriate ditches to prevent water runoff from discharging from the land onto a road under county jurisdiction. Pursuant to ORS 368.256 creation of a road hazard is prohibited.

VISION CLEARANCE TRIANGLE:

The following regulations shall apply to all intersections of streets and roads within all districts in order to provide adequate visibility for vehicular traffic. There shall be no visual obstructions over thirty-six (36) inches in height within the clear vision area established herein. In addition to street or road intersections, the provisions of this section shall also apply to mobile home park, recreational vehicle park, and campground accesses (entrances or exists).

The clear vision area shall extend along the right-of-way of the street for a minimum of 100 feet where the speed limit is less than 35 M.P.H.; and not less than 150 feet where the speed limit is greater than 35 m.p.h. The clear vision area shall be effective from a point in the center of the access not less than 25 feet back from the street right-of-way line.



PARKING LOT STANDARDS:

USE	STANDARD
Retail store and general commercial except as provided in subsection b. of this section.	1 space per 200 square feet of floor area, plus 1 space per employee. 1 Bicycle space
Retail store handling bulky merchandise (furniture, appliances, automobiles, machinery, etc.)	1 space per 600 square feet of floor area, plus 1 space per employee. 1 Bicycle space
Bank, general office, (except medical and dental).	1 space per 600 square feet of floor area, plus 1 space per employee. 1 Bicycle space
Medical or dental clinic or office.	1 ½ space per examination room plus 1 space per employee. 1 Bicycle space
Eating or drinking establishment.	1 space per 200 square feet of floor area, plus 1 space for every 4 seats. 1 Bicycle space
Bowling Alley	5 spaces per alley plus 1 space per 2 employees. 1 Bicycle space
Dance hall, skating rink, lodge hall.	1 space per 100 square feet of floor area plus 1 space per 2 employees. 1 Bicycle space

Stadium, arena, theater, race track	1 space per 4 seats or every 8 feet of bench length or equivalent capacity if no seating is provided. 1 Bicycle space
Storage warehouse, manufacturing establishment, or trucking freight terminal	1 space per employee. 1 Bicycle space
Wholesale establishment.	1 space per employee plus 1 space per 700 square feet of patron serving area. 1 Bicycle space
Welfare or correctional institution	1 space per 5 beds for patients or inmates, plus 1 space per employee. 1 Bicycle space
Convalescent hospital, nursing home, sanitarium, rest home, home for the aged.	1 space per 5 beds for patients or residents, plus 1 space per employee. 1 Bicycle space
Church, mortuary, sports arena, theater.	1 space for 4 seats or every 8 feet of bench length in the main auditorium. 1 Bicycle space
Library, reading room.	1 space per 400 square feet of floor area plus 1 space per employee. 1 Bicycle space
Preschool nursery, kindergarten.	2 spaces per teacher; plus off-street loading and unloading facility. 1 Bicycle space per 20 students
Elementary or junior high school.	1 space per classroom plus 1 space per administrative employee or 1 space per 4 seats or every 8 feet of bench length in the auditorium or assembly room whichever is greater. 1 Bicycle space per 10 students
High school	1 space per classroom plus 1 space per administrative employee plus 1 space for each 6 students or 1 space per 4 seats or 8 feet of bench length in the main Auditorium, whichever is greater. 1 Bicycle space per 20 students
Other auditorium, meeting room.	1 space per 4 seats or every 8 feet of bench length. 1 Bicycle space
Single-family dwelling.	2 spaces per dwelling unit.
Two-family or multi- family dwellings.	1 ½ spaces per dwelling unit. 1 bicycle space per unit for buildings with 4 or more units.
Motel, hotel, rooming or boarding house.	1 space per guest accommodation plus 1 space per employee.
Mobile home or RV park.	1 ½ spaces per mobile home or RV site.

Parking lot standards – Use the table above along with the area available to calculate the number of spaces required and determine the type of parking lot that needs to be created. The table below explains the spacing and dimensions to be used.

Minimum Horizontal Parking Widths for Standard Automobiles					
	One-way Parallel	30 deg	45 deg	60 deg	90 deg
Figures	A	B	C	D	E
Single row of Parking					
Parking Aisle	9'	20'	22'	23'	20'
Driving Aisle	12'	16'	17'	20'	24'
Minimum width of module (row and aisle)	21'	36'	39'	43'	44'
Figures #'s	F	G	H	I	J
Two Rows of Parking					
Parking Aisle	18'	40'	44'	46'	40'
Driving Aisle	12'	16'	17'	20'	24'
Minimum width of module (row and aisle)	30'	56'	61'	66'	64'

For figures please see Coos County Zoning and Land Development Ordinance (CCZLDO) § 7.5.175.

Please note: If you are developing in any wetlands or floodplain please contact Department of State Lands to ensure you are not required to obtain a state permit.

Property Information

Fort Chicago Holdings II. U.S. LLC

Property Described as Township 25 South, Range 13 West, Section 3, Tax Lot 200

Property Described as Township 25 South, Range 13 West, Section 4, Tax Lots 100, 101 and 400

Property Described as Township 25 South, Range 13 West, Section 5, Tax Lots 100 and 200

Oregon International Port of Coos Bay

Property Described as Township 25 South, Range 13 West, Section 18, Tax Lot 100

Property Described as 25S13060000100, 25S13060000101 (legal description to follow)

Roseburg Forest Products Co.

Property Described as Township 25 South, Range 13 West, Section 4, Tax Lot 300



Coos County Planning Department
Coos County Courthouse Annex, Coquille, Oregon 97423
Mailing Address: Planning Department, Coos County Courthouse, Coquille, Oregon 97423
(541) 396-7770
FAX (541) 396-1022 / TDD (800) 735-2900

Jill Rolfe Planning Director

CONSENT

On this 11 day of April, 2019,

I, C. S. Scherman on behalf of Fort Chicago Holdings II U.S. LLC
(Print Owners Name as on Deed)

as owner/owners of the property described as Township 25 South, Range 13 West,

Section 4, Tax Lot 0100, Deed Reference #2011-6530

hereby grant permission to Jordan Cove Energy Project L.P. so that a(n)
(Print Name)

land use
(Print Application Type) application can be submitted to the Coos

County Planning Department.

Owners Signature/s Fort Chicago Holdings II U.S. LLC


C. S. Scherman VP, General Counsel and Corporate Secretary

***Additional Property Information**

Property described as Township 25 South, Range 13 West, Section 4, Tax Lot 0400, Deed Reference 2012-10731

Property described as Township 25 South, Range 13 West, Section 3, Tax Lot 0200, Deed Reference 2012-10676

Property described as Township 25 South, Range 13 West, Section 4, Tax Lot 0101, Deed Reference 2011-6530

Property described as Township 25 South, Range 13 West, Section 5, Tax Lot 0100, Deed Reference 2011-6530

Property described as Township 25 South, Range 13 West, Section 5, Tax Lot 0200, Deed Reference 2011-6530

After recording return to:

Perkins Coie LLP
Attn: Andrew H. Solomon
1120 NW Couch St. 10th Fl.
Portland, Oregon 97209

This space reserved for recorder's use.

COOS COUNTY, OREGON	2015-009486
\$76.00	10/22/2015 08:37:09 AM
Terri L. Turi, Coos County Clerk	Pgs=7

GRANTOR:

Rick Orton as successor trustee of the Gertrude E. Wickett Trust created by trust instrument dated November 14, 1996 and Rick Orton as successor trustee of the Trust A-Credit Shelter Trust created under the Wallace and Gertrude Wickett Trust Agreement dated October 18, 1984 upon the death of Wallace L. Wickett

GRANTEE:

Fort Chicago Holdings II U.S. LLC,
a Delaware limited liability company
c/o Jordan Cove Energy Project L.P.,
125 W. Central Avenue, Suite 380
Coos Bay, OR 97420

Until a change is requested, all tax statements shall be sent to Grantee at the following address:

Fort Chicago Holdings II U.S. LLC,
a Delaware limited liability company
c/o Jordan Cove Energy Project L.P.,
125 W. Central Avenue, Suite 380
Coos Bay, OR 97420

STATUTORY WARRANTY DEED

RICK ORTON AS SUCCESSOR TRUSTEE OF THE GERTRUDE E. WICKETT TRUST CREATED BY TRUST INSTRUMENT DATED NOVEMBER 14, 1996, as to an undivided 1/2 interest, and RICK ORTON AS SUCCESSOR TRUSTEE BY CONSENSUS APPOINTMENT UNDER ORS 130.615(3), ON FILE IN PROBATE FOR THE ESTATE OF JOANNE E. CULP, DECEASED, CASE NO. 12PB0191, IN CIRCUIT COURT OF OREGON FOR COOS COUNTY, SAID RICK ORTON BEING SUCCESSOR TRUSTEE TO GERTRUDE E. WICKETT AND JOANNE CULP, TRUSTEES OF THE TRUST A-CREDIT SHELTER TRUST CREATED UNDER THE WALLACE AND GERTRUDE WICKETT TRUST AGREEMENT DATED OCTOBER 18, 1984 UPON THE DEATH OF WALLACE L. WICKETT, as to an undivided 1/2 interest (collectively, "Grantor"), conveys and warrants to FORT CHICAGO HOLDINGS II U.S. LLC, a Delaware limited liability company ("Grantee"), the real property in Coos County, Oregon, more particularly described on Exhibit A attached hereto and by this reference incorporated herein, free of encumbrances except as specifically set forth on attached Exhibit B.

The true and actual consideration for this transfer is \$0.00 and other good and valuable consideration.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR

PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

Dated August 19, 2014⁵

GRANTOR:

Rick L. Orton

Rick Orton as successor trustee of the Gertrude E. Wickett Trust created by trust instrument dated November 14, 1996

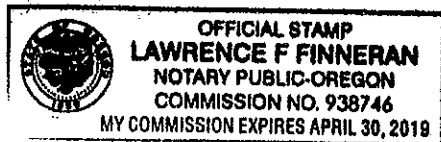
Rick L. Orton

Rick Orton as successor trustee by consensus appointment under ORS 130.615(3), on file in probate for the estate of Joanne E. Culp, Deceased, Case No. 12PB0191, in Circuit Court of Oregon for Coos County, said Rick Orton being successor trustee to Gertrude E. Wickett and Joanne Culp, trustees of the Trust A-Credit Shelter Trust created under the Wallace and Gertrude Wickett Trust Agreement dated October 18, 1984 upon the death of Wallace L. Wickett

STATE OF Oregon)
COUNTY OF Coos) ss.

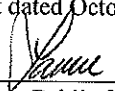
The foregoing instrument was acknowledged before me this 19th day of August, 2014⁵ by Rick Orton as successor trustee of the Gertrude E. Wickett Trust created by trust instrument dated November 14, 1996.

Lawrence F. Finneran
Notary Public for the State of Oregon
My commission expires: 4-30-19



STATE OF Oregon)
) ss.
COUNTY OF Coos)

The foregoing instrument was acknowledged before me this 19th day of August, 2015 by Rick Orton as successor trustee by consensus appointment under ORS 130.615(3), on file in probate for the estate of Joanne E. Culp, Deceased, Case No. 12PB0191, in Circuit Court of Oregon for Coos County, said Rick Orton being successor trustee to Gertrude E. Wickett and Joanne Culp, trustees of the Trust A-Credit Shelter Trust created under the Wallace and Gertrude Wickett Trust Agreement dated October 18, 1984 upon the death of Wallace L. Wickett


Notary Public for the State of Oregon
My commission expires: 4-30-19

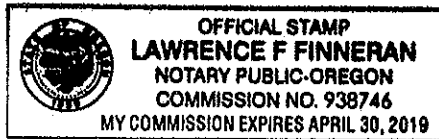


EXHIBIT A

Legal Description

Beginning at an iron pipe which is South 661.67 feet and East 267.74 feet of the Northwest corner to Section 7, Township 25 South, Range 12 West, Willamette Meridian; thence North 87° 38' 20" West 189.35 feet to an iron pipe; thence North 35° 36' 10" West 131.17 feet to the South right-of-way line of Golf Course Lane; thence Northeasterly along said right-of-way 269.80 feet; thence South 19° 24' 30" East 329.16 feet to the point of beginning.

EXHIBIT B
Permitted Encumbrances

The Land has been classified as Forest, as disclosed by the tax roll. If the Land becomes disqualified, said Land may be subject to additional taxes and/or penalties.

Rights and easements for navigation and fishery which may exist over that portion of said Land lying beneath the waters of Kentucky Slough, Kentucky Inlet and Coos Bay.

Any rights in favor of the public which may exist on said Land if said Land or portions thereof are or were at any time used by the public.

Any adverse claim based upon the assertion that:

- a) Some portion of said Land is tide or submerged land, or has been created by artificial means or has accreted to such portion so created.
- b) Some portion of said Land has been brought within the boundaries thereof by an avulsive movement of Kentucky Slough, Kentucky Inlet, Coos Bay or has been formed by accretion to any such portion.

Rights of the public to any portion of the Land lying within public roads, streets and highways..

Easement(s) for the purpose(s) shown below and rights incidental thereto as reserved in a document;

Reserved by: A. M. Simpson and Sophie S. Simpson, his wife
Recording Date: May 11, 1886
Recording No: Book 14, Page 593

Easement as disclosed in Deed , as set forth in a document:

Granted to: Suntip Company, a partnership consisting of Edward F. Sohn, Howard F. Sohn, Richard F. Sohn, Gerald F. Sohn and Mark F. Sohn
Recording Date: January 31, 1990
Recording No: 90-01-1864

Right, title and interest of Suntip Company, a partnership consisting of Edward F. Sohn, Howard F. Sohn, Richard F. Sohn, Gerald F. Sohn and Mark F. Sohn and , by Deed recorded January 31, 1990 bearing Microfilm Reel No. 90-01-01864, the Company is unable to establish their respective interests of record.

Agreement Easement

Executed by: Lone Rock Timber Company, an Oregon corporation and Menasha Corporation, a Wisconsin corporation
Recording Date: January 12, 1993
Recording No.: 93-01-0619, Records of Coos County, Oregon and corrected by Agreement recorded March 2, 1993 bearing Microfilm Reel No. 93-03-0096, Records Coos County, Oregon.

Easement as disclosed by Order granting immediate possession under Coos Circuit Court
Case No.: 06CV0292
Filed: June 12, 2006.

Final Order #06-10-140C (DJC #2006 #26) in the matter of the claim for compensation under Ballot Measure 37 submitted by Gertrude Wickett and the Gertrude Wickett Trust

Recording Date: November 13, 2006
Recording No.: 2006-15341

Final Order #06-10-140C (DJC #2006 #26) in the matter of the claim for compensation under Ballot Measure 37 submitted by Gertrude Wickett and the Gertrude Wickett Trust

Recording Date: November 13, 2006
Recording No.: 2006-15342

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Coos County
Recording Date: November 30, 2006
Recording No: 2006-16032

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Coos County Highway Department
Purpose: Easement No. 36468-EA
Recording Date: December 19, 2006
Recording No: 2006-16968

Agreement The Gertrude E. Wickett Trust etal, Rick Orton, Trustee Trust dated November 14, 1996 and Williams Pacific Connector Gas Operator LLC

Executed by: Rick Orton, Trustee of the Gertrude E. Wickett Trust dated November 14, 1996 and Williams Pacific Connector Gas Operator LLC
Recording Date: January 13, 2010
Recording No.: 2010-444

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: West Coast Power Company
Purpose: power poles and lines
Recording Date: December 23, 1939
Recording No: Book 135, Page 220 Deed Records

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: United States of America
Purpose: access road
Recording Date: September 3, 1959
Recording No: Book 273, Page 560 Deed Book

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: V. Dale Westbay and Raena L. Westbay, husband and wife
Purpose: ingress and egress
Recording Date: December 23, 1969
Recording No: 69-12-44830

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Leonard J. Abrahamson and Elinor L. Abrahamson, husband and wife
Purpose: ingress and egress
Recording Date: August 18, 1971
Recording No: 71-08-62289

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Leonard J. Abrahamson and Elinor L. Abrahamson, husband and wife
Purpose: ingress and egress
Recording Date: April 11, 1972
Recording No: 72-04-70401

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Charles C. Kerwin
Purpose: ingress and egress
Recording Date: May 3, 1977
Recording No: 77-05-6696

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Charles C. Kerwin
Purpose: ingress and egress
Recording Date: May 3, 1977
Recording No: 77-05-6700

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Kenneth A. Frederickson and Patricia E. Frederickson, husband and wife
Purpose: domestic use water from existing hand dug well, pipe line and maintenance of said pipe line
Recording Date: August 11, 1983
Recording No: 83-3-7108

Agreement Memorandum of Amended and Restated Option Agreement

Executed by: Joanne Culp and Gertrude Wickett as Trustee of the Gertrude E. and Wallace Wickett Trust, created by instrument dated October 18, 1994 and Gertrude E. Wickett and Joanne Culp as Trustee of the Gertrude Wickett Trust dated November 14, 1996 and Jordan Cove Energy Project, LP a Delaware limited partnership
Recording Date: May 14, 2009
Recording No.: 2009-4477

Property taxes in an undetermined amount, which are a lien but not yet payable, including any assessments collected with taxes to be levied for the fiscal year 2015/2016.

Any adverse claim based upon the assertion that:

- a) Said Land or any part thereof is now or at any time has been below the highest of the high watermarks of the pond thereon in the event the boundary of said pond has been artificially raised or is now or at any time has been below the high watermark, if said pond is in its natural state.
- b) Some portion of said Land has been created by artificial means or has accreted to such portion so created.
- c) Some portion of said Land has been brought within the boundaries thereof by an avulsive movement of the pond thereon, or has been formed by accretion to any such portion:

Rights and easements for navigation and fishery which may exist over that portion of said Land lying beneath the waters of the pond thereon.

The rights of the public and governmental bodies for fishing, navigation and commerce in and to any portion of the Land herein described, lying below the high water line of the pond thereon.

The right, title and interest of the State of Oregon in and to any portion lying below the high water line of the pond thereon.

After recording return to:

Perkins Coie LLP
Attn: Andrew H. Solomon
1120 NW Couch St. 10th Fl.
Portland, Oregon 97209

GRANTOR:

Rick Orton as successor trustee of the Gertrude E. Wickett Trust created by trust instrument dated November 14, 1996 and Rick Orton as successor trustee of the Trust A-Credit Shelter Trust created under the Wallace and Gertrude Wickett Trust Agreement dated October 18, 1984 upon the death of Wallace L. Wickett

GRANTEE:

Fort Chicago Holdings II U.S. LLC,
a Delaware limited liability company
c/o Jordan Cove Energy Project L.P.,
125 W. Central Avenue, Suite 380
Coos Bay, OR 97420

This space reserved for recorder's use.

**AFTER RECORDING
RETURN TO
Ticor Title Company
300 West Anderson Ave. - Box 1075
Coos Bay, OR 97420-0233**

0685

Until a change is requested, all tax statements shall be sent to Grantee at the following address:

Fort Chicago Holdings II U.S. LLC,
a Delaware limited liability company
c/o Jordan Cove Energy Project L.P.,
125 W. Central Avenue, Suite 380
Coos Bay, OR 97420

STATUTORY WARRANTY DEED

RICK ORTON AS SUCCESSOR TRUSTEE OF THE GERTRUDE E. WICKETT TRUST CREATED BY TRUST INSTRUMENT DATED NOVEMBER 14, 1996, as to an undivided 1/2 interest, and RICK ORTON AS SUCCESSOR TRUSTEE BY CONSENSUS APPOINTMENT UNDER ORS 130.615(3), ON FILE IN PROBATE FOR THE ESTATE OF JOANNE E. CULP, DECEASED, CASE NO. 12PB0191, IN CIRCUIT COURT OF OREGON FOR COOS COUNTY, SAID RICK ORTON BEING SUCCESSOR TRUSTEE TO GERTRUDE E. WICKETT AND JOANNE CULP, TRUSTEES OF THE TRUST A-CREDIT SHELTER TRUST CREATED UNDER THE WALLACE AND GERTRUDE WICKETT TRUST AGREEMENT DATED OCTOBER 18, 1984 UPON THE DEATH OF WALLACE L. WICKETT, as to an undivided 1/2 interest (collectively, "Grantor"), conveys and warrants to FORT CHICAGO HOLDINGS II U.S. LLC, a Delaware limited liability company ("Grantee"), the real property in Coos County, Oregon, more particularly described on Exhibit A attached hereto and by this reference incorporated herein, free of encumbrances except as specifically set forth on attached Exhibit B.

The true and actual consideration for this transfer in terms of dollars is \$6,222,500.00.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR

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COOS COUNTY CLERK, OREGON
TERRI L. TURI, CCG, COUNTY CLERK
TOTAL \$86.00

11/30/2012 03:53:49PM
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PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

Dated November 30th, 2012

GRANTOR:

Rick L. Orton

Rick Orton as successor trustee of the Gertrude E. Wickett Trust created by trust instrument dated November 14, 1996

Rick L. Orton

Rick Orton as successor trustee by consensus appointment under ORS 130.615(3), on file in probate for the estate of Joanne E. Culp, Deceased, Case No. 12PB0191, in Circuit Court of Oregon for Coos County, said Rick Orton being successor trustee to Gertrude E. Wickett and Joanne Culp, trustees of the Trust A-Credit Shelter Trust created under the Wallace and Gertrude Wickett Trust Agreement dated October 18, 1984 upon the death of Wallace L. Wickett

STATE OF OR)
) ss.
COUNTY OF Coos)

The foregoing instrument was acknowledged before me this 30th day of November, 2012 by Rick Orton as successor trustee of the Gertrude E. Wickett Trust created by trust instrument dated November 14, 1996.

Danielle M. Mitchell

Notary Public for OR

My commission expires: 12-04-15



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COOS COUNTY CLERK, OREGON
TERRI L. TURI, CCC, COUNTY CLERK
TOTAL \$86.00

11/30/2012 03:53:49PM
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2012 10272

STATE OF OR)
) ss.
COUNTY OF Coos)

The foregoing instrument was acknowledged before me this 30th day of November, 2012 by Rick Orton as successor trustee by consensus appointment under ORS 130.615(3), on file in probate for the estate of Joanne E. Culp, Deceased, Case No. 12PB0191, in Circuit Court of Oregon for Coos County, said Rick Orton being successor trustee to Gertrude E. Wickett and Joanne Culp, trustees of the Trust A-Credit Shelter Trust created under the Wallace and Gertrude Wickett Trust Agreement dated October 18, 1984 upon the death of Wallace L. Wickett.

Danielle Mitchell
Notary Public for OR
My commission expires: 12-04-15



LEGAL25135047.2

COOS COUNTY CLERK, OREGON
TERRI L. TURI, CCC, COUNTY CLERK
TOTAL \$86.00

11/30/2012 03:53:49PM
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EXHIBIT A

Legal Description

Beginning at an 3/4" iron pipe, which is North 28°06' 50" West 731.90 feet from the common quarter section corner between Sections 6 and 7, Township 25 South, Range 12 West of the Willamette Meridian, Coos County, Oregon,
thence North 76°24'20" East 215.65 feet to an iron pipe;
thence North 0°17'45" East 216.90 feet to an iron pipe;
thence North 36°29'30" West 185.89 feet to an iron pipe;
thence North 14°58' 40" West 146.69 feet to an iron pipe;
thence North 35°34' West 134.87 feet to an iron pipe;
thence North 07°32'10" East 310.75 feet to an iron pipe;
thence North 27°45'30" East 101.79 feet to an iron pipe;
thence North 16°16' West 395.71 feet;
thence North 01°09' West 454.08 feet;
thence North 88°51 East 60.00 feet to the left bank of the Kentuck Water Highway referred to in Volume 311, Page 470, records of the Coos County Clerk;
thence following Northwesterly and Southwesterly courses along said left bank to a point due South of the meander post on the line between sections 1 and 12 , Township 25 South, Range 13 West Willamette Meridian;
thence South 541 feet to the center of the old Kentuck-Glasgow County Road;
thence Southeasterly along said boundary to the south right-of-way line of Gólf Course Lane;
thence South 89°58'20" East 210 feet;
thence North 81°14'10" East 236.49 feet;
thence North 42°38'50" East 68.68 feet;
thence North 45°11' East 71.89 feet;
thence North 32°43' East 203.83 feet;
thence North 29°02' East 126.95 feet;
thence North 60°52' East 78.86 feet;
thence North 72°58' East 213.11 feet;
thence South 74°47'30" East 241.97 feet;
thence South 88°09'50" East 131.75 feet;
thence North 71°30' 50" East 79.60 feet;
thence North 48°34'20" East 99.56 feet;
thence North 23°57'10" East 161.64 feet;
thence North 45°48'20" East 30.71 feet;
thence North 84°59'20" East 102.45 feet;
thence North 46°08'50" East 86.81 feet;
thence North 7°20'10" East 193.28 feet;

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thence North 15°36'50" West 85.35 feet;
thence North 17°27' East 284.07 feet;
thence North 12°40' East 63.37 feet to an Iron pipe;
thence leaving the south right-of-way of Golf Course Lane North 16°50' West 175 feet to an iron pipe;
thence North 82°29' East 112.00 feet;
thence North 09°47'50" East 110.61 feet to a 16" spruce;
thence North 38°17'40" East 406.57 feet to an iron pipe;
thence North 32°46'50" East 148.31 feet to an iron pipe;
thence North 32°56'40" East 78.98 feet to an iron pipe;
thence North 58°31'30" East 110.57 feet to an iron pipe;
thence North 70°38'00" East 115.53 feet to an iron pipe;
thence North 56°53'40" East 226.27 feet to an iron pipe;
thence South 79°47'10" East 557.64 feet to an iron pipe;
thence North 52°00'10" East 161.49 feet to an iron pipe;
thence North 35°12'40" East 128.64 feet to an iron pipe;
thence South 78°54'10" East 116.70 feet to an iron pipe;
thence South 42°58'50" East 210.15 feet to an iron pipe;
thence South 37°08'10" East 127.56 feet to an iron pipe;
thence South 59°36'50" East 84.81 feet to an iron pipe;
thence South 27°41'55" East 247.80 feet to the point of beginning.

TOGETHER WITH THE FOLLOWING DESCRIBED LAND:

Beginning at a point on the north line of Parcel 1 of Contract Memo (Land Sales Contract) 79-5-0555, Record of the Coos County Clerk, said point bearing North 74°28'41" West 2168.48 feet from the quarter section corner common to Sections 6 and 7, Township 25 South, Range 12 West of the Willamette Meridian, Coos County, Oregon, thence South 88°12'33" West 96.79 feet;
thence North 48°50'51" West 16.38 feet to the south line of Parcel 1 of Memorandum of Contract (Land Sales Contract) 69-12-44213, Records of the Coos County Clerk;
thence along said south line North 38°17'40" East 104.17 feet to an iron pipe;
thence North 32°46'50" East 148.31 feet to an iron pipe;
thence North 32°56'40" East 78.98 feet to an iron pipe;
thence North 58°31'30" East 110.57 feet to an iron pipe;
thence North 70°38'00" East 115.53 feet to an iron pipe;
thence North 56°53'40" East 226.27 feet to an iron pipe;
thence South 79°47'10" East 557.64 feet to an iron pipe;
thence North 52°00'10" East 161.49 feet to an iron pipe;
thence North 35°12'40" East 128.64 feet to an iron pipe;
thence South 78°57'10" East 116.70 feet to an iron pipe;

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thence South 42°48'50" East 210.15 feet to an iron pipe;
 thence South 37°08'10" East 127.56 feet to an iron pipe;
 thence South 59°36'50" East 84.81 feet to an iron pipe;
 thence South 27°41'55" East 247.80 feet to an iron pipe;
 thence North 76°24'20" East 215.65 Feet to an iron pipe;
 thence North 0°17'45" East 216.90 feet to an iron pipe;
 thence North 36°29'30" West 185.89 feet to an iron pipe;
 thence North 14°58' 40" West 146.69 feet to an iron pipe;
 thence North 35°34' West 134.87 feet to an iron pipe;
 thence North 07°32'10" East 310.75 feet to an iron pipe;
 thence North 27°45'30" East 101.79 feet to an iron pipe;
 thence North 16°16' West 395.71 feet;
 thence North 01°09' West 454.08 feet;
 thence North 88°51 East 60.00 feet to the left bank of the Kentuck Water Highway
 referred to in Volume 311, Page 470, records of the Coos County Clerk;
 thence leaving said Parcel 1 of Memorandum of Contract 69-12-44213 and running
 along said left bank of the Kentuck Water highway South 78°05' East 75 feet, more or
 less;
 thence South 01°09' East 446 feet;
 thence South 05°25' East 367 feet;
 thence South 26°12' East 180 feet; to the North-South Center Line of said Section 6;
 thence Southerly along said Center Section Line to the northeast corner of said Parcel
 1 of contract Memo 79-5-0555 to a point that bears North 637.77 feet from said Quarter
 Corner common to Sections 6 and 7;
 thence South 76°24'19" West 348.45 feet;
 thence North 31°17'39" West 282.93 feet;
 thence North 61°03'00" West 76.83 feet;
 thence North 56°26'41" West 323.64 feet;
 thence South 54°01'19" West 217.08 feet;
 thence North 79°56'40" West 561.30 feet;
 thence South 54°56'11" West 201.71 feet;
 thence South 70°33'15" West 116.94 feet;
 thence South 59°56'27" West 77.90 feet;
 thence South 30°26'08" West 56.47 feet;
 thence South 32°49'19" West 153.26 feet;
 thence South 50°20'32" West 48.34 feet to the point of beginning.

EXCEPT THE FOLLOWING DESCRIBED LAND:

That portion of Parcel 1 of Contract Memo (Land Sales Contract) 69-12-44213,
 Records of the Coos County Clerk, lying south and east of the following described line.

LEGAL25135047.2

COOS COUNTY CLERK, OREGON
 TERRI L. TURI, CCC, COUNTY CLERK
 TOTAL \$86.00

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Beginning at a point on the north line of Parcel 1 of Contract Memo (Land Sales Contract) 79-5-0555, Record of the Coos County Clerk, said point bearing North 74°28'41" West 2168.48 feet from the quarter section corner common to Sections 6 and 7, Township 25 South, Range 12 West of the Willamette Meridian, Coos County, Oregon, thence South 88°12'33" West 96.79 feet;
thence North 48°50'51" West 77.62 feet
thence South 64°00'03" West 72.49 feet;
thence South 84°02'44" West 244.04 feet;
thence North 88°38'47" West 81.93 feet;
thence South 52°37'19" West 343.51 feet;
thence South 60°53'08" West 33.98 feet;
thence South 22°43'40" West 40.32 feet;
thence South 17°17'45" East 103.64 feet;
thence South 10°44'12" East 269.98 feet;
thence South 63°58'44" East 102.96 feet;
thence South 38°37'10" East 55.86 feet;
thence South 04°07'37" East 105.84 feet;
thence South 02°06'04" West 275.90 feet;
thence South 33°02'29" East 107.22 feet to the 5/8" iron rod at the Northeast corner of Parcel 2 of Memorandum of Contract (Land Sales Contract) 69-12-44213.

EXHIBIT B
Permitted Encumbrances

The Land has been classified as Forest, as disclosed by the tax roll. If the Land becomes disqualified, said Land may be subject to additional taxes and/or penalties.

Rights and easements for navigation and fishery which may exist over that portion of said Land lying beneath the waters of Kentuck Slough, Kentuck Inlet and Coos Bay.

Any rights in favor of the public which may exist on said Land if said Land or portions thereof are or were at any time used by the public.

Any adverse claim based upon the assertion that:

- a) Some portion of said Land is tide or submerged land, or has been created by artificial means or has accreted to such portion so created.
- b) Some portion of said Land has been brought within the boundaries thereof by an avulsive movement of Kentuck Slough, Kentuck Inlet, Coos Bay or has been formed by accretion to any such portion.

Rights of the public to any portion of the Land lying within public roads, streets and highways..

Easement(s) for the purpose(s) shown below and rights incidental thereto as reserved in a document;

Reserved by: A. M. Simpson and Sophie S. Simpson, his wife
Recording Date: May 11, 1886
Recording No: Book 14, Page 593

Easement as disclosed in Deed , as set forth in a document:

Granted to: Suntip Company, a partnership consisting of Edward F. Sohn, Howard F. Sohn, Richard F. Sohn, Gerald F. Sohn and Mark F. Sohn
Recording Date: January 31, 1990
Recording No: 90-01-1864

Right, title and interest of Suntip Company, a partnership consisting of Edward F. Sohn, Howard F. Sohn, Richard F. Sohn, Gerald F. Sohn and Mark F. Sohn and , by Deed recorded January 31, 1990 bearing Microfilm Reel No. 90-01-01864, the Company is unable to establish their respective interests of record.

Agreement Easement

Executed by: Lone Rock Timber Company, an Oregon corporation and Menasha Corporation, a Wisconsin corporation
Recording Date: January 12, 1993
Recording No.: 93-01-0619, Records of Coos County, Oregon and corrected by Agreement recorded March 2, 1993 bearing Microfilm Reel No. 93-03-0096, Records Coos County, Oregon.

Easement as disclosed by Order granting immediate possession under Coos Circuit Court
Case No.: 06CV0292
Filed: June 12, 2006.

Final Order #06-10-140C (DJC #2006 #26) in the matter of the claim for compensation under Ballot Measure 37 submitted by Gertrude Wickett and the Gertrude Wickett Trust

Recording Date: November 13, 2006
Recording No.: 2006-15341

Final Order #06-10-140C (DJC #2006 #26) in the matter of the claim for compensation under Ballot Measure 37 submitted by Gertrude Wickett and the Gertrude Wickett Trust

Recording Date: November 13, 2006
Recording No.: 2006-15342

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Granted to: Coos County
Recording Date: November 30, 2006
Recording No: 2006-16032

Granted to: Coos County Highway Department
Purpose: Easement No. 36468-EA
Recording Date: December 19, 2006
Recording No: 2006-16968

Executed by: Rick Orton, Trustee of the Gertrude E. Wickett Trust dated November 14, 1996 and
Williams Pacific Connector Gas Operator LLC
Recording Date: January 13, 2010
Recording No.: 2010-444

Granted to: West Coast Power Company
Purpose: power poles and lines
Recording Date: December 23, 1939
Recording No: Book 135, Page 220 Deed Records

Granted to: United States of America
Purpose: access road
Recording Date: September 3, 1959
Recording No: Book 273, Page 560 Deed Book

Granted to: V. Dale Westbay and Raena L. Westbay, husband and wife
Purpose: ingress and egress
Recording Date: December 23, 1969
Recording No: 69-12-44830

Granted to: Leonard J. Abrahamson and Elinor L. Abrahamson, husband and wife
Purpose: ingress and egress
Recording Date: August 18, 1971
Recording No: 71-08-62289

Granted to: Leonard J. Abrahamson and Elinor L. Abrahamson, husband and wife
Purpose: ingress and egress
Recording Date: April 11, 1972
Recording No: 72-04-70401

Granted to: Charles C. Kerwin
Purpose: ingress and egress
Recording Date: May 3, 1977
Recording No: 77-05-6696

COOS COUNTY CLERK, OREGON
TERRI L. TURI, CCC, COUNTY CLERK
TOTAL \$86.00

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Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Charles C. Kerwin
Purpose: ingress and egress
Recording Date: May 3, 1977
Recording No: 77-05-6700

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Kenneth A. Frederickson and Patricia E. Frederickson, husband and wife
Purpose: domestic use water from existing hand dug well, pipe line and maintenance of said pipe line
Recording Date: August 11, 1983
Recording No: 83-3-7108

Agreement Memorandum of Amended and Restated Option Agreement

Executed by: Joanne Culp and Gertrude Wickett as Trustee of the Gertrude E. and Wallace Wickett Trust, created by instrument dated October 18, 1994 and Gertrude E. Wickett and Joanne Culp as Trustee of the Gertrude Wickett Trust dated November 14, 1996 and Jordan Cove Energy Project, LP a Delaware limited partnership
Recording Date: May 14, 2009
Recording No.: 2009-4477

LEGAL25135047.2

003899
AFTER RECORDING
RETURN TO
Ticor Title Insurance
300 West Anderson Ave - Box 1075
Coos Bay, OR 97420-0233

AFTER RECORDING RETURN TO:

Andrew Solomon
Perkins Coie LLP
1120 NW Couch, 10th Floor
Portland, Oregon 97209

**UNTIL A CHANGE IS REQUESTED, ALL TAX
STATEMENTS SHALL BE SENT TO:**

Elliot L. Trepper
Jordan Cove Energy Project L.P.
125 Central Avenue, Suite 380
Coos Bay, Oregon 97420

STATUTORY WARRANTY DEED

Weyerhaeuser NR Company, a Washington corporation, ("Grantor"), conveys and warrants to Fort Chicago Holdings II U.S. LLC, a Delaware limited liability company ("Grantee"), the following described real property free of encumbrances except as specifically set forth herein, subject to the mineral reservation set forth below:

The real property described in Exhibit "A" attached hereto (the "Property").

This conveyance is made by Grantor and accepted by Grantee subject to the exceptions to title set forth in Exhibit "B" attached hereto.

The true consideration for this conveyance is \$14,000,000.

Reservation of Mineral Rights

Grantor reserves from this conveyance all geothermal steam and heat and subsurface oil, gas and minerals which are not contained in the surface estate of the property conveyed hereby (the "Reserved Minerals"). Any oil, gas, minerals, or other deposits situated within 100 feet of the surface elevation of the Property which are recoverable by surface mining, strip mining, excavation, quarrying or similar means such as sand, gravel, granite, salt and coal shall be deemed to be included in the "surface estate" of the Property and not included in the "Reserved Minerals". This reservation of the Reserved Minerals is subject to the following right of first refusal and waiver of surface rights:

1 - STATUTORY WARRANTY DEED

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1. Grantor, for itself and any subsequent owner of the Reserved Minerals, forever waives and relinquishes all of its rights to use the surface of the Property for the purposes of exploring, mining, drilling for, producing, storing, transporting, laying pipeline for or otherwise developing or realizing on the Reserved Minerals; provided, however, that nothing contained herein shall be construed as prohibiting Grantor, or its successors or assigns, from:
 - (i) Including the Property, or any portion thereof, within any units formed to develop the Reserved Minerals by production or development activities undertaken outside the boundaries of the Property;
 - (ii) Directionally deviating the bore hole of any oil or gas well or wells drilled by Owner or its successors or assigns from the surface of any lands other than in the Property so as to cause such well or wells to cross under, be bottomed under or produce oil and gas or other minerals from the Property;
 - (iii) Developing or realizing upon the Reserved Minerals by means of any other operation that does not interfere with or require the use of the surface estate of the Property; or
 - (iv) Developing or realizing on the Reserved Minerals from the surface estate of any portion of the Property with respect to which Grantor acquires fee simple ownership.
2. Grantor hereby grants Grantee a preferential right of first refusal to acquire the Reserved Minerals. If Grantor desires to sell, lease or assign the Reserved Minerals or any interest therein, then Grantor shall provide Grantee with a copy of the proposed purchase agreement, lease or assignment (the "Offer") and Grantee shall have a period of 30 days from receipt of the Offer to determine whether Grantee elects to exercise its preferential right to purchase the Reserved Minerals offered for sale, lease or assignment pursuant to the Offer. If Grantee elects to exercise its right of first refusal, then the conveyance or other transfer of the Reserved Minerals covered by the Offer shall be made to Grantee on the terms specified in the Offer within the time period specified in the Offer, but not earlier than 90 days after exercise of the right of first refusal. If Grantee declines to exercise its right of first refusal, then Grantor shall be free to complete the transaction in accordance with the terms of the Offer. If the transaction contemplated by the Offer is not completed, then any subsequent offer to sell, lease or otherwise assign such portion of the Reserved Minerals or any other part of the Reserved Minerals (as applicable), shall be subject to this right of first refusal.

2 - STATUTORY WARRANTY DEED

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COOS COUNTY CLERK, OREGON
TERRI L. TURI, COO, COUNTY CLERK
TOTAL \$111.00

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2011 6530

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Linda Vrkljan
Sep 09, 2013 19:46

Wind Power Reservation

By its acceptance of this deed, Grantee agrees that if Grantee or any of its successors or assigns contracts with a third party, constructs or otherwise participates in or derives revenue from any wind power project or projects (collectively, the "Wind Power Projects") located upon any portion of the Property, Grantor shall have the right to share equally in all income received by the Grantee or its successors and assigns from the Wind Power Projects.

Pipeline Easement Reservation

Grantor is the owner of certain property located adjacent to, and to the east of, the Property, which property is more particularly described on Exhibit C attached hereto (the "Mill Site"). An existing waste water pipeline (the "Pipeline") originates on the Mill Site, runs across the Property and through certain other property owned by Grantor, and then connects to a second waste water pipeline owned by the Oregon International Port of Coos Bay. Grantor hereby reserves unto itself a permanent, non-exclusive easement appurtenant to the Mill Site (the "Easement") under, across and through that portion of the Property that currently contains the Pipeline, subject to the terms and conditions set forth below. The portion of the Property containing the Pipeline, as the Pipeline may be relocated from time to time pursuant to the terms hereof, is sometimes referred to herein as the "Pipeline Easement Area." Subsequent to this conveyance, Grantee shall have the right, at Grantee's expense, to conduct a survey to determine the precise location of the Pipeline and to limit the Pipeline Easement Area to the lesser of the actual portion of the Property containing the Pipeline or the easement area of ten (10) feet in width.

1. **Use of Easement; Right of Access.** Grantor shall have the right to use the Pipeline Easement Area for the purpose of operating, using, maintaining, repairing, and replacing the Pipeline. The Easement shall not be exercised so as to unreasonably disturb, impair or interfere with the use and enjoyment of the Pipeline Easement Area by Grantee. Notwithstanding the foregoing, Grantor acknowledges that Grantee will be using the Property as an industrial site and that the Pipeline Easement Area may be utilized by Grantee in a manner compatible with such use, including (without limitation) reasonably placing industrial facilities and utilities over or under the Pipeline Easement Area (without unreasonably impeding access to Pipeline for repair and maintenance purposes), and that such use shall not be deemed to unreasonably disturb, impair or interfere with Grantor's reserved rights.
2. **Location of the Easement; Relocation of Pipeline.** Notwithstanding anything herein to the contrary, Grantee shall have the right, in its sole and absolute discretion, to relocate the Pipeline to any other location within the Property at Grantee's sole cost and expense, provided, however, that Grantee gives Grantor written notice a minimum of thirty (30) days' prior to commencing any relocation of the Pipeline. From and after any relocation of the Pipeline, the location of the Easement and the Pipeline Easement Area shall be the new location of the Pipeline. Upon any relocation of the Pipeline or in the event Grantee

3 – STATUTORY WARRANTY DEED

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determines the precise location of the existing Pipeline, Grantor agrees to execute, acknowledge, and permit to be recorded, an amendment to the Easement reflecting the legal description of the Pipeline Easement Area or the new location of the Pipeline Easement Area, as applicable. Grantor shall have no right to relocate the Pipeline.

3. **Maintenance and Repair.** Grantor shall be solely responsible for the ongoing repair and maintenance of the Pipeline except that, to the extent any repair or replacement is necessitated by the negligence or willful misconduct of Grantee, Grantee shall be responsible for the cost and expense of such repair or replacement. Promptly following the completion of any maintenance, repair or replacement of the Pipeline by or on behalf of Grantor, Grantor shall restore the Pipeline Easement Area to substantially the same condition as existed prior to the commencement of any such repair, maintenance or replacement work, all at Grantor's sole cost and expense. Grantor shall not permit any liens to be filed against the Pipeline Easement Area on account of Grantor's use thereof or entry thereon.
4. **Grantor Indemnity.** In addition to any other rights available hereunder, at law or in equity, Grantor hereby agrees to indemnify and hold harmless Grantee, for, from and against any and all liabilities, damages, costs (including attorney fees), expenses, losses, claims, demands, actions and suits for personal injury or property damage, but only to the extent the same result from or arise out of or are attributable to (i) a breach by Grantor of Grantor's obligations hereunder, (ii) the use of all or any portion of the Pipeline Easement Area by Grantor, or (iii) the presence of Grantor in the Pipeline Easement Area.
6. **Grantee's Use of Pipeline.** Grantor shall permit Grantee, at any time and from time to time, in connection with the use or development of the Property, to cause any existing or new waste water drainage lines serving the Property to be connected to the Pipeline and to use the Pipeline for the purpose of draining waste water from the Property. As a condition precedent to Grantee's exercise of its rights under this Section, Grantee shall, at its sole cost and expense (i) deliver to Grantor written notice of Grantee's intent to exercise its rights under this Section, (ii) obtain all necessary approvals and permits required for Grantee to connect any drainage lines to the Pipeline from the applicable local, county state and federal agencies, and (iii) obtain all approvals or consents of third-parties necessary for Grantee to use the Pipeline.
7. **Notice.** Any notice permitted or required by Grantor or Grantee hereunder shall be given in writing and shall be deemed given and received as follows: (i) upon personal delivery, when delivered to the Grantor or Grantee, as applicable, at the address identified below; (ii) three (3) days after the date such notice is deposited in the United States Mail, postage prepaid and sent registered or certified mail, return receipt requested, to Grantor or Grantee, as applicable, at the address identified below; or (iii) if sent by a generally recognized overnight carrier, one (1) day after the same is deposited with such carrier, with proof of such delivery, when sent to Grantor or Grantee, as applicable, at the address

4 - STATUTORY WARRANTY DEED

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COOS COUNTY CLERK, OREGON
TERRI L. TURI, CCC, COUNTY CLERK
TOTAL \$111.00
I HAVE FULLY RECORDED THIS INSTRUMENT WITH THE COOS COUNTY CLERK'S OFFICE

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Sep 09, 2013 19:46

identified below. Notices to Grantor and Grantee shall be sent to the following addresses:

To Grantor: WEYERHAEUSER NR COMPANY
Attention: Real Estate Services CH 1L30
33663 Weyerhaeuser Way South
Federal Way, Washington 98003

To Grantee: JORDAN COVE ENERGY PROJECT L.P.,
Attention: Elliott L. Trepper
125 Central Avenue, Suite 380
Coos Bay, Oregon 97420

Notwithstanding anything herein to the contrary, Grantor and Grantee may each change the address to which notices shall be sent to it by delivering to the other a written notice of such change of address in any manner provided herein.

8. Miscellaneous. The Easement reserved hereunder shall run with the properties burdened and benefited thereby. The rights reserved hereunder and the obligations arising hereunder shall extend to and be binding upon Grantor and Grantee, and their beneficiaries, heirs, successors and assigns. If any term or provision hereof shall, to any extent, be deemed invalid or unenforceable, the remaining terms and provisions hereof shall not be affected thereby. Each term and provision hereof shall be valid and enforced to the fullest extent permitted by law. Time is strictly of the essence with respect to each and every term, condition, obligation, and provision herein.

Statutory Warning

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11,

5 - STATUTORY WARRANTY DEED

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COOS COUNTY CLERK, OREGON
TERRI L. TURI, CCC, COUNTY CLERK
TOTAL \$111.00
RECORDED PURSUANT TO CLERK'S DUTY TO RECORD ALL INSTRUMENTS

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CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855,
OREGON LAWS 2009.

Environmental Matters

Grantee, to the extent allowed by law, or anyone claiming by, through or under Grantee, hereby fully and irrevocably releases Grantor, and its agents and representatives, from all claims that it may now have or hereafter acquire against Grantor or its agents or representatives for any cost, loss, liability, damage, expense, action or cause of action, whether foreseen or unforeseen, arising from or related to any defects, errors or omissions on or in the Property, the presence of environmentally hazardous, toxic or dangerous substances, or any other conditions (whether patent or latent) affecting the Property. Grantee further acknowledges and agrees that this release shall be given full force and effect according to each of its expressed terms and provisions, including, but not limited to, those relating to unknown and suspected claims, damages and causes of action. As a material covenant and condition of this agreement, Grantee agrees that in the event of the discovery of any such defects, errors or omissions, the presence of environmentally hazardous, toxic or dangerous substances, or any other conditions affecting the Property, Grantee shall look solely to Grantor's predecessors in interest for any redress or relief, except for claims against Grantor based upon any obligations and liabilities of Grantor expressly provided in this deed or in the Agreement of Purchase and Sale and Option Agreement dated June 30, 2011, between Grantor and Grantee. This provision is specifically bargained for and represents a material part of Grantor's consideration for this conveyance. Nothing contained in this paragraph shall be deemed to limit, affect or diminish the warranties of title undertaken by Grantor with respect to the Property pursuant to this deed.

Executed this 12th day August, 2011.

GRANTOR: WEYERHAEUSER NR COMPANY,
a Washington corporation

By: Paul W. Leuzzi
Title: Chief Intellectual Property Counsel



Attest: Peggy Hebblethwaite
Title: Assistant Secretary

6 - STATUTORY WARRANTY DEED

PDX/068485/144971/JAA/7705900.3

STATE OF WASHINGTON)

)ss.

COUNTY OF KING)

On this 12th day of August, 2011, before me personally appeared the within named Paul W. Leuzzi and Peggy Hebblethwaite who did acknowledge that they are the Chief Intellectual Property Counsel and Assistant Secretary, respectively, of Weyerhaeuser NR Company and that they have executed the within instrument freely and voluntarily and with the property authority on behalf of Weyerhaeuser NR Company.

Alicia A. Hanson

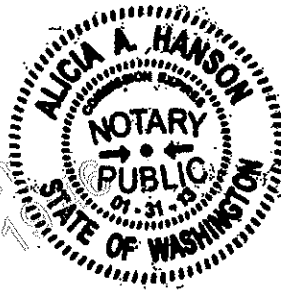
Alicia A. Hanson

Notary Public for the State of Washington

State of Washington Notary # 106641

My appointment expires: 01/31/2013

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Sep 09, 2013 19:46



7 - STATUTORY WARRANTY DEED

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COOS COUNTY CLERK, OREGON
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TOTAL \$111.00

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EXHIBIT "A"
(Property)

INGRAM YARD AND SLIP

PARCEL 1: (INGRAM YARD UPLAND SITE):

A parcel of land located in Section 5 and the NW 1/4 of Section 4, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, more particularly described as follows:

Beginning at the intersection of the Southerly right of way of the Transpacific Parkway and the East Section line of Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, said point bearing South 02°33'09" West 100.33 feet from the Northeast corner of said Section 5;
thence South 02°33'09" West 1205.42 feet along said East Section line to the North 1/16 corner on the Section line between said Section 5 and Section 4 of said Township 25 South, Range 13 West;
thence along the North line of said SW 1/4 of the NW 1/4 South 87°18'05" East 1308.40 feet, more or less, to the Northwest 1/16th corner (NW 1/16) of said Section 4;
thence along the East line of said SW 1/4 of the NW 1/4 South 02°22'23" West 454.76 feet, more or less, to a point lying 851 feet from the Center West Sixteenth corner (CW 1/16) of said Section 4;
thence North 87°25'18" West 1309.82 feet, more or less, to a point on the West line of said Section 4 lying 851 feet from the West quarter (W1/4) corner of said Section 4;
thence along the North line of Roseburg Parcel 2 per said Coos County Survey PB 11-95, North 87°33'57" West 891.07 feet to a 3/4 inch iron rod at the Northwest corner of said Parcel 2;
thence along the West line of said Roseburg Parcel 2 South 02°29'23" West 805.12 feet to a 3/4 inch iron rod;
thence along the East line of the Menasha Corporation Parcel 3 of said Coos County Survey South 02°31'39" West 1797.27 feet to a 3/4 inch iron rod;
thence North 63°01'23" West 172.02 feet;
thence North 1323.50 feet;
thence West 1614.42 feet; thence North 1961.71 feet to the Southerly right of way of Transpacific Parkway;
thence along said right of way North 81°26'19" East 545.01 feet;
thence along a 679.52 foot radius curve to the left through a central angle of 35°00'24" for a distance of 415.17 feet said curve having a chord of North 63°56'08" East 408.75 feet;
thence North 46°25'56" East 372.50 feet;
thence along a 1359.34 foot radius curve to the right through a central angle of 46°09'38" for a distance of 1095.16 feet said curve having a chord of North 69°30'45" East 1065.78 feet;
thence South 87°24'26" East 672.58 feet to the point of beginning.

Basis of Bearing is Oregon State Plane NAD 83, South Zone.

1 - EXHIBIT "A"

PDX/068485/144971/JAA/7705900.3

PARCEL 2 (INGRAM YARD MARINE TERMINAL SITE): A parcel of land located in the SE1/4 of Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, more particularly described as follows:

Beginning at a point that bears South 22°56'01" West 3172.79 feet from the Northeast corner of said Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon;

thence South 1323.50 feet; thence South 63°01'23" East 172.02 feet;
thence South 02°31'39" West 149.20 feet to the mean high water line of Coos Bay;
thence along said high water line North 78°35'55" West 83.09 feet;
thence North 84°18'34" West 133.24 feet;
thence South 88°20'25" West 267.86 feet;
thence South 62°12'18" West 90.32 feet; thence South 85°08'26" West 398.04 feet;
thence South 65°30'31" West 235.50 feet;
thence South 59°05'00" West 395.67 feet;
thence South 55°57'24" West 34.47 feet;
thence leaving said mean high water line North 19°31'12" East 325.89 feet;
thence North 00°00'03" East 1617.61 feet;
thence East 1284.99 feet to the point of beginning.

Basis of Bearing is Oregon State Plane NAD 83, South Zone.

PARCEL 3 (INGRAM YARD UPLAND SITE): Beginning at the Center North Sixteenth (CN1/16) corner of Section 4, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon; thence South 00°11'02" West 200 feet along the West boundary of Jordan Cove County Road; thence North 89°48'00" West 1309.36 feet to the North-South Center line of the NW 1/4 of said Section 4; thence North 00°07'13" East 200 feet to the approximate Northwest Sixteenth (NW1/16) corner of said Section 4; thence South 89°48'07" East 1309.58 feet to the point of beginning.

Basis of bearing per Coos County Survey PB 11-95.

2 - EXHIBIT "A"

PDX/068485/144971/JAA/7705900.3

EXHIBIT "B"

(Permitted Exceptions)

1. The Property has been classified as Forest, as disclosed by the tax roll. If the Property becomes disqualified, said Property may be subject to additional taxes and/or penalties.
2. The Property lies within the Coos Bay Urban Renewal Area and is subject to the terms and provisions thereof.
3. Rights of the public to any portion of the Property lying within the area commonly known as public streets, roads, alley, highways.
4. Any adverse claim based upon the assertion that (a) some portion of said Property is tide or submerged Property, or has been created by artificial means or has accreted to such portion so created, or (b) some portion of the Property has been brought within the boundaries thereof by an avulsive movement of Coos Bay or has been formed by accretion to any such portion..
5. Rights and easements for navigation and fishery which may exist over that portion of said Property lying beneath the waters of Coos Bay.
6. The rights of the public and governmental bodies for fishing, navigation and commerce in and to any portion of the Property herein described, lying below the high water line of the Coos Bay. The right, title and interest of the State of Oregon in and to any portion lying below the high water line of Coos Bay.
7. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Pacific Power & Light Company

Purpose: utilities

Recording Date: October 2, 1972

Recording No: 72-10-77030

Affects: Sections 5 and 8

8. Easement Agreement

Executed by: Menasha Corporation and Roseburg Lumber Company

Recording Date: August 15, 1974

Recording No.: 74-08-103495

Affects: Section 4

1 - EXHIBIT "B"

PDX/068485/144971/JAA/7705900.3

14. Right of Way

Between: United States Department of the Interior, Bureau of Property Management and
Port of Coos Bay, dba Oregon International Port of Coos Bay

Recording Date: June 29, 1984

Recording No.: 84-3-6986A

Amended by Amendment No. 1

Recording Date: April 12, 1985

Recording No.: 85-2-4500

Terms and provisions of Assignment of Right of Way Permit or Grant

Recording Date: November 21, 1990

Recording No.: 90-11-0789

15. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Pacific Power & Light Company

Purpose: utilities

Recording Date: October 30, 1984

Recording No: 84-5-4818

Affects: Section 5

16. Right of Way

Between: United States Department of the Interior, Bureau of Property Management and
Port of Coos Bay dba Oregon International Port of Coos Bay

Recording Date: April 12, 1985

Recording No.: 85-2-4502

17. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Oregon International Port of Coos Bay, a municipal corporation

Recording Date: August 22, 1988

Recording No: 88-08-1424

Affects: Section 4

3 - EXHIBIT "B"

PDX/068485/144971/JAA/7705900.3

18. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Pacific Power & Light Company, a corporation
Purpose: utilities
Recording Date: June 21, 1990
Recording No: 90-06-1346
Affects: Section 4

19. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Pacific Power & Light Company, a corporation
Purpose: utilities
Recording Date: June 21, 1990
Recording No: 90-06-1348

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Linda Vrkljan
Sep 09, 2013 19:46

4 - EXHIBIT "B"

PDX/068485/144971/JAA/7705900.3

COOS COUNTY CLERK, OREGON
TERRI L. TURI, CCC, COUNTY CLERK
TOTAL \$111.00

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2011 6530

confidential
Linda Vrkljan
Sep 09, 2013 19:46

Exhibit "C"

Legal Description of Mill Site

MILL SITE

PARCEL 6 (MILL SITE): All that portion of Government Lot 2 in Section 3, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, lying East of the Oregon International Port of Coos Bay Railroad right of way as described per Deed Instrument 2010-11360, Deed Records of Coos County, Oregon.

ALSO: That portion of the "Old" Jordan Cove Road right of way in said Section 3 lying 30 feet Southerly and 70 feet Northerly of the following described line: (Description is based on Deed Bearing Microfilm Reel No. 67-10-22858, Records of Coos County, Oregon): Commencing at the Northwest corner of Section 3, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon;
thence South 333.80 feet along the West boundary of said Section 3;
thence North 87°59'45" East 130 feet, more or less, to the Southerly right of way boundary of the Transpacific Parkway, said point being the True Point of Beginning, said portion of Jordan Cove road to be vacated is a strip of land located 70 feet Northerly and 30 feet Southerly of the following described line:
thence South 87°59'45" West 130 feet, more or less, to the West boundary of said Section 3;
thence South 88°00'00" West 901.90 feet;
thence on a 1° curve right through an angle of 2°30'00" of a distance of 250 feet;
thence North 89°30'00" West 819.50 feet; thence on a 10° curve left through an angle of 47°34'15" a distance of 475.00 feet, more or less, to the Easterly right of way boundary of the relocated Jordan Cove County Road.

EXCEPTING THEREFROM: A strip of land 150.00 feet wide lying equally 75 feet on each side of the described centerline, described in Deeds and Records of Coos County, Oregon, Volume 283, Page 317.

ALSO EXCEPTING THEREFROM: A right of way for a county road deeded on June 14, 1961 to Coos County, Oregon;

Bearings and Distances per Statutory Quit Claim Deed 2010-917, Deed Records of Coos County.

PARCEL 7 (MILL SITE): All that portion of Government Lot 2 in Section 3, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, lying West of the Oregon International Port of Coos Bay Railroad right of way as described per Deed Instrument 2010-11360, Deed Records of Coos County, Oregon.

Bearings and Distances per Statutory Quit Claim Deed 2010-917, Deed Records of Coos County.

1 - EXHIBIT "C"

PDX/068485/144971/JAA/7705900.3

confidential
Linda Vrckjan
Sep 09, 2013 19:46

AFTER RECORDING RETURN TO:
FORT CHICAGO HOLDINGS II US, LLC
c/o Jordan Cove Energy Project LP
125 W Central Avenue, Suite 380
Coos Bay, OR 97420

UNTIL A CHANGE IS REQUESTED,
ALL TAX STATEMENTS SHALL BE SENT TO:
FORT CHICAGO HOLDINGS II US, LLC
c/o Jordan Cove Energy Project LP
125 W Central Avenue, Suite 380
Coos Bay, OR 97420

TAX ACCOUNT NUMBERS:
T25-13-03/309600/Lot 200
T25-13-03/309690/Lot 200
T25-13-04/309702/Lot 100
T25-13-04/309801/Lot 400

003931
AFTER RECORDING
RETURN TO
Ticor Title Company
300 West Anderson Ave. - Box 1075
Coos Bay, OR 97420-0233

STATUTORY SPECIAL WARRANTY DEED
(Mill Site)

Weyerhaeuser NR Company, a Washington corporation ("Grantor"), located at 33663 Weyerhaeuser Way South, Federal Way, Washington 98003, conveys and specially warrants to FORT CHICAGO HOLDINGS II U.S. LLC, a Delaware limited liability company ("Grantee"), with a mailing address of 125 W Central Avenue, Suite 380, Coos Bay, Oregon 97420, the following described real property:

The real property described in Exhibit "A" attached hereto (the "Property").

CONSIDERATION: The true consideration for this conveyance consists of other property or value given or promised, which is either part or the whole consideration.

This conveyance is made by Grantor and accepted by Grantee subject to those liens, encumbrances and other exceptions to title set forth in Exhibit "B" attached hereto.

Grantor reserves from this conveyance all geothermal steam and heat and subsurface oil, gas and minerals which are not contained in the surface estate (if any) of the property conveyed hereby (the "Reserved Minerals"). Any oil, gas, minerals, or other deposits situated within 100 feet of the surface elevation of the Property (if any) which are recoverable by surface mining, strip mining, excavation, quarrying or similar means such as sand, gravel, granite, salt and coal shall be deemed to be included in the "surface estate" of the Property and not included in the "Reserved Minerals". This reservation of the Reserved Minerals is subject to the following right of first refusal and waiver of surface rights:

1. Grantor, for itself and any subsequent owner of the Reserved Minerals, forever waives and relinquishes all of its rights to use the surface of the Property (if any) for the purposes of exploring, mining, drilling for, producing, storing, transporting, laying pipeline for or otherwise developing or realizing on the Reserved Minerals; provided, however, that

nothing contained herein shall be construed as prohibiting Grantor, or its successors or assigns, from:

- (i) Including the Property, or any portion thereof, within any units formed to develop the Reserved Minerals by production or development activities undertaken outside the boundaries of the Property;
- (ii) Directionally deviating the bore hole of any oil or gas well or wells drilled by Grantor or its successors or assigns from the surface of any lands other than in the Property so as to cause such well or wells to cross under, be bottomed under or produce oil and gas or other minerals from the Property;
- (iii) Developing or realizing upon the Reserved Minerals by means of any other operation that does not interfere with or require the use of the surface estate of the Property; or
- (iv) Developing or realizing on the Reserved Minerals from the surface estate of any portion of the Property with respect to which Grantor acquires fee simple ownership.

2. Grantor hereby grants Grantee a preferential right of first refusal to acquire the Reserved Minerals. If Grantor desires to sell, lease or assign the Reserved Minerals or any interest therein, then Grantor shall provide Grantee with a copy of the proposed purchase agreement, lease or assignment (the "Offer") and Grantee shall have a period of 30 days from receipt of the Offer to determine whether Grantee elects to exercise its preferential right to purchase the Reserved Minerals offered for sale, lease or assignment pursuant to the Offer. If Grantee elects to exercise its right of first refusal, then the conveyance or other transfer of the Reserved Minerals covered by the Offer shall be made to Grantee on the terms specified in the Offer within the time period specified in the Offer, but not earlier than 90 days after exercise of the right of first refusal. If Grantee declines to exercise its right of first refusal, then Grantor shall be free to complete the transaction in accordance with the terms of the Offer. If the transaction contemplated by the Offer is not completed, then any subsequent offer to sell, lease or otherwise assign such portion of the Reserved Minerals or any other part of the Reserved Minerals (as applicable), shall be subject to this right of first refusal.

Additionally, by its acceptance of this deed, Grantee agrees that if Grantee or any of its successors or assigns contracts with a third party, constructs or otherwise participates in or derives revenue from any wind power project or projects (collectively, the "Wind Power Projects") located upon any portion of the Property, Grantor shall have the right to share equally in all income received by the Grantee or its successors and assigns from the Wind Power Projects

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

Grantee, to the extent allowed by law, or anyone claiming by, through or under Grantee, hereby fully and irrevocably releases Grantor, and its agents and representatives, from all claims that it may now have or hereafter acquire against Grantor or its agents or representatives for any cost, loss, liability, damage, expense, action or cause of action, whether foreseen or unforeseen, arising from or related to any defects, errors or omissions on or in the Property, the presence of environmentally hazardous, toxic or dangerous substances, or any other conditions (whether patent or latent) affecting the Property. Grantee further acknowledges and agrees that this release shall be given full force and effect according to each of its expressed terms and provisions, including, but not limited to, those relating to unknown and suspected claims, damages and causes of action. As a material covenant and condition of this agreement, Grantee agrees that in the event of the discovery of any such defects, errors or omissions, the presence of environmentally hazardous, toxic or dangerous substances, or any other conditions affecting the Property, Grantee shall look solely to Grantor's predecessors in interest for any redress or relief, except for claims against Grantor based upon any obligations and liabilities of Grantor expressly provided in this deed or in the Agreement of Purchase and Sale and Option Agreement dated June 30, 2011, between Grantor, as seller, and Jordan Cove Energy Project L.P., a Delaware limited partnership, pursuant to which this deed is being executed by Grantor. This provision is specifically bargained for and represents a material part of Grantor's consideration for this conveyance. Nothing contained in this

paragraph shall be deemed to limit, affect or diminish the warranties of title undertaken by Grantor with respect to the Property pursuant to this deed.

[Signature contained on the following page]

Dated effective this 14th day of December, 2012.

GRANTOR:

WEYERHAEUSER NR COMPANY, a
Washington corporation

By: [Signature]

Name: Sandy D. McCade

Its: Senior Vice President

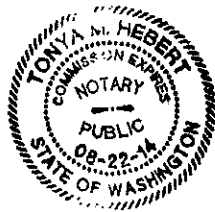
By: [Signature]

Name: Corrin Crawford

Its: Assistant Secretary

STATE OF Washington)
COUNTY OF King)

This instrument was acknowledged before me on December 12, 2012, by
Sandy D. McCade and Corrin Crawford, as Senior Vice President and
Assistant Secretary of Weyerhaeuser NR Company, a Washington corporation.



[Signature]
NOTARY PUBLIC FOR Washington
My Commission Expires: 8-22-2014

EXHIBIT A
(Real Property)

MILL SITE

PARCEL 6 (MILL SITE):

All that portion of Government Lot 2 in Section 3, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, lying East of the Oregon International Port of Coos Bay Railroad right of way as described per Deed Instrument 2010-11360, Deed Records of Coos County, Oregon.

ALSO: That portion of the "Old" Jordan Cove Road right of way in said Section 3 lying 30 feet Southerly and 70 feet Northerly of the following described line: (Description is based on Deed Bearing Microfilm Reel No. 67-10-22858, Records of Coos County, Oregon): Commencing at the Northwest corner of Section 3, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon; thence South 333.80 feet along the West boundary of said Section 3; thence North 87° 59' 45" East 130 feet, more or less, to the Southerly right of way boundary of the Transpacific Parkway, said point being the True Point of Beginning, said portion of Jordan Cove road to be vacated is a strip of land located 70 feet Northerly and 30 feet Southerly of the following described line: thence South 87° 59' 45" West 130 feet, more or less, to the West boundary of said Section 3; thence South 88° 00' 00" West 901.90 feet; thence on a 1° curve right through an angle of 2° 30' 00" of a distance of 250 feet; thence North 89° 30' 00" West 819.50 feet; thence on a 10° curve left through an angle of 47° 34' 15" a distance of 475.00 feet, more or less, to the Easterly right of way boundary of the relocated Jordan Cove County Road.

EXCEPTING THEREFROM: A strip of land 150.00 feet wide lying equally 75 feet on each side of the described centerline, described in Deeds and Records of Coos County, Oregon, Volume 283, Page 317.

ALSO EXCEPTING THEREFROM: A right of way for a county road deeded on June 14, 1961 to Coos County, Oregon; Bearings and Distances per Statutory Quit Claim Deed 2010-917, Deed Records of Coos County.

PARCEL 7 (MILL SITE):

All that portion of Government Lot 2 in Section 3, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, lying West of the Oregon International Port of Coos Bay Railroad right of way as described per Deed Instrument 2010-11360, Deed Records of Coos County, Oregon.

ALSO: That portion of the "Old" Jordan Cove Road right of way in said Section 3 lying 30 feet Southerly and 70 feet Northerly of the following described line: (Description is based on Deed Bearing Microfilm Reel No. 67-10-22858, Records of Coos County, Oregon): Commencing at the Northwest corner of Section 3, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon; thence South 333.80 feet along the West boundary of said Section 3; thence North 87° 59' 45" East 130 feet, more or less, to the Southerly right of way boundary of the Transpacific Parkway, said point being the True Point of Beginning; said portion of Jordan Cove road to be vacated is a strip of land located 70 feet Northerly and 30 feet Southerly of the following described line: thence South 87° 59' 45" West 130 feet, more or less, to the West boundary of said Section 3; thence South 88° 00' 00" West 901.90 feet; thence on a 1° curve right through an angle of 2° 30' 00" of a distance of 250 feet; thence North 89° 30' 00" West 819.50 feet; thence on a 10° curve left through an angle of 47° 34' 16" a distance of 475.00 feet, more or less, to the Easterly right of way boundary of the relocated Jordan Cove County Road.

EXCEPTING THEREFROM: A strip of land 150.00 feet wide lying equally 75 feet on each side of the described centerline, as described in Deed Records of Coos County, Oregon, Volume 283, Page 317.

ALSO EXCEPTING THEREFROM: A right of way for a county road deeded on June 14, 1961 in Coos County, Oregon.

Bearings and Distances per Statutory Quit Claim Deed 2010-817, Deed Records of Coos County.

PARCEL 8 (MILL SITE):

All that land located in Section 4, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, described as follows: Government Lots 1 and 2.

ALSO: That portion of the "Old" Jordan Cove Road right of way in said Section 4 lying 30 feet Southerly and 70 feet Northerly of the following described line: (Description is based on Deed Bearing Microfilm Reel No. 67-10-22858, Records of Coos County, Oregon): Commencing at the Northwest corner of Section 3, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon; thence South 333.80 feet along the West boundary of said Section 3; thence North 87° 59' 45" East 130 feet, more or less, to the Southerly right of way boundary of the Transpacific Parkway, said point being the True Point of Beginning; thence South 87° 59' 45" West 130 feet, more or less, to the West boundary of said Section 3; thence South 88° 00' 00" West 901.90 feet; thence on a 1° curve right through an angle of 2° 30' 00" of a distance of 250 feet; thence North 89° 30' 00" West 819.50 feet; thence on a 10° curve left through an angle of 47° 34' 15" a distance of 475.00 feet, more or less, to the Easterly right of way boundary of the relocated Jordan Cove County Road.

Bearings and Distances per Statutory Quit Claim Deed 2010-817, Deed Records of Coos County.

EXCEPTING THEREFROM: A strip of land 150.00 feet wide lying 75 feet on each side of the described centerline, as described in Deed Records of Coos County, Oregon, Volume 283, Page 317.

SAVE AND EXCEPT FROM THE ABOVE PARCELS ANY PORTION LYING OR BEING within the Statutory Quit Claim Deed (Tidelands) conveyed from Weyerhaeuser NR Company, a Washington corporation to Oregon International Port of Coos Bay, a municipal corporation of the State of Oregon by Deed recorded August 15, 2011 bearing Microfilm Reel No. 2011-6550, Records Coos County, Oregon.

PARCEL 9: (T25-13-04 Tax Lot 400)

That portion of the tidelands fronting Government Lot 3 of Section 4, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, described as follows: Beginning at a point which is 130 feet East of the center Quarter corner of said Section 4; thence North 00° 11' 02" East 863.69 feet; thence 820.00 feet East; thence South 00° 11' 02" West 863.69 feet; thence West 820.00 feet to the point of beginning.

It being the Intent of Grantor to convey to Grantee all right, title and interest in and to the real estate acquired by Grantor pursuant to that certain Statutory Quitclaim Deed dated January 1, 2009, recorded January 28, 2010, #2010-917, described therein as Parcels 1 and 2, **LESS AND EXCEPT** those portions thereof previously conveyed by Grantor and described in that certain deed recorded August 15, 2011, Auditor's #2011-6550.

EXHIBIT B

(Permitted Exceptions)

1. The Property has been classified as Forest, as disclosed by the tax roll. If the Property becomes disqualified, said Property may be subject to additional taxes and/or penalties.
2. The Property lies within the Coos Bay Urban Renewal Area and is subject to the terms and provisions thereof.
3. Rights of the public to any portion of the Property lying within the area commonly known as public streets, roads, alley, highways.
4. Any adverse claim based upon the assertion that:
 - a) Some portion of said Property is tide or submerged Property, or has been created by artificial means or has accreted to such portion so created.
 - b) Some portion of said Property has been brought within the boundaries thereof by an avulsive movement of Coos Bay or has been formed by accretion to any such portion.
5. Any adverse claim based upon the assertion that some portion of said Property is tide or submerged land, or has been created by artificial means or has accreted to such portion so created.

Affects: Coos Bay

6. Rights and easements for navigation and fishery which may exist over that portion of said Property lying beneath the waters of Coos Bay.
7. The rights of the public and governmental bodies for fishing, navigation and commerce in and to any portion of the Property herein described, lying below the high water line of the Coos Bay. The right, title and interest of the State of Oregon in and to any portion lying below the high water line of Coos Bay.
8. Easement(s) for the purpose(s) shown below and rights incidental thereto as reserved in a document;

Reserved by: Port of Coos Bay, Oregon, a municipal corporation
Recording Date: September 19, 1960
Recording No: Book 280 Page 737 Deed Records
Affects: Section 4

9. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Coos County, a political subdivision of the State of Oregon
Recording Date: December 16, 1960
Recording No: Book 282 Page 407 Deed Records
Affects: Section 3

10. Any interest in any oil, gas and/or minerals, as disclosed by document

Entitled: Deed
Recording Date: February 14, 1961
Recording No: Book 283 Page 317 Deed Records
Affects: Section 3

The present ownership or any other matters affecting said oil, gas and/or minerals are not shown herein.

11. Any rights incidental to the ownership and development of the mineral interest excepted or reserved in the document

Entitled: Deed
Recording Date: February 14, 1961
Recording No: Book 283 Page 317 Deed Records
Affects: Section 3

12. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: United States of America
Recording Date: October 20, 1965
Recording No: 65-10-2506
Affects: Sections 3 and 4

13. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Pacific Power & Light Company
Purpose: utilities
Recording Date: February 15, 1968
Recording No: 68-02-25885

14. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: City of Coos Bay and the City of North Bend
Recording Date: August 9, 1968
Recording No: 68-08-31035
Affects: Sections 3 and 4

15. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: City of Coos Bay and City of North Bend
Purpose:
Recording Date: August 9, 1968
Recording No: 68-08-31039
Affects: Sections 3 and 4

16. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: City of Coos Bay and City of North Bend
Recording Date: August 9, 1968
Recording No: 68-08-31042
Affects: Section 3

17. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Roseburg Lumber Co., an Oregon corporation
Purpose: railroad and roadway
Recording Date: March 25, 1974
Recording No: 74-03-97787
Affects: Sections 3 and 4

18. Agreement Easement Agreement

Executed by: Menasha Corporation and Roseburg Lumber Company
Recording Date: August 15, 1974
Recording No.: 74-08-103495
Affects: Section 4

19. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Port of Coos Bay, Oregon

Purpose:

Recording Date: July 23, 1975

Recording No: 75-07-116571

Affects: Section 3

20. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Coos Bay-North Bend Water Board, municipal corporations

Recording Date: January 11, 1984

Recording No: 84-1-6715

Affects: Section 3

21. Right of Way

Between: United States Department of the Interior, Bureau of Property Management and Port of Coos Bay, dba Oregon International Port of Coos Bay

Recording Date: June 29, 1984

Recording No.: 84-3-6986A Amended by Amendment No. 1

Recording Date: April 12, 1985

Recording No.: 85-2-4500

Terms and provisions of Assignment of Right of Way Permit or Grant

Recording Date: November 21, 1990

Recording No.: 90-11-0789

22. Right of Way

Between: United States Department of the Interior, Bureau of Property Management and Port of Coos Bay dba Oregon International Port of Coos Bay

Recording Date: April 12, 1985

Recording No.: 85-2-4502

23. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Pacificorp dba Pacific Power & Light Company, a corporation

Purpose: utilities

Recording Date: December 9, 1985

Recording No: 85-5-6435

Affects: Section 3

24. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Oregon International Port of Coos Bay, a municipal corporation
Recording Date: August 22, 1988
Recording No: 88-08-1424
Affects: Section 4

25. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Pacificorp dba Pacific Power & Light Company, a corporation
Recording Date: August 2, 1989
Recording No: 89-08-0197
Affects: Section 3

26. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Pacific Power & Light Company, a corporation
Purpose: utilities
Recording Date: June 21, 1990
Recording No: 90-06-1346
Affects: Section 4

27. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Pacific Power & Light Company, a corporation
Purpose: utilities
Recording Date: June 21, 1990
Recording No: 90-06-1348
Affects: Section 4

28. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Reserved for: public by Order
Purpose: public utilities
Recording Date: August 25, 1997
Recording No: 97-08-1070
Affects: Section 3

29. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Roseburg Forest Products Purpose: right of way, railroad and roadway Recording Date: April 20, 1998
Recording No: 98-04-0927
Affects: Section 4

30. Agreement Easement, Reservation and Maintenance Agreement

Executed by: Oregon International Port of Coos Bay and Weyerhaeuser Company, a Washington corporation.
Recording Date: January 18, 2006
Recording No.: 2006-768

31. Terms and provisions of Covenants, conditions and restrictions but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth in the document

Recording Date: December 20, 2006
Recording No: 2006-17085

32. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: International Port of Coos Bay
Purpose: Construction, reconstruction, use and maintenance of road for ingress and egress
Recording Date: September 15, 2009
Recording No: 2009-9373

-END OF DOCUMENT-

After recording return to:

~~Perkins Coie LLP
1120 NW Couch St., 10th fl.
Portland, Oregon 97209
Attn: Andrew H. Solomon~~

**AFTER RECORDING
RETURN TO
Amerititle**

ATTN: JANICE Blohm
1495 NW Garden Valley Blvd.
Roseburg, OR 97471

GRANTOR:

ROSEBURG RESOURCES CO.,
an Oregon corporation

GRANTEE:

FORT CHICAGO HOLDINGS II U.S. LLC,
a Delaware limited liability company

This space reserved for recorder's use.

COOS COUNTY, OREGON

2015-00377

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Terri L. Turi, Coos County Clerk

Until a change is requested, all tax statements shall
be sent to Grantee at the following address:

Fort Chicago Holdings II U.S. LLC,
c/o Jordan Cove Energy Project L.P.,
125 W. Central Avenue, Suite 250
Coos Bay, OR 97420

STATUTORY SPECIAL WARRANTY DEED

ROSEBURG RESOURCES CO., an Oregon corporation ("Grantor"), conveys and specially warrants to FORT CHICAGO HOLDINGS II U.S. LLC, a Delaware limited liability company ("Grantee"), the real property in Coos County, Oregon, more particularly described on Exhibit A attached hereto and by this reference incorporated herein, free of encumbrances created or suffered by the Grantor, except for those encumbrances set forth on Exhibit B, attached hereto and by this reference incorporated herein.

The true consideration for this conveyance in terms of dollars is \$1,100,000.00, paid to an accomodator in an IRC §1031 like kind exchange.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

DATED: January 13, 2015

ROSEBURG RESOURCES CO.,
an Oregon corporation

By: [Signature]
Name: P. Martin Daley
Its: VP & CFO

STATE OF OREGON)
) ss.
COUNTY OF Douglas)

The foregoing instrument was acknowledged before me this 13 day of January, 2015, by Marty Daley, as VP Finance & CFO of ROSEBURG RESOURCES CO., an Oregon corporation.

[Signature]
Notary Public for Oregon
My commission expires: April 21, 2018



EXHIBIT A

Legal Description

A tract of land in Section 9, Township 28 South, Range 14 West, Willamette Meridian, Coos County, Oregon, described as follows:

The NE $\frac{1}{4}$ NW $\frac{1}{4}$ and the NW $\frac{1}{4}$ NW $\frac{1}{4}$

EXCEPT: Beginning at the Section corner to Sections 4, 5, 8 and 9, Township 28 South, Range 14 West, Willamette Meridian; thence East along the North line of Section 9 a distance of 300 feet; thence South 700 feet; thence West 300 feet to the West line of Section 9; thence North along the West line of Section 9 to the Northwest corner of said Section, a distance of 700 feet.

ALSO: The SW $\frac{1}{4}$ NW $\frac{1}{4}$ and that portion of the SE $\frac{1}{4}$ NW $\frac{1}{4}$ and the NE $\frac{1}{4}$ SW $\frac{1}{4}$ lying North of the North Bank Market Road

EXCEPT: Beginning at the intersection of the centerline running North and South through said Section 9 with the North line of the North Bank Market Road as presently located; thence North along said centerline 623 feet to a point; thence South 28° West 1324 feet; more or less, to the North line of the North Bank Market Road; thence following the North line of the North Bank Market Road in a Northeasterly direction to its intersection with the East line of the SE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 9.

ALSO: The NW $\frac{1}{4}$ SW $\frac{1}{4}$ lying North of the North Bank Market Road

EXCEPT: Beginning at a point on the Section line between Sections 8 and 9, Township 28 South, Range 14 West, Willamette Meridian, said point being South 0° 31' West 518.38 feet of the West one-quarter corner of Section 9; thence North 79° 07' East 350.84 feet to an iron rod; thence North 86° 44' East 252.20 feet; thence North 80° 27' East 228.72 feet; thence South 27° 31' East 337.79; thence South 59° 48' West along the North Bank Market Road, 98.57 feet; thence continuing along the North Bank Market Road South 66° 04' West 983.61 feet, more or less, to an intersection with the West line of Section 9; thence North 0° 31' East 630.41 feet to the point of beginning.

EXCEPT all minerals reserved in deed recorded August 2, 1945, in Book 157, Page 138, records of Coos County, Oregon.

EXCEPT all minerals and mineral rights as reserved in deed recorded August 26, 1986, bearing Microfilm Reel Number 86-4-5633, records of Coos County, Oregon.

EXHIBIT B

Permitted Encumbrances

Possible additional taxes and penalties if the premises are disqualified for assessment on the basis of the forest use, based on actions or omissions occurring after the delivery of this deed.

Rights of the public in and to that portion of the premises lying within roads and highways.

Reservation of 60' right of way, oil and mineral rights, including the terms and provisions contained therein, in deed from Coos County, a body politic, corporate of the State of Oregon.

Recorded: August 2, 1945

Book: 157, Page 138

(Affects the NE 1/4 NW 1/4 of Section 9)

An easement including the terms and provisions thereof, affecting the portion of said premises and for the purposes stated therein as set forth in instrument:

In favor of: Stewart R. Cameron and Lorna G. Cameron

Recorded: September 25, 1984

Instrument No.: 84-4-3288

Matters as disclosed by survey shown as Exhibit A, on Instrument

Recorded: September 25, 1984

Instrument No.: 84-4-3288

In favor of: Stewart R. Cameron and Lorna G. Cameron

Reservation of oil, gas, and mineral rights, including the terms and provisions contained therein, in instrument,

Recorded: August 26, 1986

Instrument No.: 86-4-5633

Reservations in federal patents and acts authorizing the same.

Encroachments and boundary discrepancies that would be discovered by a survey or physical inspection of the Property.

END

003924

AFTER RECORDING
RETURN TO

Ticor Title Insurance
300 West Anderson Ave - Box 1075
Coos Bay, OR 97420-0233

AFTER RECORDING RETURN TO:

Greg Fullem
Schwabe, Williamson & Wyatt, P.C.
1211 SW Fifth Ave., Suite 2000
Portland, OR 97204

UNTIL A CHANGE IS REQUESTED, ALL TAX
STATEMENTS SHALL BE SENT TO:

Jeff Bishop, Director
Oregon International Port of Coos Bay
P.O. Box 1215
Coos Bay, OR 97420

STATUTORY SPECIAL WARRANTY DEED

(Lagoon)

Weyerhaeuser NR Company, a Washington corporation ("Grantor"), conveys and specially warrants to Oregon International Port of Coos Bay, a municipal corporation of the State of Oregon ("Grantee"), the following described real property:

The real property described in Exhibit "A" attached hereto (the "Property").

This conveyance is made by Grantor and accepted by Grantee subject to those liens, encumbrances and other exceptions to title set forth in Exhibit "B" attached hereto.

Grantor reserves from this conveyance all geothermal steam and heat and subsurface oil, gas and minerals which are not contained in the surface estate (if any) of the property conveyed hereby (the "Reserved Minerals"). Any oil, gas, minerals, or other deposits situated within 100 feet of the surface elevation of the Property (if any) which are recoverable by surface mining, strip mining, excavation, quarrying or similar means such as sand, gravel, granite, salt and coal shall be deemed to be included in the "surface estate" of the Property and not included in the "Reserved Minerals". This reservation of the Reserved Minerals is subject to the following right of first refusal and waiver of surface rights:

1. Grantor, for itself and any subsequent owner of the Reserved Minerals, forever waives and relinquishes all of its rights to use the surface of the Property (if any) for the purposes of exploring, mining, drilling for, producing, storing, transporting, laying pipeline for or otherwise developing or realizing on the Reserved Minerals; provided, however, that nothing contained herein shall be construed as prohibiting Grantor, or its successors or assigns, from:

1 - SPECIAL WARRANTY DEED

PDX/068485/144971/GDF/7533426.2

COOS COUNTY CLERK, OREGON
TERRI L. TURI, CCC, COUNTY CLERK
TOTAL \$71.00
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2011 6548

- (i) Including the Property, or any portion thereof, within any units formed to develop the Reserved Minerals by production or development activities undertaken outside the boundaries of the Property;
 - (ii) Directionally deviating the bore hole of any oil or gas well or wells drilled by Grantor or its successors or assigns from the surface of any lands other than in the Property so as to cause such well or wells to cross under, be bottomed under or produce oil and gas or other minerals from the Property;
 - (iii) Developing or realizing upon the Reserved Minerals by means of any other operation that does not interfere with or require the use of the surface estate of the Property; or
 - (iv) Developing or realizing on the Reserved Minerals from the surface estate of any portion of the Property with respect to which Grantor acquires fee simple ownership.
2. Grantor hereby grants Grantee a preferential right of first refusal to acquire the Reserved Minerals. If Grantor desires to sell, lease or assign the Reserved Minerals or any interest therein, then Grantor shall provide Grantee with a copy of the proposed purchase agreement, lease or assignment (the "Offer") and Grantee shall have a period of 30 days from receipt of the Offer to determine whether Grantee elects to exercise its preferential right to purchase the Reserved Minerals offered for sale, lease or assignment pursuant to the Offer. If Grantee elects to exercise its right of first refusal, then the conveyance or other transfer of the Reserved Minerals covered by the Offer shall be made to Grantee on the terms specified in the Offer within the time period specified in the Offer, but not earlier than 90 days after exercise of the right of first refusal. If Grantee declines to exercise its right of first refusal, then Grantor shall be free to complete the transaction in accordance with the terms of the Offer. If the transaction contemplated by the Offer is not completed, then any subsequent offer to sell, lease or otherwise assign such portion of the Reserved Minerals or any other part of the Reserved Minerals (as applicable), shall be subject to this right of first refusal.

Additionally, by its acceptance of this deed, Grantee agrees that if Grantee or any of its successors or assigns contracts with a third party, constructs or otherwise participates in or derives revenue from any wind power project or projects (collectively, the "Wind Power Projects") located upon any portion of the Property, Grantor shall have the right to share equally in all income received by the Grantee or its successors and assigns from the Wind Power Projects

The true consideration for this conveyance consists of other property or value given or promised, which is either part or the whole consideration.

1 - SPECIAL WARRANTY DEED
PDX/068485/144971/GDF/7533426.2

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009.

Grantee, to the extent allowed by law, or anyone claiming by, through or under Grantee, hereby fully and irrevocably releases Grantor, and its agents and representatives, from all claims that it may now have or hereafter acquire against Grantor or its agents or representatives for any cost, loss, liability, damage, expense, action or cause of action, whether foreseen or unforeseen, arising from or related to any defects, errors or omissions on or in the Property, the presence of environmentally hazardous, toxic or dangerous substances, or any other conditions (whether patent or latent) affecting the Property. Grantee further acknowledges and agrees that this release shall be given full force and effect according to each of its expressed terms and provisions, including, but not limited to, those relating to unknown and suspected claims, damages and causes of action. As a material covenant and condition of this agreement, Grantee agrees that in the event of the discovery of any such defects, errors or omissions, the presence of environmentally hazardous, toxic or dangerous substances, or any other conditions affecting the Property, Grantee shall look solely to Grantor's predecessors in interest for any redress or relief, except for claims against Grantor based upon any obligations and liabilities of Grantor expressly provided in this deed or in the Agreement of Purchase and Sale and Option Agreement dated June 30, 2011, between Grantor, as seller, and Jordan Cove Energy Project L.P., a Delaware limited partnership, pursuant to which this deed is being executed by Grantor. This provision is specifically bargained for and represents a material part of Grantor's consideration for this conveyance. Nothing contained in this paragraph shall be deemed to limit, affect or diminish the warranties of title undertaken by Grantor with respect to the Property pursuant to this deed

[Signature contained on following page]

2 - SPECIAL WARRANTY DEED
PDX/068485/144971/GDF/7533426.2

COOS COUNTY CLERK, OREGON
TERRI L. TURI, CCC, COUNTY CLERK
TOTAL \$71.00
11/15/2011 04:12:20PM

08/15/2011 04:12:20PM
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A circular seal with a dotted border. The text "NEYERHAUSER NR COMPANY" is curved along the top inner edge. "CORPORATE" is curved along the top inner edge, below the company name. "SEAL" is in the center. "2008" is curved along the bottom inner edge. "WASHINGTON" is curved along the bottom inner edge, below the year.

By: _____

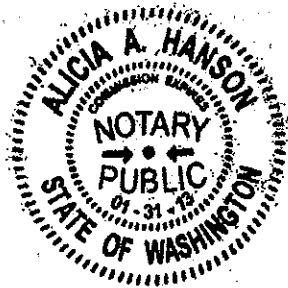
Paul W. Leuzzi

Attest:

Peggy Hebblethwaite

)SS.

On this 12th day of August, 2011, before me personally appeared the within named Paul W. Leuzzi and Peggy Hebblethwaite who did acknowledge that they are the Chief Intellectual Property Counsel and Assistant Secretary, respectively, of Weyerhaeuser NR Company and that they have executed the within instrument freely and voluntarily and with the proper authority on behalf of Weyerhaeuser NR Company.



2011 6548

EXHIBIT A

(Real Property)

BLM Tract 37 of Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, more or less described as follows: Beginning at a point on the Section line between Sections 7 and 8 of Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, at a point that bears South 02° 32' 57" West 303.60 feet from the Northeast Corner of said Section 7; thence along said Section line South 02° 32' 57" West 1815.00 feet; thence leaving said Section line South 59° 53' 28" West 752.80 feet; thence South 56° 21' 45" West 1228.99 feet; thence South 80° 57' 43" West 578.95 feet; thence North 82° 02' 28" West 855.95 feet; thence South 48° 30' 21" West 976.27 feet; thence South 54° 06' 13" West 579.68 feet; thence South 83° 36' 02" West 864.07 feet; thence North 25° 19' 45" East 2273.96 feet; thence North 23° 36' 02" East 3354.17 feet; thence South 67° 36' 30" East 3156.25 feet to the point of beginning.

Bearings and distances based on Oregon State Plain NAD 83, South Zone.

1 - EXHIBIT A

PDX/068485/144971/GDF/7533426.2

COOS COUNTY CLERK, OREGON
TERRI L. TURI, CGC, COUNTY CLERK
TOTAL \$71.00

08/15/2011 04:12:20PM
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2011 6548

EXHIBIT B

(Permitted Exceptions)

1. Property taxes in an undetermined amount, which are a lien but not yet payable, including any assessments collected with taxes to be levied for the fiscal year 2011/2012.
2. The Property has been classified as Forest, as disclosed by the tax roll. If the Property becomes disqualified, the Property may be subject to additional taxes and/or penalties.
3. The Property lies within the Coos Bay Urban Renewal Area and is subject to the terms and provisions thereof.
4. Rights of the public to any portion of the Property lying within the area commonly known as public streets, roads, alley, highways.
5. Any adverse claim based upon the assertion that:
 - a) Some portion of said Property is tide or submerged land, or has been created by artificial means or has accreted to such portion so created.
 - b) Some portion of said Property has been brought within the boundaries thereof by an avulsive movement of Coos Bay or has been formed by accretion to any such portion.
6. Rights and easements for navigation and fishery which may exist over that portion of said Property lying beneath the waters of Coos Bay.
7. The rights of the public and governmental bodies for fishing, navigation and commerce in and to any portion of the Land herein described, lying below the high water line of the Coos Bay.

The right, title and interest of the State of Oregon in and to any portion lying below the high water line of Coos Bay.
8. Terms and Provisions of Order for Annexation of certain property to North Bay Rural Fire Protection District
Recording Date: June 5, 1980
Recording No.: 80-2-7187
Affects: Section 7
9. Right of Way
Between: United States Department of the Interior, Bureau of Land Management and Port of Coos Bay, dba Oregon International Port of Coos Bay
Recording Date: June 29, 1984
Recording No.: 84-3-6986A

1 - EXHIBIT B

PDX/068485/144971/GDF/7533426.2

Amended by Amendment No. 1
Recording Date: April 12, 1985
Recording No.: 85-2-4500

Terms and provisions of Assignment of Right of Way Permit or Grant
Recording Date: November 21, 1990
Recording No.: 90-11-0789

10. Right of Way
Between: United States Department of the Interior, Bureau of Land Management and
Port of Coos Bay dba Oregon International Port of Coos Bay
Recording Date: April 12, 1985
Recording No.: 85-2-4502
11. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a
document:
Granted to: Coos County
Purpose: public road
Recording Date: September 28, 1989
Recording No: 89-09-1696
Affects: Section 7
12. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a
document:
Granted to: Pacific Power & Light Company
Purpose: utilities
Recording Date: May 1, 1990
Recording No: 90-05-0066
13. Reservations set forth in Patent
~~Recording Date: November 12, 1997~~
Recording No.: 97-11-0392
Affects: Sections 6 and 7
14. Terms and provisions of Covenants, conditions and restrictions but omitting any
covenants or restrictions, if any, including but not limited to those based upon race, color,
religion, sex, sexual orientation, familial status, marital status, disability, handicap,
national origin, ancestry, or source of income, as set forth in applicable state or federal
laws, except to the extent that said covenant or restriction is permitted by applicable law,
as set forth in the document
Recording Date: December 20, 2006
Recording No: 2006-17085

2 - EXHIBIT B
PDX/068485/144971/GDF/7533426.2

COOS COUNTY CLERK, OREGON
TERRI L. TURI, CCC, COUNTY CLERK
TOTAL \$71.00
11/15/2011 04:12:28PM
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08/15/2011 04:12:28PM
PAGE 7 OF 7

2011 6548

AFTER RECORDING, RETURN TO:

Greg Fullem

Schwabe, Williamson & Wyatt, P.C.

1211 SW 5th Avenue, Suite 2000

Portland, Oregon 97204

UNTIL A CHANGE IS REQUESTED, ALL TAX
STATEMENTS SHALL BE SENT TO:

Oregon International Port of Coos Bay

Attention: Jeff Bishop

125 Central Avenue, Suite 300

PO Box 1215

Coos Bay OR 97420

003924
AFTER RECORDING
RETURN TO

Ticor Title Insurance
300 West Anderson Ave - Box 1075
Coos Bay, OR 97420-0233

STATUTORY QUITCLAIM DEED

(Tidelands)

Weyerhaeuser NR Company, a Washington corporation ("Grantor"), releases and quitclaims to Oregon International Port of Coos Bay, a municipal corporation of the State of Oregon ("Grantee"), all right, title and interest held by Grantor in and to the following described real property:

The real property described in Exhibit "A" attached hereto (the "Property").

The true consideration for this conveyance consists of other property or value given or promised, which is either part or the whole consideration.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11,

1 - STATUTORY QUITCLAIM DEED (TIDELANDS)

PDX/068485/144971/GDF/7730874.2

COOS COUNTY CLERK, OREGON
TERRI L. YURI, CCC, COUNTY CLERK
TOTAL \$81.00

08/15/2011 04:12:20PM
PAGE 1 OF 9

2011 6550

CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855,
OREGON LAWS 2009.

Dated this 12th day of August, 2011.



GRANTOR: **WEYERHAEUSER NR COMPANY,**
a Washington corporation

By: Paul W. Leuzzi

Paul W. Leuzzi

Title: Chief Intellectual Property Counsel

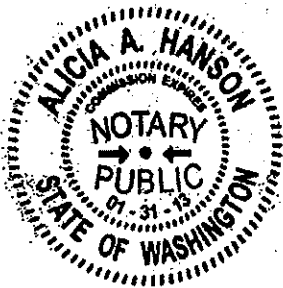
Attest: Peggy Hebblethwaite

Peggy Hebblethwaite

Title: Assistant Secretary

STATE OF WASHINGTON)
)ss.
COUNTY OF KING)

On this 12th day of August, 2011, before me personally appeared the within named Paul W. Leuzzi and Peggy Hebblethwaite who did acknowledge that they are the Chief Intellectual Property Counsel and Assistant Secretary, respectively, of Weyerhaeuser NR Company and that they have executed the within instrument freely and voluntarily and with the property authority on behalf of Weyerhaeuser NR Company.



Alicia A. Hanson
Alicia A. Hanson
Notary Public for the State of Washington
State of Washington Notary # 106641
My appointment expires: 01/31/2013

2 - STATUTORY QUITCLAIM DEED (TIDELANDS)
PDX/068485/144971/GDP/7730874.2

COOS COUNTY CLERK, OREGON
TERRI L. TURI, CCC, COUNTY CLERK
TOTAL \$81.00

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2011 6550

EXHIBIT A

(Property)

All tidelands (collectively, the "Tidelands") fronting and abutting the following described property:

A parcel of land located in Section 5 and the Northwest Quarter (NW1/4) of Section 4, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, more particularly described as follows:

Beginning at the intersection of the southerly right-of-way of the Transpacific Parkway and the East section line of Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, said point bearing South 02°33'09" West 100.33 feet from the Northeast corner of said Section 5, thence South 02°33'09" West 1205.42 feet along said east section line to the North 1/16 corner on the section line between said Section 5 and Section 4 of said Township 25 South, Range 13 West;

Thence along the North line of said Southwest Quarter (SW1/4) of the Northwest Quarter (NW1/4), South 87°18'05" East 1308.40 feet, more or less, to the Northwest Sixteenth (NW1/16) corner of said Section 4;

Thence along the East line of said Southwest Quarter (SW1/4) of the Northwest Quarter (NW1/4) South 02°22'23" West 454.76 feet, more or less, to a point lying 851 feet from the Center West Sixteenth (CW1/16) corner of said Section 4;

Thence North 87°25'18" West 1309.82 feet, more or less, to a point on the West line of said Section 4 lying 851 feet from the West Quarter (W1/4) corner of said Section 4;

Thence along the north line of Roseburg Parcel 2 per said Coos County Survey PB 11-95, North 87°33'57" West 891.07 feet to a 3/4 inch iron rod at the Northwest corner of said Parcel 2;

Thence along the West line of said Roseburg Parcel 2 South 02°29'23" West 805.12 feet to a 3/4 inch iron rod;

Thence along the east line of the Menasha Corporation Parcel 3 of said Coos County Survey South 02°31'39" West 1797.27 feet to a 3/4 inch iron rod;

Thence North 63°01'23" West 172.02 feet;

Thence North 1323.50 feet;

Thence West 1614.42 feet;

Thence North 1961.71 feet to the southerly right-of-way of Transpacific Parkway;

Thence along said right-of-way North 81°26'19" East 545.01 feet;

Thence along a 679.52 foot radius curve to the left through a central angle of 35°00'24" for a distance of 415.17 feet said curve having a chord of North 63°56'08" East 408.75 feet;

Thence North 46°25'56" East 372.50 feet;

Thence along a 1359.34 foot radius curve to the right through a central angle of 46°09'38" for a distance of 1095.16 feet said curve having a chord of North 69°30'45" East 1065.78 feet;

Thence South 87°24'26" East 672.58 feet to the point of beginning.

Basis of Bearing is Oregon State Plane NAD 83, South Zone.

1- EXHIBIT A

PDX/068485/144971/GDF/7730874.2

Thence South 54°06'13" West 579.68 feet;
Thence South 83°36'02" West 864.07 feet;
Thence North 25°19'45" East 2273.96 feet;
Thence North 23°36'02" East 3354.71 feet;
Thence South 67°36'30" East 3156.25 feet to the point of beginning.
Bearings and distances based on Oregon State Plain NAD 83, South Zone.

ALSO: The North One-Half (N1/2) of the Northeast Quarter (NE1/4); the Northeast Quarter (NE1/4) of the Northwest Quarter (NW1/4); the Southeast Quarter (SE1/4) of the Northwest Quarter (NW1/4); the Northeast Quarter (NE1/4) of the Southwest Quarter (SW1/4); the Southeast Quarter (SE1/4) of the Southwest Quarter (SW1/4); the Northwest Quarter (NW1/4) of the Southeast Quarter (SE1/4) and Government Lot 2, all in Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon.

EXCEPTING THEREFROM: A parcel of land located in Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, more particularly described as follows:

Beginning at the intersection of the southerly right-of-way of the Transpacific Parkway and the East section line of Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, said point bearing South 02°33'09" West 100.33 feet from the Northeast corner of said Section 5; thence South 02°33'09" West 1205.42 feet along said east section line to the North 1/16 corner on the section line between said Section 5 and Section 4 of said Township 25 South, Range 13 West;

Thence continuing along said east section line South 02°33'09" West 457.50 feet to the Northwest corner Roseburg Lumber Co. Parcel 1 per Coos County Survey PB 11-95;

Thence along the north line of Roseburg Parcel 2 per said Coos County Survey PB 11-95, North 87°33'57" West 891.07 feet to a 3/4 inch iron rod at the Northwest corner of said Parcel 2;

Thence along the West line of said Roseburg Parcel 2, South 02°29'23" West 805.12 feet to a 3/4 inch iron rod;

Thence along the east line of the Menasha Corporation Parcel 3 of said Coos County Survey South 02°31'39" West 1797.27 feet to a 3/4 inch iron rod;

Thence North 63°01'23" West 172.02 feet;

Thence North 1323.50 feet;

Thence West 1614.42 feet;

Thence North 1961.71 feet to the southerly right-of-way of Transpacific Parkway;

Thence along said right-of-way North 81°26'19" East 545.01 feet;

Thence along a 679.52 foot radius curve to the left through a central angle of 35°00'24" for a distance of 415.17 feet said curve having a chord of North 63°56'08" East 408.75 feet;

Thence North 46°25'56" East 372.50 feet;

Thence along a 1359.34 foot radius curve to the right through a central angle of 46°09'38" for a distance of 1095.16 feet said curve having a chord of North 69°30'45" East 1065.78 feet;

Thence South 87°24'26" East 672.58 feet to the point of beginning.

Basis of Bearing is Oregon State Plane NAD 83, South Zone.

3- EXHIBIT A

PDX/068485/144971/GDF/7730874.2

ALSO EXCEPTING THEREFROM: A parcel of land located in the Southeast Quarter (SE1/4) of Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, more particularly described as follows:

Beginning at a point that bears South 22°56'01" West 3172.79 feet from the Northeast Corner of said Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, thence South 1323.50 feet;

Thence South 63°01'23" East 172.02 feet;

Thence South 02°31'39" West 149.20 feet to the mean high water line of Coos Bay;

Thence along said high water line North 78°35'55" West 83.09 feet;

Thence North 84°18'34" West 133.24 feet,

Thence South 88°20'25" West 267.86 feet;

Thence South 62°12'18" West 90.32 feet;

Thence South 85°08'26" West 398.04 feet;

Thence South 65°30'31" West 235.50 feet;

Thence South 59°05'00" West 395.67 feet;

Thence South 55°57'24" West 34.47 feet;

Thence leaving said mean high water line North 19°31'12" East 325.89 feet;

Thence North 00°00'03" East 1617.61 feet;

Thence East 1284.99 feet to the point of beginning.

Basis of Bearing is Oregon State Plane NAD 83, South Zone

ALSO: The East Half (E1/2) of the Southwest Quarter (SW1/4) of Section 32, Township 24 South, Range 13 West of the Willamette Meridian, Coos County, Oregon.

ALSO: The Southwest Quarter (SW1/4) of the Northwest Quarter (NW1/4) and Northwest Quarter (NW1/4) of the Southwest Quarter (SW1/4) of Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon.

EXCEPTING THEREFROM: That real property conveyed to Coos Bay North Bend Water Board in Warranty Deed 84-1-06718 Deed Records of Coos County, Oregon.

ALSO: The Southwest Quarter (SW1/4) of the Southwest Quarter (SW1/4) of Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon.

ALSO: The Northwest Quarter (NW1/4) of the Northwest Quarter (NW1/4) and Government Lots 1 and 2 of Section 8, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, together with the tidelands fronting and abutting.

EXCEPTING THEREFROM: A parcel of land which is riparian on the Easterly boundary, lying in Government Lot 2 of Section 8, Township 25 South, Range 13 West of Willamette Meridian, Coos County, Oregon, described as follows: Beginning at the Quarter corner of Sections 7 and 8, said Township and Range, thence Easterly along the East/West centerline of said Section 8 a distance of 377.40 feet, more or less, to the record meander line;

4- EXHIBIT A

PDX/068485/144971/GDF/7730874.2

Thence North 37°30'00" East 585.00 feet along the record meander line;
Thence Westerly and parallel to said East/West centerline of Section 8 for a distance of 733.50 feet, more or less, to the section line between said Sections 7 and 8;
Thence Southerly along said Section line 464 feet, more or less to the point of beginning.
Bearings and Distances per Statutory Quit Claim Deed 2010-917, Deed Records of Coos County.

ALSO: All that portion of Government Lot 2 in Section 3, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, lying East of the Oregon International Port of Coos Bay Railroad right-of way as describe per Deed Instrument 2010-11360, Deed Records of Coos County, Oregon.

ALSO: That portion of the "Old" Jordan Cove Road right-of-way in said Section 3 lying 30 feet Southerly and 70 feet Northerly of the following described line: (Description is based on Deed Bearing Microfilm Reel No. 67-10-22858, Records of Coos County, Oregon): Commencing at the Northwest corner of Section 3, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, thence South 333.80 feet along the West boundary of said Section 3;

Thence North 87°59'45" East 130 feet, more or less, to the Southerly right-of-way boundary of the Transpacific Parkway, said point being the TRUE POINT OF BEGINNING;
Said portion of Jordon Cove Road to be vacated is a strip of land located 70 feet northerly and 30 feet southerly of the following described line:

Thence South 87°59'45" West 130 feet more or less to the West boundary of Said Section 3;

Thence South 88°00' 00" West 901.90 feet;

Thence on a 1 degree curve right through an angle of 2°30'00" of a distance of 250 feet;

Thence North 89°30'00" West 819.50 feet;

Thence on a 10 degree curve left through an angle of 47°34'15" a distance of 475.00 feet; more or less, to the easterly right of way boundary of the relocated Jordan Cove County Road.

EXCEPTING THEREFROM: A strip of land 150.00 feet wide lying equally 75 feet on each side of the described centerline, as described in Deeds and Records of Coos County, Oregon, Volume 283, Page 317.

ALSO EXCEPTING THEREFROM: A right-of-way for a county road deeded on June 14, 1961 to Coos County, Oregon;

Bearings and Distances per Statutory Quit Claim Deed 2010-917, Deed Records of Coos County.

ALSO: All that portion of Government Lot 2 in Section 3, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, lying West of the Oregon International Port of Coos Bay Railroad right-of way as describe per Deed Instrument 2010-11360, Deed Records of Coos County, Oregon;

ALSO: That portion of the "Old" Jordan Cove Road right-of-way in said Section 3 lying 30 feet Southerly and 70 feet Northerly of the following described line: (Description is based on Deed Bearing Microfilm Reel No. 67-10-22858, Records of Coos County, Oregon): Commencing at

5- EXHIBIT A

PDX/068485/144971/GDF/7730874.2

the Northwest corner of Section 3, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, thence South 333.80 feet along the West boundary of said Section 3;

Thence North 87°59'45" East 130 feet, more or less, to the Southerly right-of-way boundary of the Transpacific Parkway, said point being the TRUE POINT OF BEGINNING;

Said portion of Jordan Cove road to be vacated is a strip of land located 70 feet northerly and 30 feet southerly of the following described line:

Thence South 87°59'45" West 130 feet more or less to the West boundary of Said Section 3;

Thence South 88°00' 00" West 901.90 feet;

Thence on a 1 degree curve right through an angle of 2°30'00" of a distance of 250 feet;

Thence North 89°30'00" West 819.50 feet;

Thence on a 10 degree curve left through an angle of 47°34'15" a distance of 475.00 feet, more or less, to the easterly right of way boundary of the relocated Jordan Cove County Road.

EXCEPTING THEREFROM: A strip of land 150.000 feet wide lying equally 75 feet on each side of the described centerline, as described in Deed Records of Coos County, Oregon, Volume 283, Page 317.

ALSO EXCEPTING THEREFROM: A right-of-way for a county road deeded on June 14, 1961 to Coos County, Oregon;

Bearings and Distances per Statutory Quit Claim Deed 2010-917, Deed Records of Coos County.

ALSO: Government Lots 1 and 2 in Section 4, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon.

ALSO: That portion of the "Old" Jordan Cove Road right-of-way in said Section 4 lying 30 feet Southerly and 70 feet Northerly of the following described line: (Description is based on Deed Bearing Microfilm Reel No. 67-10-22858, Records of Coos County, Oregon): Commencing at the Northwest corner of Section 3, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon,

Thence South 333.80 along the West boundary of said Section 3;

Thence North 87°59'45" East 130 feet, more or less, to the Southerly right-of-way boundary of the Transpacific Parkway, said point being the TRUE POINT OF BEGINNING;

Thence South 87°59'45" West 130 feet more or less to the West boundary of Said Section 3;

Thence South 88°00' 00" West 901.90 feet;

Thence on a 1 degree curve right through an angle of 2°30'00" of a distance of 250 feet;

Thence North 89°30'00" West 819.50 feet;

Thence on a 10 degree curve left through an angle of 47°34'15" a distance of 475.00 feet, more or less, to the easterly right of way boundary of the relocated Jordan Cove County Road.

Bearings and Distances per Statutory Quit Claim Deed 2010-917, Deed Records of Coos County.

This Legal Description is meant to include all of the Tidelands conveyed from Weyerhaeuser West Coast, Inc., a Wisconsin corporation to Weyerhaeuser Company, a Washington corporation per Quitclaim Deed 83-3-7151, Deed Records of Coos County, Oregon, and all of the Tidelands

6- EXHIBIT A

PDX/068485/144971/GDE/7730874.2

conveyed from Weyerhaeuser Company, a Washington corporation to Weyerhaeuser NR Company, a Washington corporation per Statutory Quitclaim Deed 2010-917, Deed Records of Coos County, Oregon.

7- EXHIBIT A

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COOS COUNTY CLERK, OREGON
TERRI L. TURI, CCC, COUNTY CLERK
TOTAL \$81.00

08/15/2011 04:12:20PM
PAGE 9 OF 9

2011 6550

AFTER RECORDING RETURN TO:

Greg Fullem
Schwabe, Williamson & Wyatt, P.C.
1211 SW Fifth Ave., Suite 2000
Portland, OR 97204

**UNTIL A CHANGE IS REQUESTED,
ALL TAX STATEMENTS SHALL BE SENT TO:**

David Koch, CEO
Oregon International Port of Coos Bay
P.O. Box 1215
Coos Bay, OR 97420

TAX ACCOUNT NUMBERS:

T24-13-32/Account 185300/Lot 200
T25-13-00/Account 310200/Lot 00200
T25-13-05/Account 99916836/Lot 00300

003926
AFTER RECORDING
RETURN TO

Ticor Title Company
300 West Anderson Ave. - Box 1075
Coos Bay, OR 97420-0233

STATUTORY SPECIAL WARRANTY DEED

(Henderson Ranch)

Weyerhaeuser NR Company, a Washington corporation ("Grantor"), located at 33663 Weyerhaeuser Way South, Federal Way, Washington 98003 conveys and specially warrants to Oregon International Port of Coos Bay, a municipal corporation of the State of Oregon ("Grantee"), with a mailing address of P.O. Box 1215, Coos Bay, Oregon 97420 the following described real property:

The real property described in Exhibit "A" attached hereto (the "Property").

This conveyance is made by Grantor and accepted by Grantee subject to those liens, encumbrances and other exceptions to title set forth in Exhibit "B" attached hereto.

Consideration: The true consideration for this conveyance consists of other property or value given or promised, which is either part or the whole consideration.

Grantor reserves from this conveyance all geothermal steam and heat and subsurface oil, gas and minerals which are not contained in the surface estate (if any) of the Property conveyed hereby (the "Reserved Minerals"). Any oil, gas, minerals, or other deposits situated within 100 feet of the surface elevation of the Property (if any) which are recoverable by surface mining, strip mining, excavation, quarrying or similar means such as sand, gravel, granite, salt and coal shall be deemed to be included in the "surface estate" of the Property and not included in the "Reserved Minerals". This reservation of the Reserved Minerals is subject

to the following right of first refusal and waiver of surface rights:

1. Grantor, for itself and any subsequent owner of the Reserved Minerals, forever waives and relinquishes all of its rights to use the surface of the Property (if any) for the purposes of exploring, mining, drilling for, producing, storing, transporting, laying pipeline for or otherwise developing or realizing on the Reserved Minerals; provided, however, that nothing contained herein shall be construed as prohibiting Grantor, or its successors or assigns, from:

(i) Including the Property, or any portion thereof, within any units formed to develop the Reserved Minerals by production or development activities undertaken outside the boundaries of the Property;

(ii) Directionally deviating the bore hole of any oil or gas well or wells drilled by Grantor or its successors or assigns from the surface of any lands other than in the Property so as to cause such well or wells to cross under, be bottomed under or produce oil and gas or other minerals from the Property;

(iii) Developing or realizing upon the Reserved Minerals by means of any other operation that does not interfere with or require the use of the surface estate of the Property; or

(iv) Developing or realizing on the Reserved Minerals from the surface estate of any portion of the Property with respect to which Grantor acquires fee simple ownership.

2. Grantor hereby grants Grantee a preferential right of first refusal to acquire the Reserved Minerals. If Grantor desires to sell, lease or assign the Reserved Minerals or any interest therein, then Grantor shall provide Grantee with a copy of the proposed purchase agreement, lease or assignment (the "Offer") and Grantee shall have a period of 30 days from receipt of the Offer to determine whether Grantee elects to exercise its preferential right to purchase the Reserved Minerals offered for sale, lease or assignment pursuant to the Offer. If Grantee elects to exercise its right of first refusal, then the conveyance or other transfer of the Reserved Minerals covered by the Offer shall be made to Grantee on the terms specified in the Offer within the time period specified in the Offer, but not earlier than 90 days after exercise of the right of first refusal. If Grantee declines to exercise its right of first refusal, then Grantor shall be free to complete the transaction in accordance with the terms of the Offer. If the transaction contemplated by the Offer is not completed, then any subsequent offer to sell, lease or otherwise assign such portion of the Reserved Minerals or any other part of the Reserved Minerals (as applicable), shall be subject to this right of first refusal.

Additionally, by its acceptance of this deed, Grantee agrees that if Grantee or any of its successors or assigns contracts with a third party, constructs or otherwise participates in or derives revenue from any wind power project or projects (collectively, the "Wind Power Projects") located upon any portion of the Property, Grantor shall have the right to share equally in all income received by the Grantee or its successors and assigns from the Wind Power Projects.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

Grantee, to the extent allowed by law, or anyone claiming by, through or under Grantee, hereby fully and irrevocably releases Grantor, and its agents and representatives, from all claims that it may now have or hereafter acquire against Grantor or its agents or representatives for any cost, loss, liability, damage, expense, action or cause of action, whether foreseen or unforeseen, arising from or related to any defects, errors or omissions on or in the Property, the presence of environmentally hazardous, toxic or dangerous substances, or any other conditions (whether patent or latent) affecting the Property. Grantee further acknowledges and agrees that this release shall be given full force and effect according to each of its expressed terms and provisions, including, but not limited to, those relating to unknown and suspected claims, damages and causes of action. As a material covenant and condition of this agreement, Grantee agrees that in the event of the discovery of any such defects, errors or omissions, the presence of environmentally hazardous, toxic or dangerous substances, or any other conditions affecting the Property, Grantee shall look solely to Grantor's predecessors in interest for any redress or relief, except for claims against Grantor based upon any obligations and liabilities of Grantor expressly provided in

this deed or in the Agreement of Purchase and Sale and Option Agreement dated June 30, 2011, between Grantor, as seller, and Jordan Cove Energy Project L.P., a Delaware limited partnership, pursuant to which this deed is being executed by Grantor. This provision is specifically bargained for and represents a material part of Grantor's consideration for this conveyance. Nothing contained in this paragraph shall be deemed to limit, affect or diminish the warranties of title undertaken by Grantor with respect to the Property pursuant to this deed.

[Signature on following page]

Dated effective this 14th day of Dec, 2012.

GRANTOR:

WEYERHAEUSER NR COMPANY, a
Washington corporation

By: [Signature]

Name: Sandy O. McDade

Its: Senior Vice President

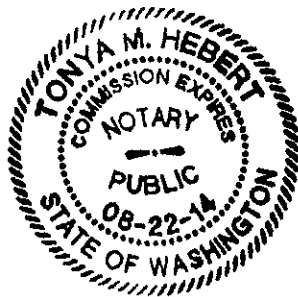
By: [Signature]

Name: Corrin Crawford

Its: Assistant Secretary

STATE OF Washington)
COUNTY OF King)

This instrument was acknowledged before me on December 12, 2012, by
Sandy O. McDade and Corrin Crawford, as Senior Vice President and
assistant secretary of Weyerhaeuser NR Company, a Washington corporation.



[Signature]
NOTARY PUBLIC FOR Washington
My Commission Expires: 8-22-2014

EXHIBIT A
(Real Property)

PARCEL 1 (HENDERSON RANCH):

The North 1/2 of the NE 1/4; the NE 1/4 of the NW 1/4; the SE 1/4 of the NW 1/4; the NE 1/4 of the SW 1/4; the SE 1/4 of the SW 1/4; the NW 1/4 of the SE 1/4 and Government Lot 2, all in Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon.

EXCEPTING THEREFROM: A parcel of land located in Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, more particularly described as follows: Beginning at the intersection of the Southerly right of way of the Transpacific Parkway and the East Section line of Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, said point bearing South 02° 33' 09" West 100.33 feet from the Northeast corner of said Section 5; thence South 02° 33' 09" West 1205.42 feet along said East Section line to the North 1/16 corner on the Section line between said Section 5 and Section 4 of said Township 25 South, Range 13 West; thence continuing along said East Section line South 02° 33' 09" West 457.50 feet to the Northwest corner Roseburg Lumber Co. Parcel 1 per Coos County Survey PB 11-95; thence along the North line of Roseburg Parcel 2 per said Coos County Survey PB 11-95, North 87° 33' 57" West 891.07 feet to a 3/4 inch iron rod at the Northwest corner of said Parcel 2; thence along the West line of said Roseburg Parcel 2, South 02° 29' 23" West 805.12 feet to a 3/4 inch iron rod; thence along the East line of the Menasha Corporation Parcel 3 of said Coos County Survey South 02° 31' 39" West 1797.27 feet to a 3/4 inch iron rod; thence North 63° 01' 23" West 172.02 feet; thence North 1323.50 feet; thence West 1614.42 feet; thence North 1981.71 feet to the Southerly right of way of Transpacific Parkway; thence along said right of way North 81° 26' 19" East 545.01 feet; thence along a 679.52 foot radius curve to the left through a central angle of 35° 00' 24" for a distance of 415.17 feet said curve having a chord of North 63° 56' 08" East 408.75 feet; thence North 46° 25' 56" East 372.50 feet; thence along a 1359.34 foot radius curve to the right through a central angle of 46° 09' 38" for a distance of 1095.16 feet said curve having a chord of North 69° 30' 45" East 1065.78 feet; thence South 87° 24' 26" East 672.58 feet to the point of beginning. Basis of Bearing is Oregon State Plane NAD 83, South Zone

ALSO EXCEPTING THEREFROM: A parcel of land located in the SE 1/4 of Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon, more particularly described as follows: Beginning at a point that bears South 22° 56' 01" West 3172.79 feet from the Northeast corner of said Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon; thence South 1323.50 feet; thence South 63° 01' 23" East 172.02 feet; thence South 02° 31' 39" West 149.20 feet to the mean high water line of Coos Bay; thence along said high water line North 78° 35' 55" West 83.09 feet; thence North 84° 18' 34" West 133.24 feet; thence South 88° 20' 25" West 267.86 feet; thence South 62° 12' 18" West 90.32 feet; thence South 85° 08' 26" West 398.04 feet; thence South 65° 30' 31" West 235.50 feet; thence South 59° 05' 00" West 395.67 feet; thence South 55° 57' 24" West 34.47 feet; thence leaving said mean high water line North 19° 31' 12" East 325.89 feet; thence North 00° 00' 03" East 1617.61 feet; thence East 1284.99 feet to the point of beginning. Basis of Bearing is Oregon State Plane NAD 83, South Zone

PARCEL 2 (HENDERSON RANCH):

The East 1/2 of the SW 1/4 of Section 32, Township 24 South, Range 13 West of the Willamette Meridian, Coos County, Oregon.

PARCEL 3 (HENDERSON RANCH):

The SW 1/4 of the NW 1/4 and NW 1/4 of the SW 1/4 of Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon.

EXCEPTING THEREFROM: That real property conveyed to Coos Bay North Bend Water Board in Warranty Deed 84-1-06718 Deed Records of Coos County, Oregon.

PARCEL 4 (HENDERSON RANCH):

The SW 1/4 of the SW 1/4 of Section 5, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon.

PARCEL 5 (HENDERSON RANCH):

The NW 1/4 of the NW 1/4 and Government Lots 1 and 2 of Section 8, Township 25 South, Range 13 West of the Willamette Meridian, Coos County, Oregon.

EXCEPTING THEREFROM: A parcel of land which is riparian on the Easterly boundary, lying in Government Lot 2 of Section 8, Township 25 South, Range 13 West of Willamette Meridian, Coos County, Oregon, described as follows: Beginning at the Quarter corner of Sections 7 and 8, said Township and Range; thence Easterly along the East/West centerline of said Section 8 a distance of 377.40 feet, more or less, to the record meander line; thence North 37 ° 30' 00" East 585.00 feet along the record meander line; thence Westerly and parallel to said East/West centerline of Section 8 for a distance of 733.50 feet, more or less, to the Section line between said Sections 7 and 8; thence Southerly along said Section line 464 feet, more or less, to the point of beginning.

Bearings and Distances per Statutory Quit Claim Deed 2010-917, Deed Records of Coos County.

SAVE AND EXCEPT FROM THE ABOVE PARCELS ANY PORTION LYING OR BEING within the Statutory Quit Claim Deed (Tidelands) conveyed from Weyerhaeuser NR Company, a Washington corporation to Oregon International Port of Coos Bay, a municipal corporation of the State of Oregon by Deed recorded August 15, 2011 bearing Microfilm Reel No. 2011-6550, Records Coos County, Oregon.

It being the intent of Grantor to convey to Grantee all right, title and interest in and to the real estate acquired by Grantor pursuant to that certain Statutory Quitclaim Deed dated January 1, 2009, recorded January 28, 2010, #2010-917, described therein as Parcels 3, 4 and 5, LESS AND EXCEPT those portions thereof previously conveyed by Grantor and described in those certain deeds recorded August 15, 2011, Auditor's #2011-6530 and #2011-6550.

EXHIBIT B

(Permitted Exceptions)

1. The Property has been classified as Forest, as disclosed by the tax roll. If the Property becomes disqualified, said Property may be subject to additional taxes and/or penalties.
2. The Property lies within the Coos Bay Urban Renewal Area and is subject to the terms and provisions thereof.
3. Rights of the public to any portion of the Property lying within the area commonly known as public streets, roads, alley, highways.
4. Any adverse claim based upon the assertion that:
 - a) Some portion of said Property is tide or submerged Property, or has been created by artificial means or has accreted to such portion so created.
 - b) Some portion of said Property has been brought within the boundaries thereof by an avulsive movement of Coos Bay or has been formed by accretion to any such portion.
5. Any adverse claim based upon the assertion that some portion of said Property is tide or submerged Property, or has been created by artificial means or has accreted to such portion so created.

Affects: Coos Bay

6. Rights and easements for navigation and fishery which may exist over that portion of said Property lying beneath the waters of Coos Bay.
7. The rights of the public and governmental bodies for fishing, navigation and commerce in and to any portion of the Property herein described, lying below the high water line of the Coos Bay. The right, title and interest of the State of Oregon in and to any portion lying below the high water line of Coos Bay.

8. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Pacific Power & Light Company

Purpose: utilities

Recording Date: October 2, 1972

Recording No: 72-10-77030

Affects: Sections 5 and 8

9 Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Port of Coos Bay

Purpose: ingress, egress for road, railway and utilities

Recording Date: December 22, 1976

Recording No: 76-12-18370

Affects: Section 8 and Section 5

10. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Pacific Power & Light Company

Purpose: utilities

Recording Date: July 26, 1977

Recording No: 77-07-11965

Affects: Section 5

11. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: General Telephone Company of the Northwest, Inc. Purpose: utilities

Recording Date: April 6, 1979

Recording No: 79-2-4782

Affects: Section 5

12. Agreement

Executed by: Port of Coos Bay, Oregon, a municipal corporation and Menasha Corporation, a Wisconsin corporation

Recording Date: July 16, 1981

Recording No.: 81-3-1929

Affects: Sections 5 and 8

13. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Coos Bay-North Bend Water Board

Purpose: utilities

Recording Date: January 11, 1984

Recording No: 84-1-6712

Affects: Sections 5 and 8

14. Right of Way

Between: United States Department of the Interior, Bureau of Property Management and Port of Coos Bay, dba Oregon International Port of Coos Bay

Recording Date: June 29, 1984

Recording No.: 84-3-6986A Amended by Amendment No. 1

Recording Date: April 12, 1985

Recording No.: 85-2-4500

Terms and provisions of Assignment of Right of Way Permit or Grant

Recording Date: November 21, 1990

Recording No.: 90-11-0789

15. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Pacific Power & Light Company

Purpose: utilities

Recording Date: October 30, 1984

Recording No: 84-5-4818

Affects: Section 5

16. Right of Way

Between: United States Department of the Interior, Bureau of Property Management and
Port of Coos Bay dba Oregon International Port of Coos Bay

Recording Date: April 12, 1985

Recording No.: 85-2-4502

17. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Coos County

Purpose: public road

Recording Date: September 28, 1989

Recording No: 89-09-1696

Affects: Section 7

18. Reservations set forth in Patent

Recording Date: November 12, 1997

Recording No.: 97-11-0392

Affects: Sections 6 and 7

Transfer accepted by the OWNER OR AUTHORIZED REPRESENTATIVE FOR
OREGON INTERNATIONAL PORT OF COOS BAY

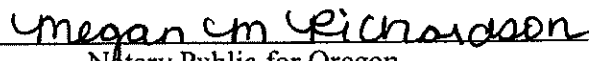


David Koch, Director/CEO

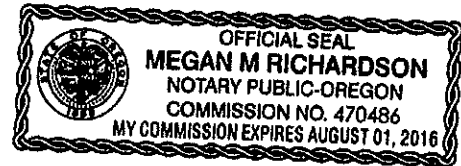
STATE OF OREGON)

County of COOS)

The foregoing instruction was acknowledged before me this 14th day of December 14,
2012, by David Koch as Director and CEO for the Owner or authorized representative
For Oregon International Port of Coos Bay.



Notary Public for Oregon
My commission expires: Aug 1, 2016





Coos County Planning Department
Coos County Courthouse Annex, Coquille, Oregon 97423
Mailing Address: Planning Department, Coos County Courthouse, Coquille, Oregon 97423

(541) 396-7770
FAX (541) 396-1022 / TDD (800) 735-2900

Jill Rolfe Planning Director

CONSENT

On this 11 day of April, 2019,

I, C. S. Scherman on behalf of Fort Chicago Holdings II U.S. LLC
(Print Owners Name as on Deed)

as owner/owners of the property described as Township 25 South, Range 13 West,

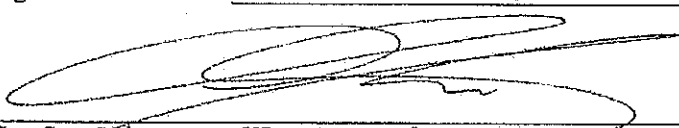
Section 4, Tax Lot 0100, Deed Reference #2011-6530

hereby grant permission to Jordan Cove Energy Project L.P. so that a(n)
(Print Name)

land use application can be submitted to the Coos
(Print Application Type)

County Planning Department.

Owners Signature/s Fort Chicago Holdings II U.S. LLC


C. S. Scherman VP, General Counsel and Corporate Secretary

***Additional Property Information**

Property described as Township 25 South, Range 13 West, Section 4, Tax Lot 0400, Deed Reference 2012-10731

Property described as Township 25 South, Range 13 West, Section 3, Tax Lot 0200, Deed Reference 2012-10676

Property described as Township 25 South, Range 13 West, Section 4, Tax Lot 0101, Deed Reference 2011-6530

Property described as Township 25 South, Range 13 West, Section 5, Tax Lot 0100, Deed Reference 2011-6530

Property described as Township 25 South, Range 13 West, Section 5, Tax Lot 0200, Deed Reference 2011-6530



Coos County Planning Department
Coos County Courthouse Annex, Coquille, Oregon 97423
Mailing Address: Planning Department, Coos County Courthouse, Coquille, Oregon 97423

(541) 396-7770
FAX (541) 396-1022 / TDD (800) 735-2900

Jill Rolfe Planning Director

CONSENT

On this 23 day of April, 2019.

I, Roseburg Forest Products Co.

(Print Owners Name as on Deed)

as owner/owners of the property described as Township 25 South, Range 13 West

Section 04, Tax Lot 300, Deed Reference 98-04-0058

hereby grant permission to Jordan Cove Energy Project L.P. so that a(n)
(Print Name)

land use
(Print Application Type) application can be submitted to the Coos

County Planning Department.

Owners Signature/s

Keith L Eibel

Director of Chips and CBS7

PROPERTY OWNER CERTIFICATION AND CONSENT

I hereby certify that the Oregon Department of State Lands is the manager of the submerged and submersible non-trust lands in Coos Bay owned by the State of Oregon. I hereby approve Jordan Cove Energy Project L.P. to file land use applications with Coos County ("County") for approval under applicable land use regulations of in-water rock apron and shoreline stabilization improvements to be located within our area of ownership, as depicted on attached Exhibit A.

By: _____

Vicki Walker, Director

Date: _____

4/30/15

PROPERTY OWNER CERTIFICATION AND CONSENT

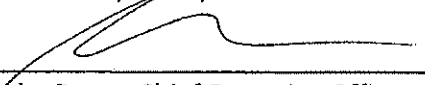
I hereby certify that Oregon International Port of Coos Bay, an Oregon municipal corporation (the "Port"), is or may be the owner of the following properties located in Coos County, Oregon (the "Properties"):

Land located in Section 18, Township 25 South, Range 13 West, Willamette Meridian, Comprising all or portions of Tax Lot 100.

The Port hereby authorizes Jordan Cove Energy Project L.P. to file land use applications with Coos County (the "County") for approval under applicable land use regulations for the use of the above described real property for construction staging and storage activities in conjunction with construction of the Jordan Cove LNG project.

Jordan Cove Energy Project L.P. acknowledges that the execution of this consent to file a land use application does not constitute or imply the conveyance of any real property interest, nor does it bind the Port to any such conveyance in the future. Any such conveyance shall occur, if at all, pursuant to binding written agreement executed by the Port in form and substance acceptable to the Port in its sole and absolute discretion. Further, it is acknowledged that the Port remains free to (i) participate in any local land use proceedings regarding the project referenced herein in any manner whatsoever, notwithstanding this consent, and (ii) withdraw this consent by written instrument signed by the Port, in its sole discretion.

Oregon International Port of Coos Bay, an
Oregon municipal corporation

By: 
John Burns, Chief Executive Officer

Date: April 23, 2019

BOARD OF COMMISSIONERS
COUNTY OF COOS
STATE OF OREGON

IN THE MATTER OF APPROVING)
CONDITIONAL USE APPLICATIONS FOR) FINAL DECISION AND ORDER
JORDAN COVE ENERGY PROJECT L.P.) NO. 16-08-071PL
FILE NUMBERS HBCU-15-05/FP-15-09)

WHEREAS, JORDAN COVE ENERGY PROJECT, L.P. ("JCEP") applied for approval of a conditional use approval for an Industrial and Port facility. The facility will include: LNG terminal; slip and access channel; barge berth; fire station and training center; gas processing area; road and utility corridor; fill; shoreline stabilization; dredging; dredge material disposal; mitigation; restoration; excavation to create new water surface; tide-gating; and, fish and wildlife habitat management; and

The Board of Commissioners invoked its authority under the Coos County Zoning and Land Development Ordinance (CZLDO) §5.0.600, to: (1) call up the applications; and (2) appoint a Hearings Officer to conduct the initial public hearing for the applications and then make a recommendation to the Board of Commissioners. The Board of Commissioners appointed Andrew H. Stamp to serve as the Hearings Officer.

Hearings Officer Stamp conducted a public hearing on this matter on December 18, 2015, and at the conclusion of the hearing the record was held open to accept additional written evidence and testimony. The record closed with final argument from the applicant received by April 14, 2016 (see timelines in findings document).

Hearings Officer Stamp issued his Analysis, Conclusions and Recommendations to the Board of Commissioners on May 2, 2016. Staff presented some revisions to the Findings of Fact; Conclusions of Law and Final Decision for the Board of Commissioners to consider.

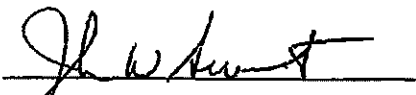
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Order 16-08-071PL

1 The Board of Commissioners held a public meeting to deliberate on the matter on
2 August 16, 2016. The Board of Commissioners made a few suggested edits and instructed
3 staff to include the allegations of bias made on the record by Jody and Bill McCaffree. All
4 members present and participation, unanimously voted to tentatively accept Findings of
5 Fact; Conclusions of Law and Final Decision until such time the changes discussed could be
6 incorporated.


7 NOW, THEREFORE, The Board of Commissioners reviewed the revised document at
8 the August 30, 2016 regular scheduled Board of Commissioners' meeting and unanimously
9 voted to adopt the Findings of Fact; Conclusions of Law and Final Decision attached hereto
10 labeled Exhibit "A" and incorporated into this order herein.


11 ADOPTED this 30th day of August 2016.

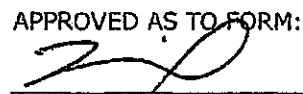
12 BOARD OF COMMISSIONERS

13 
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15 COMMISSIONER

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18 COMMISSIONER

19 
20
21 COMMISSIONER

22
23 ATTEST:
24 
25 Recording Secretary

APPROVED AS TO FORM:

Office of Legal Counsel

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Order 16-08-071PL

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**FINDINGS OF FACT, CONCLUSIONS OF LAW, AND
FINAL DECISION OF THE COOS COUNTY BOARD OF
COMMISSIONERS**

**THE JORDAN COVE ENERGY PROJECT, L.P. ("JCEP")
COOS COUNTY, OREGON**

**COUNTY FILE NOS.
(HBCU-15-05 / CD-15-152 / FP-15-09)
AUGUST 30, 2016**

Exhibit "A"

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I. Summary of Proposal and Process

A. Summary of Proposal.

Jordan Cove Energy Project L.P. ("Applicant") seeks approval of a conditional use approval for an Industrial and Port facility. According to the Applicant:

The description herein is a conceptual preliminary design. It is important to note that this land use application does not require, and consequently, does not seek site plan approval. It is likely that there will be modifications to the layout or final arrangement of buildings and facilities.

The applications consist of a conditional use approval for a Port and Industrial facility to accommodate a liquefied natural gas export terminal and associated facilities, related compliance determinations, driveway confirmation, floodplain certification, and extension of four prior approvals.

As part of this request, the Applicant has requested a number of different primary uses, accessory uses and activities. On property identified as the LNG Terminal Site, the Applicant seeks approval for the following:

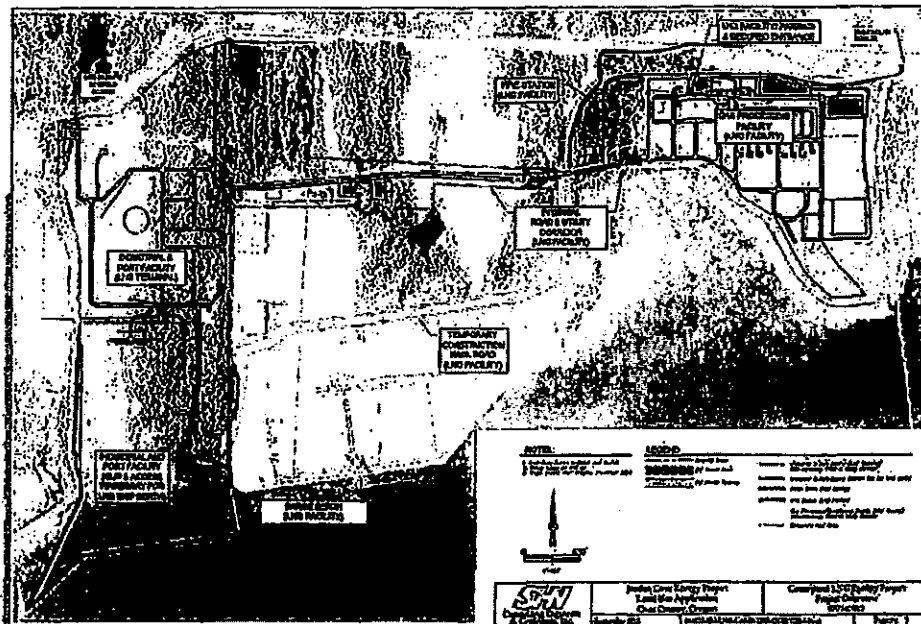
- LNG terminal
- Slip and Access channel
- Barge Berth
- Fire Station and training center
- Gas processing area
- Road and Utility Corridor
- Fill
- Shoreline Stabilization (including vegetative, riprap, retaining walls and bulkheads)
- Dredging
- Dredge Material Disposal
- Land Transportation Facility

On properties identified as "Kentuck Site, Parcel P, Parcel S and Parcel W:"

- Mitigation
- Restoration
- Excavation to create new water surface
- Tide-gating
- Fish and wildlife habitat management

The Board summarizes the uses and activities below, based on information found in the application and staff report. Each section starts with a map showing the site and then a description of uses and activities occurring on the site.

LNG Terminal – Port:



The LNG terminal would primarily be located west of Jordan Cove Road and south of the Trans-Pacific Parkway on what is commonly known as Ingram Yard. The LNG terminal would likely include: access entrance, the liquefaction process area, vapor handling system, LNG storage tanks, ground flares, a road and utility corridor, a fire water pond, water systems. These components are described in detail below.

There would be two primary entrances to the terminal, both of which are off Trans-Pacific Parkway. The first entrance would be located directly across from Box Car Hill. The second entrance would be located within an approximate 4-acre area in the northwestern portion of the LNG terminal and would extend south to the slip. The road would be about 25 feet wide and 995 feet long, with 11-foot-wide asphalt paved lanes and 1.5-foot-wide aggregate shoulders. During construction this road would be used for material deliveries and to access the concrete batch plant. During operation the road would serve emergency situations, deliveries, and maintenance activities.

The LNG terminal would include a 1-mile-long, 2 lane, 150-foot-wide road and utility corridor. The road and utility corridor would be located between the LNG terminal and the gas processing facility and cover about 11 acres. The road and utility corridor will be used to move

materials and equipment during construction, then during operations to access the terminal. Use of the corridor for construction and access will reduce impacts on Trans-Pacific Parkway. The corridor would contain bridge structures to reduce impacts to wetlands and to fly-over the access road and rail spur. Additionally the corridor would contain overhead power transmission lines and a pipe way corridor that includes the feed gas supply to the LNG Terminal, a fuel gas pipeline, backup pilot gas line, telecommunications lines, and redundant control circuitry.

A temporary heavy equipment haul road would be located across the Roseburg Forest Products property. The haul road would be used during construction to unload and deliver materials from the barge berth and to haul excavated material from the marine slip. The haul road would be about 5,925 feet long, 60 feet wide, and cover about 8 acres.

Additional permanent operational roads within the terminal would be graveled or asphalted and would range from 40 - 46 feet wide. There would be internal permanent parking lots. See Applicants Figures 2-4.

Natural gas would be delivered to the proposed LNG terminal via the meter station located at the western end of the Pacific Connector pipeline, at MP 1.5R, on the North Spit. The meter station would occupy about 1 acre of industrial land. FEIS 2-33.

Initially the feed gas would be delivered and treated at the gas processing facility, and then the gas would be sent to four parallel trains of a liquefaction process in order to cool and liquefy the gas. LNG exits the four trains at 730 pounds per square inch gage (psig) and -245 degrees Fahrenheit and is directed to an LNG expander where electricity is generated while the pressure is reduced to 30 psig. The LNG is then sent through a second expansion where the pressure is reduced to 1 psig. This expansion lowers the LNG temperature, but also causes approximately 5 percent (volume basis) of the LNG to be vaporized. The two-phase stream exits the valve at around -260 degrees and would then be sent to the LNG storage tanks via piping. The four liquefaction trains process area would cover about 20 acres and would be at an elevation of about 46 feet. FEIS 2-13.

A vapor handling system would recover vapors produced during the aforementioned let-down to storage pressure, among other sources of vapor produced on site. The vapor would be recovered and used as fuel gas or returned to the LNG storage tanks. FEIS 2-18.

During operation, the refrigeration loop components used in the liquefaction process would be replenished. Three of the hydrocarbon refrigerants used in the four closed-loop trains cannot be generated on site: ethylene, propane, and isopentane. These components would be delivered and stored in bullet-type pressure vessels in the refrigerant storage area. The ethylene bullet would be approximately 144 inches in diameter and 28 feet in length. The propane bullet would be approximately 132 inches in diameter and 26 feet in length. The isopentane bullet would be approximately 144 inches in diameter and 40 feet in length. The refrigerant storage area would occupy about 2 acres north of the LNG storage tanks. FEIS 2-13.

Once the liquefaction process is complete the LNG would be stored in full-containment LNG storage tanks. The tanks are designed to store 160,000 cubic meters (1,006,000 barrels) of LNG at an approximate temperature of -260 degrees and atmospheric pressure. The space between the inner and outer containers would be insulated with expanded perlite to keep the stored LNG at a temperature of approximately -260 degrees while maintaining the outer container at near ambient temperature. There would be no penetrations through the inner container or outer container sidewall or bottom below the maximum liquid level. All piping into and out of the tank would enter from the top of the tank.

The base elevation of the storage tanks would be at about 30 feet above mean sea level (MSL). The top of the dome of a tank would be at about 180 feet above grade, and the diameter of the outer tank would be about 267 feet wide. The tanks would be designed so that both the primary inner container and the secondary outer concrete shell are capable of independently containing the LNG. FEIS 2-11.

Surrounding the LNG storage tanks will be an earthen berm or storm surge barrier designed to contain the contents of one LNG tank that would be about 60 feet high. Collectively the tanks and barrier will occupy about 27 acres within the terminal processing area, just north of the marine slip.

Along the south side of the corridor, west of Jordan Cove Road and east of the liquefaction process area, would be the terminal warehouse, maintenance building, and control building. The marine control building would be south of the transfer pipeline and LNG vessel berth, on the east side of the slip. The tug boat operations and crew building would be on the north side of the slip, north of the tug dock. The terminal guard building would be at the northwest corner of the property, on the south side of the Trans-Pacific Parkway.

There would be two ground flares installed: one located within a 1-acre area north of the refrigerant storage area within the LNG terminal south of the Trans-Pacific Parkway and the other east of Jordan Cove Road. The flares would be about 60 feet high and 55 feet wide at the base. The ground flares would mostly be used on a temporary basis to burn off gas as a relief system during upset conditions, or under the following conditions:

- initial cool down of the facility;
- extended power outages;
- extended emergency shut-down events; and
- unexpected loss of vapor handling equipment during LNG vessel loading with the LNG storage tanks operating near maximum normal pressure.

There would be various operator buildings with control rooms to control and monitor the LNG terminal, which would be highly automated. Operators would monitor liquefaction plant operations in the Liquefaction Control Room. Controls for LNG vessel loading operations would be available at the LNG Berth Operator Building. The control system would be configured so that no single failure in a control room would result in a complete plant failure, or failure to inhibit a hazardous condition. FEIS 2-19.

Electrical power for the LNG terminal would be provided by the South Dunes Power Plant and the PacifiCorp substation. A PacifiCorp connection would be provided by tapping the high voltage side of PacifiCorp's Jordan Point substation, which would be relocated in the industrial zone east of Jordan Cove Road. FEIS 2-19.

Only lighting required for operation and maintenance, safety, security, and meeting FAA requirements would be used on the LNG storage tanks. The light would be localized to minimize offsite effects. The lighting levels would be based on American Petroleum Institute (API) standards. Lighting around equipment and facilities where routine maintenance activities could occur on a 24-hour basis would range from 1 to 20 foot-candles, with 20 foot-candles lighting levels within the compressor enclosures. General process area lighting would be kept to a minimum, on the order of 2 foot-candles. The road and utility corridor would be 0.4 foot-candle. Perimeter security would be approximately 1.3 foot-candles, with evenly spaced 400 watt floodlights. FEIS 2-20.

After construction, about 34 acres would be covered by impervious surface materials, including concrete and asphalt. The Applicant would design and construct a storm water management system to gather runoff from impervious surfaces within the terminal, and direct the flow to designated areas for disposal. No untreated storm water would be allowed to enter federal or state waters. FEIS 2-20.

Sanitary waste from the LNG loading berth building would be directed to a holding tank. A sanitary waste contractor would remove the contents of the tank and dispose at authorized disposal sites through the contractor's permits. Sanitary waste from the remainder of buildings would be directed to on-site septic systems. FEIS 2-20.

Jordan Cove would receive water from the Coos Bay North Bend Water Board (CBNBWB). There is a 12-inch-diameter mainline adjacent to the Trans-Pacific Parkway, the Applicant proposes to install two taps on this line. One would be dedicated to replenish fire water ponds and the other to provide water for potable and utility requirements during operation. Jordan Cove would pay for the design and construction of the tap meters and an 8-inch-diameter water pipeline extending about 4,900 feet from the Trans-Pacific Parkway to the terminal. After construction, CBNBWB would own and operate the line.

The fire water pond would be located in the northwest corner of the liquefaction area, south of Trans-Pacific Parkway, occupying approximately 4 acres.

Support buildings for the Project include: an administration building, operations building, control building, maintenance/warehouse building, electrical substation building, guard building, firewater pump shelter, hazardous material storage building, compressor shelters, and electrical powerhouses.

The Marine Slip and Access Channel.

The access channel would connect the existing navigation channel to the marine slip. The access channel dimensions are approximately 2,300 feet wide at the navigation channel narrowing to 800 feet at the entrance of the slip. The distance from the navigation channel to the slip would be about 700 feet. The access channel would be created by dredging about 1.3 million cubic yards of material from the bay bottom and would cover about 30 acres below the mean higher high water (MHHW) line. Dredging of the access channel would affect about 15.2 acres of deep subtidal below -15.3 feet; about 5.8 acres of shallow subtidal to the MLLW line; and about 8.1 acres of intertidal strata between the MHHW and MLLW lines.

The applicant proposes to dispose of maintenance dredging materials at existing Site F. Site F is located in the Pacific Ocean, about 1.8 miles north-northwest of the north jetty at the mouth of Coos Bay. The site is owned by the State of Oregon out to the 3-mile territorial limit, and the remainder by the COE. This is an existing EPA-approved offshore placement site used by the COE. The COE has indicated that Site F has capacity to accept the maintenance dredging from the access channel and slip. FEIS 2-28.

Jordan Cove would construct the access channel and marine slip. An easement for maintenance has already been obtained and the Removal-Fill authorization for the access channel from the Oregon Department of State Lands was issued on December 29, 2011. Permit No. 37712. FEIS 2-4.

The marine slip would be excavated from current uplands owned by Jordan Cove. The slip would contain an LNG vessel berth on the east side and a berth for three tugboats and three Sheriff's escort boats on the north side. The slips dimensions are approximately 800 feet along the north end and 1,500 feet and 1,200 feet along the western and eastern sides, respectively. About 4.3 million cubic yards of material would be excavated to construct the slip. The slip would be constructed using open cell sheet pile technology, which is advantageous because it allows the LNG vessel to moor about one meter from the side of the slip. This eliminates the need for a dock, supported by piles, extending from shore into the slip. The open cell sheet pile technology allows the piles to be installed land-side, with the mooring dolphins located onshore and the breasting dolphins attached to the front of the concrete loading platform. The battered steel piles will be driven while the marine slip is isolated from the bay, which further minimizes impacts. The piles support surface structures, including the loading platform, and provide foundation for the breasting and mooring dolphins.

A loading platform, approximately 120 feet long and 60 feet wide would be installed above the vessel berth. The facilities at the loading platform include three 16-inch-diameter loading arms, and one 16-inch-diameter vapor return arm, installed on a concrete base of the platform slab deck with space for an additional loading arm. Curbs and a sloped surface will be constructed to contain any spills and the loading arms are capable of rapid disconnection if required. Additional structures at the vessel berth and loading platform include a ship gangway, area lighting facilities, navigation aids, firewater monitors, and a dry chemical firefighting system.

The north side of the slip will have a dock for tugboats and escort boats. This dock would be about 480 feet long and 18 feet wide and supported by battered steel piles. Included as part of the dock, would be two boat houses and north of the dock would be a tug operator and crew building. There will also be a marine control building south of the transfer pipeline and LNG vessel berth, on the east side of the slip. FEIS 9-11.

Between the LNG storage tanks and the vessel loading facilities would be a LNG transfer line. The cryogenic transfer line would be approximately 2,300-feet-long and 36 inches in diameter and cover close to 9 acres of uplands.

The Barge Berth

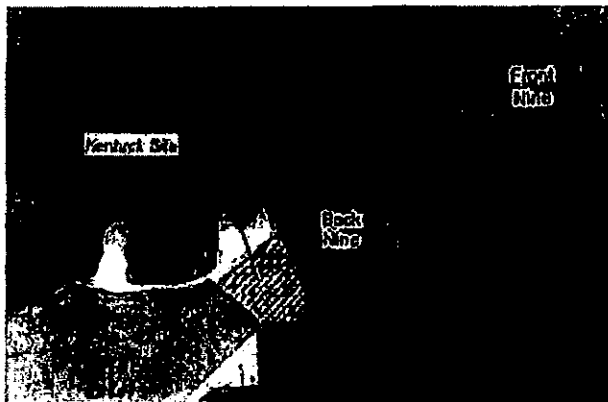
A barge berth to be used during construction to deliver oversized components is proposed at the southeastern edge of the slip. The berth will also be used during operation of the Project to deliver or export large modules for repair or replacement. In order to access the berth, the applicant is proposing to dredge approximately 1.36 acres immediately south of the barge berth; this will allow HandiMax vessels between 492 and 656 feet to access the berth. The berth will be constructed prior to the slip because the berth is needed in order to deliver equipment and materials necessary to construct the slip and maintain the proposed construction schedule. See Applicants Figure 7.

The applicant proposes filling approximately 1.69 acres in the 6-DA zone and approximately 0.40 acres in the 6-WD zone. Temporary fill will be placed in front of the permanent fill during the in-water work window. The material will provide the contractor an area from which to drive the Open Cell sheet pile and place the riprap, thereby avoiding the need to construct a work platform. Further, the temporary fill will act as a sound buffer to eliminate acoustic disturbance to fish during pile driving, thus allowing for pile driving to occur outside the in-water work window. A turbidity curtain will be placed around the temporary fill of the barge berth throughout the duration of pile driving. However, JCEP's turbidity analysis demonstrated that no slope armoring would be required. Riprap and bulkheads will be constructed from Open Cell sheet pile and will stabilize the shoreline.

Gas Processing

The approximately 13 acre gas processing area (also referred to as 'gas treatment') is located east of Jordan Cove Road and south of Trans-Pacific Parkway, in the area commonly known as the Mill Site. The site would be elevated to about 40 feet. Once natural gas is transferred to the Applicant through the metering station, the gas would go through a processing plant. The processing facility would consist of two feed gas pre-treatment trains, each containing two systems in the series: a CO₂ removal process which utilizes a primary amine to absorb CO₂, followed by a dehydration system which uses two solid absorbents to remove water and mercury from the feed gas. The gas processing units would remove substances that would freeze during the liquefaction process, namely CO₂ and water. Mercury would also be removed to prevent corrosion in downstream equipment. Trace amounts of hydrogen sulfide (H₂S) would be removed as well. FEIS 13-15.

Kentuck Golf Course site:



Kentuck Slough Back Nine

The golf course site (back nine) will be enhanced to its full potential, given existing on-site and off-site constraints (i.e., other historical changes that cannot be altered at this point in time such as roads, existing levees, and drainage district requirements). Enhancement will include restoring historical drainage patterns to the extent practical given site constraints.

The mitigation concept involves re-establishing tidal connections between Kentuck Inlet and the golf course, to offset impacts to the mudflat at the Slip and Access Channel. This connection would be achieved by constructing a new bridge in East Bay Drive to allow tidal exchange between Kentuck Inlet and the mitigation site. A new cross dike is proposed between the golf course's "back nine" (holes 10 to 18) and "front nine" (holes 1 to 9) to prevent flooding to adjacent upstream properties. The back nine, which is adjacent to Kentuck Inlet, will be subject to tidal exchange; the front nine, which is east and upstream of the back nine, will not. A flap gate tide gate will also be installed through the new cross dike to allow upstream areas, including the front nine, to drain. A new tidegate array including a muted tidal regulated (MTR) gate for fish passage would be installed to connect Kentuck Slough to the back nine. Kentuck Slough would be substantially rerouted to flow through the new tidegate array, into the back nine, and through the new bridge into Kentuck Inlet. The existing dike between the golf course and Kentuck Slough will be repaired and/or augmented to protect upstream properties from potential increased flooding hazards and saltwater intrusion. The existing channel through the back nine (approximately 2,500 feet) will be enhanced and/or rerouted to connect the tidegate array and bridge. An existing approximately 5-foot-diameter culvert and flapgate through East Bay Drive near the golf course entrance will be removed. East Bay Drive and Golf Course Lane will also be improved as part of the mitigation construction. East Bay Drive will be raised approximately 3 feet at its lowest point south of the existing Kentuck Slough Bridge. Approximately 1,900 total linear feet of the golf course access road will be raised approximately 3 to 8 feet, so that the road will be above projected high tide elevations.

Mitigation construction activities (e.g., dike repair/augmentation, new dike construction, road improvements) will result in incidental permanent wetland impacts within the mitigation site. These impacts are accounted for and the mitigation provided for in the mitigation plan.

Considerable subsidence has occurred within the golf course. These lowered elevations in the former golf course preclude vegetation establishment, and therefore mudflat would be the predominant habitat type without intervention. Grades may be increased if practicable to foster additional salt marsh establishment along the edges of the mitigation site. Current design includes raising elevations within the site to better support establishment of salt marsh; however, this is reliant on having suitable material to import to raise grades. Because of this, mitigation goals and objectives are focused on providing the minimum amount of salt marsh required to offset salt marsh impacts, but with the understanding that additional salt marsh establishment and subsequent decrease in bare mudflat is a desirable outcome. Salt marsh vegetation is anticipated to establish by natural recruitment of tide born propagules. Experience of South Slough National Estuarine Research Reserve (SSNER) suggests that natural recruitment is an appropriate means of establishing salt marsh vegetation at mitigation and restoration sites and that planting should not be needed (Personal communications, Craig Cornu, SSNER, 2014). Although natural recruitment is the proposed method of salt marsh plant establishment, supplemental planting will be provided if monitoring determines that natural recruitment by native species is occurring too slowly. Additionally, upland and wetland/upland edge habitats will receive erosion control seeding and native plantings.

The current design proposes rebuilding the existing Kentuck Slough levee roughly adjacent to the south side of the existing levee. This is due to the poor condition of the existing levee. The rebuilt levee would allow for maintenance vehicle access along the top of the levee. Once the levee has been rebuilt, the old levee will be removed, thus restoring the area under the old levee back to wetland. This will result in a wetland bench along the slough channel. This bench lies within a transition zone between estuarine (e.g., brackish) and freshwater environments. The bench will be planted and seeded with typical high marsh herbaceous species that also occur in freshwater conditions (e.g., tufted hairgrass, meadow barley, salt grass, etc.). Shrub species such as Hooker willow and Douglas spirea will also be planted along the bench with the understanding that some will die off at the downstream end due to salinity.

Fish passage will be improved through the earthen dam associated with the irrigation pond, which will restore tidal connection and fish access to the drainage upstream of the dam.

In addition to dike and tidegate construction, the proposed mitigation will remove to the greatest extent practicable existing golf course improvements in the mitigation site, such as fencing, ditches, foot bridges, and culverts.

Kentuck Slough Front Nine. The Compensatory Wetland Mitigation plan will entail converting existing, degraded pasture wetland within the former Kentuck Golf Course to complex native forested wetland. The site would be planted with species to match the composition of the community within the existing and nearby wetlands. Plant material may be salvaged and transplanted from nearby wetlands to the extent practical. Project work would entail restoring

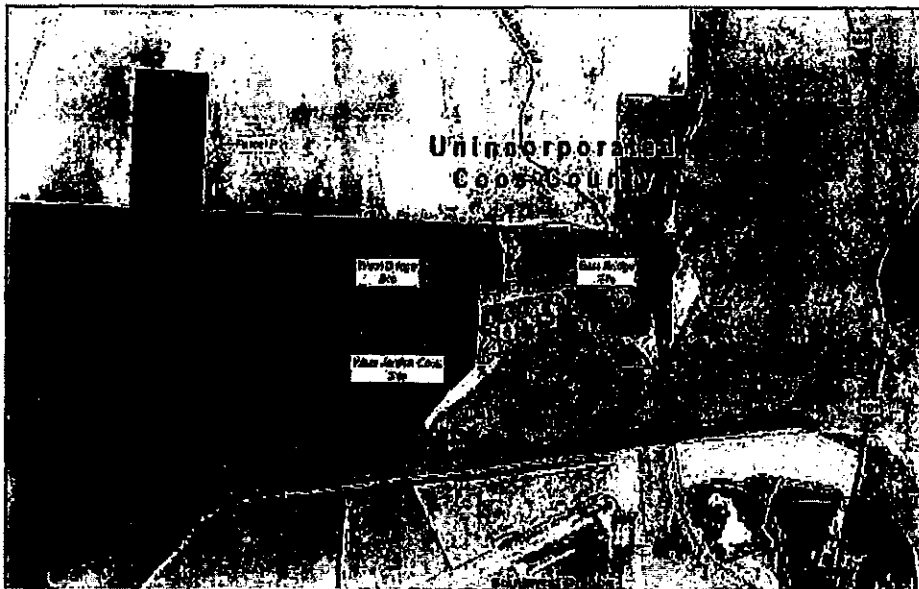
creek channel alignments, installing native freshwater wetland plant communities, grading in new hummock and swale topography, and installing elk exclusion fencing to allow for plant establishment.

Kentuck Slough Entire Golf Course. Construction activities would be similar to those described for the Kentuck Slough Back and Front Nine projects; however, incorporation of a cross-dike to separate the back and front nine is unlikely. May also include public parking area and trail.

Kentuck Inlet. Bioengineered road bank improvements to reduce wave refraction and associated erosion of nearby salt marsh. Place fill in the eroded and/or historically excavated salt marsh areas of Kentuck Inlet to restore salt marsh close to historic conditions and create new tide channels.

This property will span the 15-Rural Shorelands (15-RS) and 15-Natural Aquatic (15-NA) segment of the Coos Bay Estuary Management Plan and the Exclusive Farm Use (EFU) zone.

West Jordan Cove Mitigation Site



The West Jordan Cove Mitigation Site primarily consists of upland that is vegetated with a mix of native and non-native shrubs and herbs. The mitigation goal for this site would be to convert upland habitat to salt marsh (i.e., wetland creation). Existing salt marsh occurs along the east side of the upland area, with mudflats east of the salt marsh. Salt marsh occurs between approximately elevation nine and five feet (NAVD 88). Mudflats generally occur below elevation five feet.

The majority of the upland area would be excavated down to elevations seven and eight feet to match the elevation of robust salt marsh that occurs on-site. Impacts to existing wetland would be kept to the minimum practicable; however, some temporary impacts (i.e., grading) will be necessary in order to provide a suitable hydrologic connection between the created salt marsh and the adjacent estuary. The temporary impact would consist of grading the highest elevation of the existing salt marsh (i.e., along the upland/salt marsh edge) down to the same elevation as the created salt marsh area and adjacent existing robust salt marsh community.

Salt marsh vegetation is anticipated to establish by natural recruitment of tide born propagules. Although natural recruitment is the proposed method of salt marsh plant establishment, supplemental planting will be provided if monitoring determines that natural recruitment by native species is occurring too slowly.

East Bridge

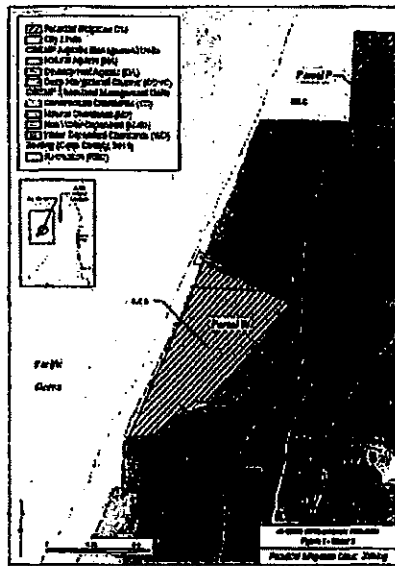
The East Bridge Site consists of wetland restoration activities located in the 7-D zone. A temporary construction access haul road will be installed as part of construction of the overall Project. This road will result in impacts to Wetlands during project construction. Post project construction the site, the haul road will be removed thus lowering elevations to pre-haul road construction conditions. Current pre-haul road conditions support a palustrine aquatic bed wetland plant community dominated by yellow pond lily (*Nuphar polysepalum*), as well as an area of open water. Post haul road conditions will restore the yellow pond lily community, with a minor component of open water. Planting of the site will occur during the first appropriate planting window upon acceptance of final restored grades.

West Bridge

The West Bridge Site consists of excavation to create new water surface in the form of wetland creation, and is located in the 6-Water Dependent (6-WD) zone. There is currently an upland sand berm located between two wetlands within the site. Site work would remove the sand berm between the two wetlands, thus creating new water surface (i.e., freshwater wetland) connecting the two existing wetlands. New ground surface elevations would match those of the existing wetlands.

A temporary construction access haul road will be installed as part of construction of the overall Project. This road will result in impacts to wetlands during project construction. The construction access road will be removed once the road is no longer needed for construction (approximately two to three years after road installation); lowering elevations to roughly pre-construction conditions that are suitable for wetland reestablishment and creation of new water surfaces.

The contoured mitigation area will be planted and seeded with a mix of native wetland shrub and emergent plant species similar to plant communities in adjacent and nearby wetlands. Nesting boxes, suitable for use by purple martin, may be installed. Excavated upland areas will also be re-vegetated with a native herbaceous plant community.

Parcel W

Approximately 61.9 acres of habitat at the Lagoon Site will be used for mitigation. Two separate types of mitigation are proposed: passive protection of 60 acres of existing upland and wetland habitats through use of a conservation easement, and active creation of open sand habitat. Approximately 1.9 acres of sand habitat will be created by stripping vegetation and placement of open sand along a portion of the backside of the ocean foredune in the northwest corner of Parcel W.

In addition, removal of invasive species (primarily Scotch broom) by hand or machinery will occur along the access roads at the north end of the parcel. Minor signage and maintenance of access points (including maintenance of gates) may be required. Work will also include installation of an educational kiosk along the northern access road.

Parcel P Mitigation Site.



Mitigation will involve passive protection of approximately 135 acres of existing upland and wetland habitats through use of a conservation easement or similar legal protective measure. In addition, hand removal of invasive species (primarily Scotch broom) will occur within a minimum of 5.8 acres of upland sand dunes. Minor signage and hand maintenance of access points may be required.

This portion of the project will cover the following zoning districts: 3-Water Dependent (3-WD), 3W-Natural Shorelands (3W-NS), 4-Conservation Shorelands (4-CS), 5-Water Dependent (5WD) and 5A -Natural Shorelands (5A-NS).

[illegible]

The Applicant is also proposing to construct the South Dunes Power Plant ("SDPP") on the Mill Site. The Energy Facility Siting Council has jurisdiction over the construction and operation of the SDPP, including review and approval of land use entitlements pursuant to ORS 469.504(1)(b). Accordingly, no proposal associated with the SDPP is included in this application.

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On May 21, 2013, JCEP filed an application with the Federal Energy Regulatory Commission ("FERC"), Docket No. CP13-483-000, under Section 3 of the Natural Gas Act ("NGA") seeking authorization for the Project. The FERC is the federal agency responsible for authorizing onshore LNG terminals as specified in section 311(e)(1) of the Energy Policy Act of 2005 and the NGA. It is appropriate to proceed with local land use entitlements independent of the National Environmental Policy Act (NEPA) and Environmental Impact Statement (EIS) process and review because the County land use approvals have no impact upon the final selection in the FERC process as they do not "limit the choice of reasonable alternatives" being considered by the EIS. The Land Use Board of Appeals has held that in cases where a NEPA process must be undertaken in conjunction with a local land use process, that the NEPA process need not preclude the land use process. *Standard Ins. Co. v. Washington County*, 16 Or LUBA 724 (1988).

B. Process.

The review timeline for this application is as follows:

November 3, 2015	Application submitted
November 18, 2015	Application deemed complete
November 18, 2015	Hearing Notice
December 18, 2015	Hearing
January 11, 2016	Extension to both tribes followed by a response by the applicants
January 12, 2016	Memo extending the first record period.
January 13, 2016	Close of first record period
January 26, 2016	Close of second record period
February 1, 2016	Applicant's final argument due
February 12, 2016	Final testimony from the Confederated Tribes of Coos Lower Umpqua and Siuslaw Indians
February 22, 2016	Final argument concerning Confederated Tribes testimony
March 17, 2016	Motion to Reopen record to accept FERC Order.
March 31, 2016	Extension to the 150 day timeline
April 6, 2016	Order Allowing FERC Order into Record and Allowing 7 Day Comment Period on FERC Order
April 14, 2016	Record Closes
May 2, 2016	Hearings Officer Recommendation.
August 16, 2016	Board of Commissioners Tentative Approval
August 30, 2016	Board of Commissioners Final Decision

C. Scope of Review.

When addressing the criteria and considering evidence, the Board used the standard of review required for land use decisions. The applicant has the burden to provide substantial evidence, supported by the record, to demonstrate that all approval standards are met.

In addition, where the ordinance provisions were ambiguous, the Board applied the *PGE*

v. *BOLI* methodology to arrive at what he believes to be the correct construction of the statute. *State v. Gaines*, 346 Or 160, 171–172, 206 P3d 1042 (2009). In so doing, the Board attempted to rely, as much as possible, on past interpretation adopted by the Board, while still making sure that the interpretation would be affirmed if appealed.

The standard by which Land Use Board of Appeals (LUBA) and the courts will review the Board's decision is also an important consideration. ORS 197.829 provides as follows:

197.829 Board to affirm certain local government interpretations. (1)
The Land Use Board of Appeals shall affirm a local government's interpretation of its comprehensive plan and land use regulations, unless the board determines that the local government's interpretation:

- (a) Is inconsistent with the express language of the comprehensive plan or land use regulation;**
- (b) Is inconsistent with the purpose for the comprehensive plan or land use regulation;**
- (c) Is inconsistent with the underlying policy that provides the basis for the comprehensive plan or land use regulation; or**
- (d) Is contrary to a state statute, land use goal or rule that the comprehensive plan provision or land use regulation implements. (Emphasis added).**

The Oregon Supreme Court has construed ORS 197.829(1) to require LUBA and the courts to affirm a local government Ordinance interpretation of its own Ordinance if the interpretation is "plausible." *Siporen v. City of Medford*, 349 Or 247, 255, 243 P3d 776 (2010); *Southern Oregon Pipeline Information Project, Inc. v. Coos County*, 57 Or LUBA 44 (2008), *aff'd without op.*, 223 Or App 495, 195 P3d 123 (2008), *rev den.*, 346 Or 65 (2009). That deferential standard of review applies only to interpretations of local law adopted by the governing body (as opposed to the interpretations made by lesser bodies such as planning staff, hearings officers or planning commissions. *Gage v. City of Portland*, 319 Or 308, 317, 877 P2d 1187 (1994)). However, if the Board formally adopts a hearings officer's recommendation as its own findings, the deference principle applies. See *Derry v. Douglas County*, 132 Or App 386, 888 P2d 588 (1995). LUBA has also clarified that the deferential standard of review set forth in ORS 197.829(1) applies to a County's interpretation of plan maps as well. *Oregon Shores Cons. Coalition v. Curry County*, 60 Or LUBA 415 (2010).

One important exception to this principle occurs when the local Ordinance provision implements state law: LUBA and the courts are not required to give deference to a local government's interpretation of state law, or to Ordinance interpretations if the Ordinance standard at issue implements or mimics state law. *Oregon Shores Cons. Coalition v. Coos County*, 51 Or LUBA 500, 519 (2006).¹ Interpretations of any local Ordinance provisions which

¹ See also *Forster v. Polk County*, 115 Or App 475, 478, 839 P2d 241 (1992); *Kenagy v. Benton County*, 115 Or App 131, 134, 838 P2d 1076 (1992); *Crosley v. Columbia County*, ___ Or LUBA ___ (LUBA No. 2011-093, April 11,

implement Statewide Planning Goals, as an example, will be reviewed by LUBA to ensure that they are consistent with the language, policy, and purpose of the Goals. ORS 197.829(1)(d).

The Board is mindful of past decisions made in related cases concerning the LNG facility and associated pipeline. As early as 1969, Oregon courts recognized that a governing body is not necessarily bound to decide a matter in the same manner as a previous governing body. In *Archdiocese of Portland v. Washington County*, 254 Or 77, 87-8, 458 P2d 682 (1969), the court stated:

"Implicit in the plaintiff's contention is the assumption that the Board of County Commissioners of Washington County is bound by the action of previous Boards of County Commissioners in that county. This assumption is not sound. Each Board is entitled to make its own evaluation of the suitability of the use sought by an applicant. The existing Board is not required to perpetuate errors of its predecessors. Even if it were shown that the previous applications were granted by the present Board, there is nothing in the record to show that the conditions now existing also existed at the time the previous applications were granted."

See also *Alexanderson v. Clackamas County*, 126 Or App 549, 869 P2d 873, rev den, 319 Or 150, 877 P2d 87 (1994); *Okeson v. Union County*, 10 Or LUBA 1, 2 (1983); *Reeder v. Clackamas County*, 20 Or LUBA 238 (1990); *BenjFran Development v. Metro Service Dist.*, 17 Or LUBA 30, 46-47 (1988); *S & J Builders v. City of Tigard*, 14 Or LUBA 708, 711-712 (1986).

LUBA has stated, in dicta, that "[A]rbitrary and inconsistent interpretation of approval criteria in deciding applications for land use permits may provide a basis for remand. See *Friends of Bryant Woods Park v. City of Lake Oswego*, 26 Or LUBA 185, 191 (1993), *aff'd* 126 Or App 205, 868 P2d 24 (1994) (although local legislation may be susceptible of more than one interpretation, local government may not "arbitrarily * * * vary its interpretation"). Thus, it is generally accepted that a county must provide some reason for the change in the interpretation, and cannot arbitrarily flip-flop between interpretations from case to case. For example, when a local government determines that comprehensive plan objectives are mandatory approval standards in one case, it may not later determine that plan objectives are mere guidelines in a different case, *absent some explanation for the disparity*. *Welch v. City of Portland*, 28 Or LUBA 439, 448 (1994); *Smith v. Clackamas County*, 25 Or LUBA 568, 570 n.1 (1993).²

2012)(LUBA does not give deference to the County's interpretation of state law, or to its own code to the extent that those code provisions implement and mimic ORS 215.130(5)-(11)).

² Perhaps the most important limitations in this area is set forth in the case of *Holland v. Cannon Beach*, 154 Or App 450, 962 P2d 701 (1998). Under *Holland*, a County cannot conclude that a code standard or plan policy is inapplicable in an initial phase of a case, and then change its mind when the case comes back from LUBA on other issues.

In *Holland*, petitioner's subdivision application was denied by the city council on the basis that it did not comply with certain comprehensive plan provisions. On appeal to LUBA, the Board remanded the decision on the basis that the comprehensive plan provisions relied on to support the denial were not applicable to the application.

Finally, it is important to note that LUBA has stated that there may be circumstances where a change in long-standing interpretations may require notice and an opportunity for comment. *Wicks v. City of Reedsport*, 29 Or LUBA 8, 19 (1995); *Heceta Water Dist. v. Lane County*, 24 Or LUBA 402, 419 (1993); *Buckman Community Assoc. v. City of Portland*, 36 Or LUBA 630, 638-9 (1999).

In summary, it is *possible* for the Board to change the manner in which interpreted its Ordinance in past decisions pertaining the LNG terminal. The Board does not recommend any interpretational changes in at this time.

II. Procedural Issues.

1. Confidential Records Submitted By the Confederated Tribes.

The Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians ("Confederated Tribes") submitted confidential documents into the record pertaining to ORS 192.501(11) and asked that the County "[r]efrain from disclosing protected information when responding to public records requests. See Exh. 75 at p. 4. On the other hand, ORS 197.763(4)(a) states that "All documents or evidence relied upon by the applicant shall be submitted to the local government and be made available to the public." Furthermore, 197.763(4)(b) states that "Any staff report used at the hearing shall be available at least seven days prior to the hearing. If additional documents or evidence are provided by any party, the local government may allow a continuance or leave the record open to allow the parties a

On remand, the city council determined that the application must be denied because it did not comply with a provision in the zoning code related to slope and density. Unfortunately for the city, the city staff had in an earlier staff report concluded that that standard was not applicable, relying on advice from the city attorney. That interpretation had been adopted by the city council in its first decision. So essentially, the decision on remand reversed an earlier, unchallenged code interpretation in the same case.

Petitioner again appealed, and LUBA affirmed the city's new denial decision. Before the court of appeals, the city argued the earlier staff determination had no import, since the city council had made a different determination than had staff previously that the newly applied standard was in fact applicable. The city argued the council's interpretation of its own code was subject to *Clark* deference under ORS 197.829(1). The court of appeals rejected this argument, holding that because the city council had adopted the previous staff determination that the standard at issue was inapplicable, that the standard continues to be inapplicable during the pendency of the case, in order to comply with the "no changing of the goal posts" rule. See ORS 227.178(3).

Holland provides a caveat to the holdings of earlier decisions stating that there is no requirement that a local government's decision be consistent with past decision, and that the law only requires that the decision be correct when made. Compare *Okeson v. Union County*, 10 Or LUBA 1 (1983); *Halverson-Mason Corp. v. City of Depoe Bay*, 39 Or LUBA 193, 205 (2000). Under *Holland*, once a case comes back on remand from LUBA, any interpretations set forth in the earlier decision which were not appealed become binding on the local government.

However, *Holland* appears to have its own set of limits. See e.g., *Buckman Community Assoc. v. City of Portland*, 36 Or LUBA 630 (1999) (the rule advanced in *Holland* is limited to interpretations governing the same application); *Greer v. Josephine County*, 37 Or LUBA 261, 275 (1999) ("As construed in *Holland*, ORS 227.178(3) constrains a local government's ability to change interpretations regarding the applicability of its approval criteria, but we do not read *Holland* as constraining reinterpretations of the meaning of indisputably applicable standards.").

reasonable opportunity to respond. Any continuance or extension of the record requested by an applicant shall result in a corresponding extension of the time limitations of ORS 215.427 or 227.178 and ORS 215.429 or 227.179."

The Board is uncertain how to balance these two statutes, given that they serve different objectives. The parties provide no useful guidance. *But See Concerned Citizens of the Upper Rogue v. Jackson County*, 33 Or LUBA 70, 76 (1997) (recognizing the existence of a "confidential" record but leaving it unclear who was given access to that record).

On the one hand, the Board agrees with the Confederated Tribes when it states that it does not want that information to fall into the hands of "vandals, looters, grave robbers, and fortune hunters." *See* Exh. 75 at p. 4. On the other hand, the applicant at the very least needs to be able to view and access the validity of these materials. To the extent that the materials are well taken, the applicant needs to formulate a plan setting forth its action plan for dealing with these sites.

Nonetheless, in light of the fact that the applicant has agreed to accept a condition of approval to address the Tribe's other concerns surrounding CBEMP Policy 18, the Board does not need to address this issue any further. In the meantime, the Board requests that staff keep the Confidential Record separate from the public record.

2. Request to Reopen the Record and Motion to Strike.

Oregon Shores Conservation Coalition ("OSCC") requested to reopen the record to accept the FERC Order dated March 11, 2016 (Docket No. CP13-483-000 / CP13-492-000). OSCC argues that the FERC Order is relevant to resolving arguments surrounding CBEMP Policy #5.

The applicant "expressly objects to the hearings officer re-opening the record as requested by OSCC." *See* Letter from Steven L. Pfeiffer dated March 18, 2016.

The hearings officer granted the request to re-open the record on April 6, 2016, but only for the limited purpose of addressing whether the FERC Order dated March 11, 2016 had any impact on this case. The record closed on April 14, 2016.

Several parties submitted testimony during the limited open record period. Further, the applicant objected to Exhibit D to Jody McCaffree's April 14, 2016 submittal on the grounds that it exceeded the scope of the open record period. *See* Letter from Steven L. Pfeiffer dated April 21, 2016. Ms. McCaffree's Exhibit D consisted of a 26-page letter with 15 exhibits, all dated January 26, 2016. Exhibit D does not mention, rebut, or "comment on" the FERC Order or FERC's specific reasons for entering that order. The Board concurs with the applicant's objection for the reasons set forth in Mr. Pfeiffer's letter. Accordingly, the Board expressly rejects Exhibit D to Ms. McCaffree's April 14, 2016 submittal from the record of these proceedings.

3. Citations to Websites.

Various opponents to the application continue to make the mistake of attempting to incorporate materials found on the internet simply by referencing website addresses. In one case, even an attorney made this basic mistake. *See, e.g.,* Letter from Julia Olson, Our Children's Trust, Exhibit 68 ("We hereby incorporate [all of the] hyperlinked footnote citations into these comments and the administrative record for this project."). In one case, one opponent even went so far as to "recommend that the County work with the State Historic Preservation Office to obtain and/or review [an] important document." *See* Exhibit 75, p. 3, fn 1. The Board does not have the authority to develop evidence on his own, and seeking out documents from a third party would be reversible error because it is an indication of bias. *See Woodard v. City of Cottage Grove*, 54 Or LUBA 176, 178 (2007).

Furthermore, web-based materials are not part of the "record" when a party simply references a website address but does not submit the actual content in its record filings. LUBA has often cautioned that to merely refer to a document does not make the contents of that document part of the record in the proceeding. *See, e.g., Mannenbach v. City of Dallas*, 24 Or LUBA 618, 619 (1992) (simply referring to documents in testimony does not place such documents before the local decision maker.). As the hearings officer noted in a previous case:

Web-based content is neither fixed nor permanent; rather, the content of a website can be changed or deleted without any notice. It is possible that web-based material could change, or be deleted, prior to consideration by you, or after you make your recommendation to the Board of Commissioners. Similarly, a party attempting to rebut website content based on a website address would have no certainty that the web-based content to which they are responding is the same content the other party intended to reference.

See Hearings Officer Recommendation, FILE NO. ACU 14-08 / AP 14-02

Furthermore, allowing parties to incorporate website materials by reference would frustrate administrative and judicial review of land use decisions. Under CCZLDO 5.0.600.C, for example, the Board of Commissioners may conduct its review on the record, considering "only the evidence, data and written testimony submitted prior to the close of the record No new evidence or testimony related to new evidence will be considered, and no public hearing will be held." Similarly, ORS 197.835(2)(a) provides that review of a land use decision by the Land Use Board of Appeals "shall be confined to the record." Nothing in the CCZLDO, or in the statutes governing land use proceedings, makes web content that is not printed or downloaded and physically submitted to the decision maker a part of the legal "record." Without a fixed and permanent record, LUBA will not be able to ascertain reliably the evidence on which the Board relied.

For these reasons, the Board made no effort to view links to websites listed by the parties. The "documents" are not part of the record of this case. If a party only supported an asserted factual point with a link to the evidence intended to provide the foundation for that asserted fact, the Board did not necessarily accept that point as being supported by substantial evidence.

4. Allegations of Bias.

At the Board deliberations in this matter on August 16, 2016, both Jody McCaffree and Bill McCaffree contended that the Board members were biased and should not participate in the deliberations or decision for the applications. The Board denies the McCaffrees' contentions as follows:

Agreement between Applicant and County: The Board denies Ms. McCaffree's contention that the Board members were biased due to a 2007 agreement between the Applicant and the County pursuant to which the Applicant pays the County \$25,000 a month. The facts alleged by Ms. McCaffree are not supported by substantial evidence because the agreement was not placed before the Board, and Ms. McCaffree did not adequately explain the terms of the agreement, how they were related to the specific matter pending before the Board, or how the existence of the agreement would cause any of the Board members to prejudge the applications. As a result, the Board finds that the facts alleged by Ms. McCaffree are not sufficient to establish disqualifying actual bias by any Board members.

Letter from Chair Sweet to FERC: The Board denies Ms. McCaffree's contention that Chair Sweet was biased due to a letter he wrote to FERC in support of the project. The facts alleged by Ms. McCaffree are not supported by substantial evidence because the letter was not placed before the Board, and Ms. McCaffree did not adequately explain the content of the letter, how it related to the specific matter pending before the Board, or how the existence of the agreement would cause any of the Board members to prejudge the applications. Additionally, the Board finds that, even if the facts alleged by Ms. McCaffree are correct and Chair Sweet did express general support for the project in the letter to FERC, the requests pending before FERC are not of the same nature as the applications at issue in this proceeding. In other words, the letter does not demonstrate that Chair Sweet has prejudged the specific applications pending before the County or that he is unable to objectively apply the County's approval criteria to the applications. As a result, the Board finds that the facts alleged by Ms. McCaffree are not sufficient to establish disqualifying actual bias by Chair Sweet.

Statements Made by Commissioners in 2014 and 2015: The Board denies Ms. McCaffree's contention that Board members were biased due to statements they made to the media about the project in 2014 and 2015. The facts alleged by Ms. McCaffree are not supported by substantial evidence because she did not provide enough details about the statements such as their substance, their timing, or their context, or how they demonstrate prejudgment by the Board members. Further, the Board finds that all of these statements appear to predate the filing of the applications and thus they could not relate to the specific matter pending before the Board. As a result, the Board finds that the facts alleged by Ms. McCaffree are not sufficient to establish disqualifying actual bias by any Board members.

Private Luncheon Between Applicant and Board Members: The Board denies Ms. McCaffree's contention that Chair Sweet and Commissioner Main were biased due to their attendance at a private luncheon in 2014. The facts alleged by Ms. McCaffree are not supported by substantial

evidence because she did not provide any details about the lunch, how it was related to the matter pending before the Board, or how it would cause the Board members to prejudge the applications. Further, the Board finds that the luncheon predated the filing of the applications. The Board also finds, based upon testimony of Commissioner Main, that the Applicant's presentation at the luncheon was general in nature and did not involve any specific discussions with Commission members. Ms. McCaffree did not refute Commissioner Main's characterization. As a result, the Board finds that Ms. McCaffree has not alleged facts sufficient to establish disqualifying actual bias arising from the luncheon.

Membership in Boost Southwest Oregon: The Board denies Mr. McCaffree's contention that the Board members are biased due to their membership in the Boost Southwest Oregon organization. Each of the Board members stated they were not members of the organization. Therefore, Mr. McCaffree's contention is not supported by substantial evidence.

"Buying Votes to Retain Seats": The Board denies Mr. McCaffree's contention that "buying votes to retain seats" has created personal interest bias by the Board members. Mr. McCaffree did not offer any facts to support his contention, so the Board finds there is no basis to find personal interest bias by any Commissioners.

Finally, before taking final action to approve these findings, each of the Board members stated that he/she had not prejudged the applications and that he/she could evaluate the testimony and evidence in the record and make a decision based upon whether the testimony and evidence demonstrates compliance with applicable criteria.

For these reasons, the Board denies the bias challenges alleged in this case.

III. Legal Analysis.

Coos Bay Estuary Management Plan

ARTICLE 3.2 COOS BAY ESTUARY MANAGEMENT PLAN (CBEMP) ZONING DISTRICTS/USES AND ACTIVITIES/LAND DEVELOPMENT STANDARDS.

SECTION 3.2.100. Purpose.

The purpose of this Article is to provide requirements pertaining to individual zoning districts in accordance with the Coos Bay Estuary Management Plan.

Such requirements are intended to achieve the following objectives:

1. To encourage the most appropriate use of land and natural resources.
2. To facilitate the adequate and efficient provision of transportation, water, sewerage, schools, parks, and other public requirements.
3. To secure safety from flood or other natural hazard.

SECTION 3.2.150. How to Use This Article.

This Article contains specific language that implements the Coos Bay Estuary Plan. The main purpose is to clearly stipulate where, and under what circumstances, development may occur. Follow the steps below to determine whether or not a proposed use or activity is, or may be, allowed at any specific site within the Coos Bay Estuary Shoreland Boundary.

1. Locate the subject site on the General Index Map.
2. Note the General Location Index Map (i.e. Lower Bay, Upper Bay, etc.) which is referenced on the General Index Map and advance to the General Location Index Map.
3. Locate the subject site on the General Location Index Map. Note the numbers and abbreviated district designations (i.e. "UD", "UW", "CS", etc.) for applicable zoning districts. (Note: management segments in the Plan are the same as zoning districts.)
4. Turn to the pages in the Ordinance which contain specific zoning district provisions which correspond to the map designations for the subject site.
5. For each applicable Shoreland or Aquatic District:
 - a) Review the districts Management Objective. This narrative provides general policy guidance regarding uses and activities that are, or may be, allowed in the district.
 - b) Review the district's Uses, Activities, and Special Conditions Table to determine whether or not a proposed use or activity is allowable outright, allowable with conditions, or conditionally allowable subject to an Administrative or Hearings Body Conditional Use.

Symbols denote whether or not the specific use or activity listed in the tables is permitted outright, may be allowed subject to an Administrative Conditional Use,

may be allowed subject to a Hearings Body conditional use, or prohibited in the specific district. The following symbols are pertinent:

- P** Means the use or activity is permitted outright subject only to the management objective.
 - S** Indicates that the use or activity may be allowed subject to "Special Conditions" presented following the use and activity table. A few of the special conditions are non-discretionary, but most require local judgment and discretion and the development of findings to support any final decision about whether or not to allow the use or activity. Some uses and activities may be identified as being subject to a special condition that is not discretionary or may not apply to a site-specific request. If such is the situation, the Planning Director shall make such determination and if "General Conditions" are not applicable regard the use or activity as permitted outright. Such determination shall consist of a statement of facts supporting the decision.
 - G** Indicates the use or activity may be allowed subject to "General Conditions" presented following the use and activities table. "General Conditions" provide a convenient cross-reference to applicable Baywide Policies which may further limit or condition the uses and activities. A few "General Conditions" may not apply to a site specific request. If such is the situation, the Planning Director shall make such determination and if "Special Conditions" are not applicable, regard the use or activity as permitted outright. Such determination shall consist of a statement of facts supporting the decision.
 - ACU** Means the use or activity may be permitted as provided above or subject to "Special" or "General" conditions pursuant to an Administrative Conditional Use.
 - HB** Means the use or activity may be permitted except as provided above or subject to "Special" or General" conditions pursuant to a Hearings Body Conditional Use.
 - N** Means the use or activity is prohibited.
 - N/A** Means Not Applicable; the use or activity is not realistic considering the physical character of the district and therefore does not apply.
- c) Review the designations which accompany each use and activity listed in the Table to determine what is allowed, what is not allowed and what conditions may apply. (The Table may list a use as conditionally allowable but a condition may negate the Table's designation).

SECTION 3.2.175. Site-Specific Zoning Districts.

This Ordinance shall divide the lands affected by the Coos Bay Estuary Management Plan into specific zoning districts as identified in Sections 3.2.200. The following zoning districts delineate the appropriate requirements which shall apply to all lands within the individual districts.

A detailed "Uses and Activities" table follows the "Management Objectives" statement presented for each respective aquatic and shoreland district. The tables describe specific uses and activities deemed appropriate and inappropriate for each district. The Use and Activity tables for each district are subordinate to the "Management Objective" for the respective districts in that allowed uses and activities must be consistent with the respective districts' "Management Objective" statements.

Board's Finding: Sections 3.2.150 and 3.2.175 provide guidance for how to use the Coos Bay Estuary Management Plan ("CBEMP"). Most uses and activities are defined in CCZLDO 2.1.200 to provide further guidance on how or why a use or activity was selected. Definitions have been included in the staff report to allow for comprehension of why a use or activity has been selected. The management objective follows the specific boundaries of the zoning district followed by a list of uses and activities. The "uses" and "activities" listings are designed to inform the reader what type of review process are applicable to any specific allowed or conditional use. If a use or activity is allowed, this section will also list the applicable policies that the applicant must comply with.

In *McCaffree v. Coos County*, __ Or LUBA __, LUBA No. 2014-022 (July 15, 2014), *aff'd w/o op.*, 267 Or App 424 (2014), LUBA stated in footnote 2:

[Respondent] provides a detailed explanation of how the [CCZ]LDO specifies which CBEMP policies apply to each use specified in each estuarine zoning district. Briefly, for each CBEMP zone, a LDO Ordinance section lists each use and states whether it is allowed; if it is allowed, the LDO identifies applicable CBEMP Policies.

Listed below are the project components that will occur in the CBEMP zoning districts. The component is listed followed by a description and then the applicable zoning districts and criteria. Findings are made to the management objective but the policies are addressed at the end for each section. Staff and the applicant identified the applicable CBEMP policies, which are discussed separately, below.

Uses in the CBEMP.

Industrial & Port facility and Land Transportation Facility.

The Board will first evaluate the "Industrial Port Facility" and "Land Transportation Facility." The applicable criteria for these two uses are set forth below:

The marine terminal is considered to be an "industrial & port facility," and is located in four different CBEMP zoning Districts:

- 5-Development Aquatic (5-DA),
- 6-Development Aquatic (6-DA),

- 6-Water Dependent (6-WD) and
- 7-Development Shorelands (7-D).

Each of these four zones is addressed separately below:

5-Development Aquatic (5-DA)

SECTION 3.2.270. Management Objective:

This district shall be managed so as to efficiently utilize the aquatic area for access to the deep-draft channel in support of upland water-dependent uses.

Board's Finding: This management objective only applies to the access channel. The southwestern corner of the access channel lies in the 5-DA zone. The proposed Industrial and Port facilities use, as well as associated dredging activities, are consistent with the management objective because the access channel efficiently utilizes the aquatic area for direct access to the deep-draft channel in support of an upland water-dependent use, *i.e.*, the Project. The applicants have requested an industrial use that requires shipping a product to market. The application demonstrates compliance with applicable General and Special Conditions and CBEMP policies.

SECTION 3.2.271. Uses, Activities and Special Conditions.

Table 5-DA sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 5-DA also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

A. Uses:

4. Industrial & Port facilities

ACU-S

GENERAL CONDITIONS (the following condition applies to all uses and activities):

None

SPECIAL CONDITIONS

Uses:

- 4. Water-dependent uses are allowed. If the use is water-related or non-dependent/related and does not require fill, findings must be made that the use is consistent with the resource capabilities and purposes of the management unit. Fill is not permitted for non-water-dependent uses.**

Board's Finding: As discussed above, the applicant is proposing a marine terminal, which is a "industrial and port facilities" use. The Board's finding on this point is consistent with the manner in which the Board of Commissioners interpreted the Ordinance in 2007. *See* Order 07-11-289 PL, at p. 5.

The "industrial and port facilities" use is subject to special condition #4, as set forth above. Special condition #4 states that water-dependent uses are allowed. The definition of "water-dependent" is 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. CCZLDO 2.1.200. The term is defined as follows:

WATER-DEPENDENT: 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.

A. The following definitions also apply:

1. **access:** means physical contact with or use of the water;
2. **energy production:** means uses which need quantities of water to produce energy directly (e.g., hydroelectric facilities, ocean thermal energy conversion);
3. **recreational:** e.g., recreational marinas, boat ramps and support;
4. **require:** means the use either by its intrinsic nature (e.g., fishing, navigation, boat moorage) or at the current level of technology cannot exist without water access;
5. **source of water:** means facilities for the appropriation of quantities of water for cooling processing or other integral functions;
6. **water-borne transportation:** means uses of water access:
 - i. which are themselves transportation (e.g., navigation);
 - ii. which require the receipt of shipment of goods by water; or
 - iii. which are necessary to support water-borne transportation (e.g., moorage fueling, servicing of watercraft, ships, boats, etc. terminal and transfer facilities).

B. Typical examples of water-dependent uses include the following:

1. aquaculture;
2. certain scientific and educational activities which, by their nature, require access to coastal waters: estuarine research activities and equipment mooring and support;
3. commercial: e.g., commercial fishing marinas and support; fish processing and sales; boat sales, rentals, and supplies;
4. industrial: e.g., manufacturing to include boat building and repair; water-borne transportation, terminals, and support; energy production which needs quantities of water to produce energy directly; water intake structures for facilities needing quantities of water for cooling, processing, or other integral functions.

**5. recreation: means water access for fishing, swimming, boating, etc.
Recreational uses are water-dependent**

See also OAR 660-037-0040(6).³ An LNG terminal is an industrial use that involves "water borne transportation" and is also a "terminal and support" within the meaning of OAR 660-037-0040(6) and CCZLDO 3.2.271.

Water-related uses are those uses which are not directly dependent upon access to a water body, but which provide goods or services that are directly associated with water-dependent land or waterway use, and which, if not located adjacent to water, would result in a public loss of quality in the goods or services offered. Except as necessary for water-dependent or water-related uses or facilities, residences, parking lots, spoil and dump sites, roads and highways, restaurants, businesses, factories, and trailer parks are not generally considered dependent on or related to water location needs.

In this case, the applicant correctly states that it is proposing a "water-dependent" use that requires a location adjacent to water areas with a deep-draft slip and navigation channel. The Board's finding on this point is consistent with the manner in which the Board interpreted the Ordinance in 2007. See Order 07-11-289 PL, at p. 6. The applicants have provided a detailed description of why the project is a water-dependent project. See Letter from Robert J. Naeger

³ OAR 660-037-0040(6) provides:

(6) "Water-Dependent Use".

(a) The definition of "water-dependent" contained in the Statewide Planning Goals (OAR Chapter 660, Division 015) applies. In addition, the following definitions apply:

(A) "Access" means physical contact with or use of the water.

(B) "Requires" means the use either by its intrinsic nature (e.g., fishing, navigation, boat moorage) or at the current level of technology cannot exist without water access.

(C) "Water-borne transportation" means uses of water access:

(i) Which are themselves transportation (e.g. navigation);

(ii) Which require the receipt of shipment of goods by water; or

(iii) Which are necessary to support water-borne transportation (e.g. moorage fueling, servicing of watercraft, ships, boats, etc. terminal and transfer facilities).

(D) "Recreation" means water access for fishing, swimming, boating, etc. Recreational uses are water dependent only if use of the water is an integral part of the activity.

(E) "Energy production" means uses which need quantities of water to produce energy directly (e.g. hydroelectric facilities, ocean thermal energy conversion).

(F) "Source of water" means facilities for the appropriation of quantities of water for cooling processing or other integral functions.

(b) Typical examples of water dependent uses include the following:

(A) Industrial - e.g., manufacturing to include boat building and repair; water-borne transportation, terminals, and support; energy production which needs quantities of water to produce energy directly; water intake structures for facilities needing quantities of water for cooling, processing, or other integral functions.

(B) Commercial - e.g., commercial fishing marinas and support; fish processing and sales; boat sales, rentals, and supplies.

(C) Recreational - e.g., recreational marinas, boat ramps, and support.

(D) Aquaculture.

(E) Certain scientific and educational activities which, by their nature, require access to coastal waters - estuarine research activities and equipment mooring and support.

(c) For purposes of this division, examples of uses that are not "water dependent uses" include restaurants, hotels, motels, bed and breakfasts, residences, parking lots not associated with water-dependent uses, and boardwalks.

dated September 29, 2015. Applicant's Exhibit 3. This letter constitutes substantial evidence and is more credible than any evidence in the record to the contrary.

OSCC points out that the U.S. Army Corps of Engineers (USACE) previously wrote a letter to the applicant stating that it "appeared" that the LNG Terminal, the access channel, and marine slip, among other things, were a "water dependent use" that required to be sited in special aquatic sites. USACE asked JCEP to evaluate three alternatives:

- A trestle-supported LNG loading facility,
- Offshore LNG platform, and
- Shore-side dock and berthing facility parallel to the existing bankline,

See USACE letter dated March 20, 2015, at 4-5. Exhibit 40. The applicant addresses this at Applicant's Exhibit 20 (Section 5.5.1 and 5.5.2 of the "Alternatives Analysis" dated May 2015.) The applicant points out that the applicant's design is the preferred alternative from the perspective of the USCG. The Board incorporates by reference the applicant's findings and analysis set forth in Section 5.5.2 to 5.5.5 of the "Alternatives Analysis" dated May 2015, and adds the following discussion.

To recap: the definition of "water dependent" is as follows: "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." While this definition does appear to invoke an alternatives analysis that requires consideration of whether the use can be conducted on uplands, it does not appear to require the type of analysis required by the USACE in their letter dated March 20, 2015. Such analysis may be required under NEPA, but it is beyond the scope of CCZLDO 3.2.271.

This is due to the fact that the Ordinance cannot reasonably be interpreted to require considerations of alternative locations outside of Coos County's planning jurisdiction. If the Ordinance were to be so interpreted, it would be impossible for an applicant to ever prove that a proposed use is "water dependent." So the applicant does not have to show that an offshore LNG platform outside the County's planning jurisdiction is a viable alternative.

The similar concept of a "trestle-supported LNG loading facility" appears also to be unworkable in this case. The applicant points out that the County's zoning would not allow trestle supported loading facilities.

A "shore-side dock and berthing facility parallel to the existing bankline" appears to be the only alternative that warrants serious consideration. However, such a design concept would undoubtedly have a much larger long-term impact on public trust resources for fishing, navigation, and recreation. The applicant's proposal is better because it proposes to make an aquatic area out of land that is currently an upland (*i.e.* a coastal shoreland), and therefore makes much less permanent usage of existing aquatic areas. OSCC's arguments are therefore either rejected on the merits or because they are not developed sufficiently to allow review.

6-Development Aquatic (6-DA)

SECTION 3.2.280. Management Objective:

This aquatic district shall be managed to provide water access for the industrial uses in the adjacent uplands.

Board's Finding: The applicant has requested an industrial use that involves shipping a product to market via large tanker ships. Deep-draft water access is needed for these proposed uses. The proposed uses and activities, which involve all components included in the 6-WD district, *see* Figure 10 of the Application Narrative, are consistent with this management objective because they are water-dependent, as explained in the "Water-dependent" letter set forth in Applicant's Exhibit 3. Furthermore, the property is located in such a manner that it does not preclude water-dependent uses of the shoreline. In fact, the construction of the Project would serve to directly develop a water-dependent use as directed by this objective. For these reasons, the application demonstrates compliance with the management objective of the 6-DA zone.

SECTION 3.2.281. Uses, Activities and Special Conditions.

Table 6-DA sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 6-DA also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

A. Uses:

4. Industrial & Port facilities

ACU-S, G

GENERAL CONDITION (the following condition applies to all uses and activities):

1. Inventoried resources requiring mandatory protection in this unit are subject to Policies #17 and #18.

SPECIAL CONDITIONS:

Uses:

4. Water-dependent uses are allowed. If the use is water-related or non-dependent/non-related and does not require fill, findings must be made that the use is consistent with the resource capabilities and purposes of the management unit. Fill is not permitted for non-water-dependent uses.

Board's Finding: The applicant is proposing a water-dependent activity, as discussed *supra*. The proposed water access way and dredging activity will provide the ability for deep-draft ships to reach the port facility located in the 6-WD zone. The Board's finding on this point is consistent with the manner in which the Board interpreted the Ordinance in 2007. See Order 07-11-289 PL, at p. 21-22. Compliance with CBEMP Policies # 17 and #18 is discussed *infra*.

Special condition 4 applies to the proposed "Industrial and Port facilities" use, which is a water-dependent use for the reasons set forth in the "Water-dependent" letter in the applicant's Exhibit 3. The Board finds that the application is compliant with this criterion.

6-Water-Dependent Development Shorelands (6-WD)

SECTION 3.2.275. Management Objective:

This district shall be managed so as to protect the shoreline for water-dependent uses in support of the water-related and non-dependent, non-related industrial use of the area further inland. To assure that the district shoreline is protected for water-dependent uses while still allowing non-water-dependent uses of the inland portion of the property (outside of the Coastal Shoreland Boundary), any new proposed use of the property must be found by the Board of County Commissioners (or their designee) to be located in such a manner that it does not inhibit or

preclude water-dependent uses of the shoreline. Further, use of wetlands in the district must be consistent with state and federal wetland permit requirements.

Board's Finding: The management objective requires the district to be managed to protect the shoreline for water-dependent uses in support of the water-related and non-dependent, non-related industrial use of the area further inland. This overall use is for an "Industrial and Port Facility" that allows for a product (LNG) to be shipped to market. This is a water dependent use. There are other uses requested in the upland areas, but they are all a part of one large integrated project, and it is essential to be able to use the ships to transport this product. Therefore, the request meets the management objective.

The primary project components located within the CBEMP, including the Slip, Barge Berth, and LNG Terminal, are proposed to be located in CBEMP management unit 6-WD. All three of these uses are correctly permitted as "Industrial (Uses) and Port Facilities," which are defined as follows:

"Public or private use of land or structures for manufacturing, processing, port development, and energy generating facilities. Industrial and Port Facilities include large commercial and industrial docks."

CCZLDO 2.1.200. The facilities in question are undoubtedly intended for the purpose of "processing" and also constitute "energy generating facilities," and therefore fall within the Ordinance definition. The Board's finding on this point is consistent with the manner in which the Board interpreted the Ordinance in 2007. *See* Order 07-11-289 PL, at p. 20

Moving on, CCZLDO 3.2.281 is entitled "Uses, Activities and Special Conditions" and provides as follows:

• **A. Uses**

4. Industrial & Port facilities - ACU-S, G

Thus, "Industrial (Uses) and Port Facilities" are allowed as conditional uses in the 6-WD CBEMP management unit, subject to compliance with applicable general and special conditions. CCZLDO 3.2.276.A.6. The primary special condition of concern is Special Condition 4:

1. Special Conditions, Uses: 4

Special Condition 4 provides as follows:

Water-dependent uses are allowed. If the use is water-related or non-dependent/related and does not require fill, findings must be made that the use is consistent with the resource capabilities and

purposes of the management unit. Fill is not permitted for non-water-dependent uses.

In JCEP's application narrative, JCEP explains that Special Condition 4 applies to the proposed Industrial and Port facilities use, which is a water-dependent use for the reasons set forth in the Water-dependent letter in Applicant's Exhibit 3. All work in wetlands will be permitted in compliance with state and federal requirements. The applicant's documentation set forth at "Exhibit 3" constitutes substantial evidence, and is largely un rebutted. In supplemental record materials, the applicant demonstrates how it satisfies these general and special conditions.

OSCC contends that the CCZLDO and CBEMP do not contemplate a large-scale development with a multitude of components such as this Project. *See* Letter from Courtney Johnson dated December 7, 2015, at p.2. Exhibit 3. OSCC does not identify any development standard, approval criterion, CBEMP policy, or CCZLDO use definition that supports their contention. While it may be correct that the Board of Commissioners did not specifically have an LNG Gas Terminal in mind when they drafted the Ordinance in the late 1970s and early 1980s, it is not fair to suggest that they did not contemplate a large scale energy-industry use involving a deep-draft shipping terminal. In *1000 Friends of Oregon v. LCDR [Coos County]*, 75 Or App 199, 706 P2d 987 (1985), the Court of Appeals noted that Coos County was, via its Comprehensive Plan, seeking to diversify its economic base away from the timber industry to other uses that take full advantage of Coos Bay's natural locational advantages. The Court noted:

The county has identified a number of possible industrial uses which it believes may locate in the area within the planning period. They include a coal export port, oil and gas processing and the processing of deep sea manganese nodules or of polymetallic sulfides from the offshore Gorda Ridge. (Emphasis added).

Id. at 206-07. The fact the proposed cargo is LNG instead of the likely-contemplated resource (wood products, oil and gas processing, or mineral resources) is of no import.

Therefore, the Board rejects OSCC's contention on this issue and find that these aspects of the Project are both permitted and specifically contemplated in the 6-WD zone.

SECTION 3.2.276. Uses, Activities and Special Conditions.

Table 6-WD sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 6-WD also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

A. Uses:

6. Industrial & Port facilities

ACU-S,G

GENERAL CONDITIONS (the following condition applies to all uses and activities):

1. Inventoried resources requiring mandatory protection in this district are subject to Policies #17 and #18.
2. All permitted uses and activities shall be consistent with Policy #23 requiring protection of riparian vegetation.
3. Uses in this district are only permitted as stated in Policy #14 "General Policy on Uses within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in this Plan, uses are only allowed subject to the findings in this policy.
4. All permitted uses shall be consistent with the respective flood regulations of local governments, as required in Policy #27.
5. All permitted uses in dune areas shall be consistent with the requirements of Policy #30.
6. In rural areas (outside of UGBs) utilities, public facilities and services shall only be provided subject to Policies #49, #50, and #51.

SPECIAL CONDITIONS

Uses:

- 4., 6., 16., 17. These uses are subject to review and approval when consistent with Policy #16.

Board's Finding: The proposed Industrial and Port Facilities are an Administrative Conditional Use (ACU) in this zone. The proposed use will provide the applicant with the ability to export LNG to locations throughout the Pacific Rim. The Coos County Comprehensive Plan ("CCCP") Vol II, Part II, Sections 5-82 recognizes that vacant industrial land with deep-draft channel frontage is in short supply, and, in fact, there are no other feasible locations for this activity

The proposed Industrial and Port facilities are subject to special conditions concerning compliance with Policy #16.

Compliance with CBEMP Policies #14, #16, #17, #18, #23, #27, 30, #49, #50, and #51 is discussed *infra*.

7-Development Shorelands (7-D)

SECTION 3.2.285. Management Objective:

This shoreland district, which borders a natural aquatic area, shall be managed for industrial use. Continuation of and expansion of existing non-water-dependent/non-water-related industrial uses shall be allowed provided that this use does not adversely impact Natural Aquatic District #7. In addition, development shall not conflict with state and federal requirements for the wetlands located in the northwest portion of this district.

Board's Finding: The proposed use and activities, which are identified on Figure 10 of the Application Narrative, are consistent with the 7-D management objective because the proposed use and activities are being developed for an industrial use. In addition, the development will not conflict with state and federal requirements for the wetlands located in the northwest portion of this district. All work in wetlands will be permitted in compliance with state and federal requirements. The proposal is for an industrial use and will not conflict with the state and federal requirements for wetlands located in the northwest portion of this district. As a condition of approval, the applicant shall have to obtain any necessary state and federal wetlands Fill / Removal permits.

SECTION 3.2.286. Uses, Activities and Special Conditions.

Table 7-D sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 7-D also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

- A. **Uses:**
6. **Industrial & Port facilities** P-G
- B. **Activities:**
5. **Fill** ACU-S, G

GENERAL CONDITIONS (the following condition applies to all uses and activities):

1. **Uses in this district are only permitted as stated in Policy #14 "General Policy on Uses within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in this Plan, uses are only allowed subject to the findings in this policy.**
2. **Inventoried resources requiring mandatory protection in this unit district are subject to Policies #17 and #18.**
3. **All permitted uses and activities shall be consistent with Policy #23 requiring protection of riparian vegetation.**
4. **All permitted uses shall be consistent with the respective flood regulations of local governments as required in Policy #27.**
5. **All permitted uses in dune areas shall be consistent with the requirements of Policy #30.**
6. **In rural areas (outside of UGBs) utilities, public facilities, and services shall only be provided subject to Policies #49, #50, and #51.**

Activities:

- 2a. New dikes may be constructed, provided that findings are developed which document that in proposed future development, the use of a dike, berm, or buffer setback will protect the natural aquatic area to the south from major development impacts.
- 3. Dredge material disposal shall be allowed when consistent with Policy #20.
- 4. Excavation to create a new water surface shall be allowed only for the purposes of an approved restoration project.
- 5. The wetland in the southeast portion of this district can be filled for a development project contingent upon satisfaction of the prescribed mitigation described in Shoreland District #5.
- 6b., 6c. These activities are permitted subject to the findings required by Policy #9, "Solutions to Erosion and Flooding Problems".
- 9a. Active restoration shall be allowed when consistent with Policy #22b.
- 10. Land divisions are only permitted where they meet the conditions in Policy #15.

Board's Finding: The applicant is proposing to build industrial and port facilities, which is a permitted use in the 7-D zone.

Special Condition, Activities 5 applies to the proposed activity of fill in 7-D. The application is proposing fill in the southeast portion of this district for a development project and will mitigate in accordance with all prescribed mitigation.

Policies that apply to the Industrial & Port Facilities include: #14, #16, #17, #18, #23, #27, 30, #49, #50, and #51, which are discussed *infra*.

Land Transportation Facility

The "land transportation facility" is a road that the applicant needs to build in order to realign the access road to the site for public safety reasons. This road will be located in the northeast corner of the project. The land on which the proposed road will be located in the "8-Water Dependent Development Shorelands" (8-WD) zone. The applicable standards are as follows:

8-WATER-DEPENDENT DEVELOPMENT SHORELANDS (8-WD)

SECTION 3.2.370. Management Objective:

This shoreland district shall be managed to allow the continuation of and expansion of aquaculture, along with development of a boat ramp and limited tie-up facilities, to permit public access to the Estuary.

Board's Finding: The proposed use is located in the northeast corner of the site in 8-WD, *see* Figure 10 of the Application Narrative. The realignment will allow for safety and connections into the public access road. The proposed use is consistent with the 8-WD management objective because the proposed land transportation facility does not inhibit the continuation and expansion of aquaculture, the development of a boat ramp, or public access to the Estuary. Therefore, it is consistent with the intent of the management unit.

SECTION 3.2.371. Uses, Activities and Special Conditions.

Table 8-WD sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 8-WD also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

A. Uses:

7. Land Transportation facilities

P-G

GENERAL CONDITIONS (the following condition applies to all uses and activities):

1. *Inventoried resources requiring mandatory protection in this district are subject to Policies #17 and #18.*
2. *All permitted uses and activities shall be consistent with Policy #23, requiring protection of riparian vegetation.*
3. *All permitted uses shall be consistent with the respective flood regulations of local governments, as required in Policy #27.*
4. *Uses in this district are only permitted as stated in Policy #14, "General Policy on Uses within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in this Plan, uses are only allowed subject to the findings in this policy.*
5. *In rural areas (outside of UGBs) utilities, public facilities, and services shall only be provided subject to Policies #49, #50, and #51.*

i. Policies

Board's Findings: A land transportation facility is a permitted use in the 8-WD zone, subject to general conditions.

CBEMP Policies that apply to the Land Transportation Facilities include: #14, #17, #18, #23, #27, #30, #49, #50, and #51. This will be addressed under the CBEMP policy section, *infra*.

Activities

The applicant has requested several activities that are located in the Coos Bay Estuary Management Plan. The activities consist of:

- Excavation to create new water surface;
- Restoration (active and passive);
- Mitigation;
- Fill;
- Shoreline Stabilization;
- Dredge Material Disposal; and
- Dredging.

The Board will discuss each of these activities separately, as noted below.

Excavation to Create New Water Surface.

Excavation to create new water surface will occur in the 6-WD District.

6-Water-Dependent Development Shorelands (6-WD)

SECTION 3.2.275. Management Objective:

This district shall be managed so as to protect the shoreline for water-dependent uses in support of the water-related and non-dependent, non-related industrial use of the area further inland. To assure that the district shoreline is protected for water-dependent uses while still allowing non-water-dependent uses of the inland portion of the property (outside of the Coastal Shoreland Boundary), any new proposed use of the property must be found by the Board of County Commissioners (or their designee) to be located in such a manner that it does not inhibit or preclude water-dependent uses of the shoreline. Further, use of wetlands in the district must be consistent with state and federal wetland permit requirements.

Board's Finding: The management object requires the district to be managed to protect the shoreline for water-dependent uses in support of the water-related and non-dependent, non-related industrial use of the area further inland. This overall use is for an industrial and port facility that allows for a product (LNG) to be shipped to market. This is a water dependent use. There are other uses requested in the upland areas but they are all a part of one large integrated project and it is essential to be able to use the ships to transport this product. Therefore, the request meets the management objective.

SECTION 3.2.276. Uses, Activities and Special Conditions.

Table 6-WD sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 6-WD also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

4. Excavation to create new water surface

P-G

GENERAL CONDITIONS (the following condition applies to all uses and activities):

1. Inventoried resources requiring mandatory protection in this district are subject to Policies #17 and #18.
2. All permitted uses and activities shall be consistent with Policy #23 requiring protection of riparian vegetation.
3. Uses in this district are only permitted as stated in Policy #14 "General Policy on Uses within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in this Plan, uses are only allowed subject to the findings in this policy.
4. All permitted uses shall be consistent with the respective flood regulations of local governments, as required in Policy #27.
5. All permitted uses in dune areas shall be consistent with the requirements of Policy #30.
6. In rural areas (outside of UGBs) utilities, public facilities and services shall only be provided subject to Policies #49, #50, and #51.

Board's Findings: Excavation to create new water surface is a permitted use in the 6-WD zone, subject to general conditions.

Policies that apply to this activity are #14, #17, #18, #23, #27, #30, #49, #50 and #51. These policies will be addressed under the CBEMP policy section, *infra*.

Restoration (Active and Passive) and Mitigation.

The applicant has requested both active and passive restoration as part of this application. Restoration will occur in the following CBEMP zones:

- 3-Water Dependent Development (3-WD);
- 3W-Natural Shorelands (3W-NS);
- 4-Conservation Shorelands (4-CS);
- 5A-Natural Shoreland (5A-NS);
- 5-Water Dependent (5-WD);
- 7-Shoreland Development (7-D); and
- 15-Rural Shorelands (15-RS).

Mitigation will occur in the 7-D and 15-Natural Aquatics (15-NA) districts.

3-WATER-DEPENDENT DEVELOPMENT (3-WD)

SECTION 3.2.240 Management Objective

This shoreland district shall be managed to efficiently utilize the property for water-dependent or related commercial/industrial development. Development must be conducted in a manner that is consistent with the Plan's general policy regarding beaches and dunes. Any area of disturbed snowy plover habitat shall be replaced elsewhere on the North Spit (see Districts #1CS and #2CS) such that: (1) sites created as habitat are made available before or concurrently with alteration of existing habitat, and (2) there is no net loss of habitat.

Board's Finding: The proposed restoration activity in 3-WD is consistent with the management objective because the proposed restoration will efficiently utilize the property for water-dependent development in a manner that is consistent with the Plan's general policy regarding beaches and dunes.

SECTION 3.2.241 Uses, Activities and Special Conditions

Table 3-WD sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 3-WD also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

9. Restoration
 - a. Active

ACU-S, G

GENERAL CONDITIONS (the following condition applies to all uses and activities):

1. Uses in this district shall normally be water-dependent or water-related. Other uses shall only be permitted subject to the findings required by Policy #14.
2. No permitted use or activity shall pre-empt the use of the designated dredged material disposal site in this unit, as required by Policy #20.
3. All permitted uses shall be consistent with the respective flood regulations of local governments, as required in Policy #27.
4. All permitted uses in dune areas shall be consistent with the requirements of Policy #30.
5. All permitted uses and activities must be consistent with a Snowy Plover habitat mitigation plan; see Management Objective.
6. In rural areas (outside of UGBs) utilities, public facilities and services shall only be provided subject to Policies #49, #50, and #51.
7. Inventoried resources requiring mandatory protection in this unit are subject to Policies #17 and #18.

SPECIAL CONDITIONS:

Activities:

- 9a. Active restoration shall be allowed only when consistent with Policy #22b

Board's Finding: Active restoration is a conditional use in the 3-WD zone, subject to general and special conditions. Passive restoration is a permitted use in the 3-WD zone, subject to general conditions.

General Condition #5 states that all permitted uses and activities must be consistent with a Snowy Plover habitat mitigation plan; see Management Objective. The purpose of this restoration project is creating additional habitat for the Snowy Plover. Therefore, this activity is consistent with this objective.

Additional policies that apply to this activity are #14, #17, #18, #20, #23, #27, #30, #49, #50 & #51. These policies will be addressed under the CBEMP policy section, *infra*.

3W-NATURAL SHORELANDS (3W-NS)

SECTION 3.2.245 Management Objective

This shoreland district shall be managed to protect habitat while maintaining the stability of dunes. Mitigation projects shall be allowed consistent with the resource capabilities of this district. This district contains a mitigation site designated in conjunction with the "Henderson Marsh Agreement", which shall be protected from pre-emptive uses.

Board's Finding: A conservation easement is proposed, which is consistent with the management objective to protect habitat while maintaining the stability of the dunes. The proposed activity is consistent with the management objective.

SECTION 3.2.246. Uses, Activities and Special Conditions.

Table 3W-NS sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 3W-NS also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

9. Restoration

- a. Active
- b. Passive

ACU-S,G
P-G

GENERAL CONDITIONS (the following condition applies to all uses and activities):

1. *Uses in this district are only permitted as stated in Policy #14 "General policy on Uses within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in this Plan, uses are only allowed subject to the findings in this policy.*
2. *Inventoried resources requiring mandatory protection in this unit are subject to Policies #17 and #18.*
3. *All permitted uses in dune areas shall be consistent with the requirements of Policy #30.*
4. *In rural areas (outside of UGBs) utilities, public facilities and services shall only be provided subject to Policies #49, #50, and #51.*

SPECIAL CONDITIONS:

Activities

- 9a. *Active restoration shall be allowed only when consistent with Policy #22b.*

Board's Finding: Active restoration is a conditional use in the 3W-NS zone, subject to general and special conditions. Passive restoration is a permitted use in the 3W-NS zone, subject to general conditions.

Policies that apply to these activities are #14, #17, #18, #30, #49, #50 & #51. These policies will be addressed under the CBEMP policy section, *infra*.

4-CONSERVATION SHORELANDS (4-CS)

SECTION 3.2.255. Management Objective:

This shoreland district shall be managed to maintain the existing lagoon and its ability to handle effluents and to allow development of a freshwater marsh.

Board's Finding: The applicant has stated that the proposed activity is consistent with the management objective because it allows development of a freshwater marsh and does not inhibit the maintenance of the existing lagoon.

SECTION 3.2.256. Uses, Activities and Special Conditions.

Table 4-CS sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 4-CS also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

9. Restoration

- a. Active
- b. Passive

ACU-S, G
P-G

GENERAL CONDITIONS:

- 1. Uses in this district are only permitted as stated in Policy #14 "General Policy on Uses within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in this Plan, uses are only allowed subject to the findings in this policy.**
- 2. All permitted uses are subject to Policy #13 which states general use priorities in coastal shorelands.**
- 3. All permitted uses in dune areas shall be consistent with the requirements of Policy #30.**
- 4. In rural areas (outside of UGBs) utilities, public facilities and services shall only be provided subject to Policies #49, #50, and #51.**
- 5. Inventoried resources requiring mandatory protection in this unit are subject to Policies #17 and #18.**

SPECIAL CONDITIONS:

Activities

- 9a. Active restoration shall be allowed only when consistent with Policy #22b.**

Board's Finding: Active restoration is a conditional use in the 4-CS zone, subject to general and special conditions. Passive restoration is a permitted use in the 4-CS zone, subject to general conditions.

Policies that apply to active restoration activity are #13, #14, #17, #18, #22b, #30, #49, #50 & #51. These policies will be addressed under the CBEMP policy section, *infra*.

Policies that apply to passive restoration activity are #13, #14, #17, #18, #30, #49, #50 & #51. These policies will be addressed under the CBEMP policy section, *infra*.

5-WATER-DEPENDENT DEVELOPMENT SHORELANDS (5-WD)

SECTION 3.2.260 Management Objective:

A large portion of this district, compared to other areas of the bay, possesses characteristics that make it an exceptional future development resource not only for the Bay Area, but for Coos County and the State of Oregon as well. The site's location on the deep-draft channel in the lower bay gives it even greater attributes as a water-dependent industrial development site. Therefore, the Plan reserves this portion of the district for an integrated industrial use that takes advantage of the site's unique characteristics, particularly its attributes for deep-draft development. Uses need not be limited to those specifically mentioned in Exception #22.

Utilizing the site for development purposes as described will require the filling of 123 acres of freshwater and saltwater wetlands, commonly known as Henderson Marsh (Dredged Material Site #4x).

The Plan intends that development within the road corridor will be for the purposes of developing and maintaining an access road, rail and utility corridor, and pulp mill effluent pipeline.

Board's Finding: The proposed restoration will comply with the management objective of 5-WD because it will enhance the development of a water-dependent industrial development site.

SECTION 3.2.261 Uses, Activities and Special Conditions.

Table 5-WD sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 5-WD also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

Uses and Activities listed below can occur while the planned fill and mitigation are on-going and are consistent with state and federal permits.

B. Activities:

9. Restoration

a. Active

ACU-S, G

b. Passive

ACU-S, G

GENERAL CONDITIONS:

1. Uses in this district are only permitted as stated in Policy #14, "General Policy on Uses Within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in the Plan (see Coastal Shorelands Goal "Linkage Findings" section), uses are only allowed subject to the findings in this policy.
2. All permitted uses shall be consistent with the respective flood regulations of local governments, as required in Policy #27.
3. Wherever possible, dredged material, especially from the federal channel or other major project, is to be used for the fill material. This method of obtaining fill will be incorporated into the overall project phasing, unless it can be demonstrated that it will have an adverse impact on the development effort.
4. All permitted uses in dune areas shall be consistent with the requirements of Policy #30.
5. No use or activity shall pre-empt the use of the designated dredged material disposal site in this district, as required by Policy #20.
6. Inventoried resources requiring mandatory protection in this unit are subject to Policies #17 and #18.
7. In rural areas (outside UGBs) utilities, public facilities and services shall only be provided subject to Policies, #49, #50, and #51.

SPECIAL CONDITIONS:

Activities:

- 9a., 9b. These activities are permitted in the portion of the site agreed on for mitigation as per the Henderson Marsh Mitigation Plan.

Board's Finding: Both active and passive restoration are conditional uses in the 5-WD zone, subject to general and special conditions.

Policies that apply to active and passive restoration activity are #14, #17, #18, #20, #27, #30, #49, #50 & #51. These policies will be addressed under the CBEMP policy section, *infra*.

Additionally, the Board finds that the proposed restoration is consistent with Special Conditions 9a and 9b because it will be located in the portion of the site agreed on for mitigation as per the Henderson Marsh Mitigation Plan. Further, the Board finds that General Condition 5 is not applicable because the proposed activity is not fill.

5A - NATURAL SHORELANDS (5A-NS)

SECTION 3.2.265. Management Objective:

To conserve and enhance vital wildlife habitat resources. This also contains a corridor and access road for the Oregon International Port of Coos Bay's effluent outfall pipeline from eastern boundary of the site with transpacific parkway and running west along the southern boundary of the management unit into the ocean.

Board's Finding: The proposed activities in this section are restoration which will enhance the vital wildlife habitat resources. Therefore, the proposal is consistent with the management objective of the 5A-NS zone.

SECTION 3.2.266. Uses, Activities and Special Conditions:

Table 5A-NS sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 5A-NS also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

9. Restoration

- a. Active**
- b. Passive**

**ACU-S, G
P-G**

GENERAL CONDITIONS:

- 1. All permitted uses in dune areas shall be consistent with the requirements of Policies #30.**
- 2. Inventoried resources requiring mandatory protection in this district are subject to Policies #17 and #18.**
- 3. In rural areas (outside of UGB's) utilities, public facilities and services shall only be provided subject to Policies #49, 50, and 51.**

SPECIAL CONDITIONS:

Activities:

- 9a. Active restoration shall be allowed only when consistent with Policy #22b.**

Board's Finding: Active restoration is a conditional use in the 5A-NS zone, subject to general and special conditions. Passive restoration is a permitted use in the 5A-NS zone, subject to general conditions.

Policies that apply to active restoration activity are #17, #18, #22b, #30, #49, #50 & #51. These policies will be addressed under the CBEMP policy section, *infra*.

Policies that apply to passive restoration activity are #17, #18, #30, #49, #50 & #51. These policies will be addressed under the CBEMP policy section, *infra*.

7-DEVELOPMENT SHORELANDS (7-D)

SECTION 3.2.285. Management Objective:

This shoreland district, which borders a natural aquatic area, shall be managed for industrial use. Continuation of and expansion of existing non-water-dependent/non-water-related industrial uses shall be allowed provided that this use does not adversely impact Natural Aquatic District #7. In addition, development shall not conflict with state and federal requirements for the wetlands located in the northwest portion of this district.

Board's Finding: The proposal is for an industrial use and will not conflict with the state and federal requirements for wetlands located in the northwest portion of this district. As a condition of approval, the applicant shall obtain any necessary state and federal permits.

SECTION 3.2.286. Uses, Activities and Special Conditions.

Table 7-D sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 7-D also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

- | | | |
|----|-------------|----------|
| 8. | Mitigation | P-G |
| 9. | Restoration | |
| a. | Active | ACU-S, G |
| b. | Passive | P-G |

GENERAL CONDITIONS (the following condition applies to all uses and activities):

1. Uses in this district are only permitted as stated in Policy #14 "General Policy on Uses within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in this Plan, uses are only allowed subject to the findings in this policy.

2. *Inventoried resources requiring mandatory protection in this unit district are subject to Policies #17 and #18.*
3. *All permitted uses and activities shall be consistent with Policy #23 requiring protection of riparian vegetation.*
4. *All permitted uses shall be consistent with the respective flood regulations of local governments as required in Policy #27.*
5. *All permitted uses in dune areas shall be consistent with the requirements of Policy #30.*
6. *In rural areas (outside of UGBs) utilities, public facilities, and services shall only be provided subject to Policies #49, #50, and #51.*

SPECIAL CONDITIONS

Activities:

- 9a. *Active restoration shall be allowed when consistent with Policy #22b.*

Board's Finding: Active restoration is a conditional use in the 7-WD zone, subject to general and special conditions. Passive restoration is a permitted use in the 7-WD zone, subject to general conditions.

Policies that apply to active restoration activity are #14, #17, #18, #22b, #23, #27, #30, #49, #50 & #51. These policies will be addressed under the CBEMP policy section, *infra*.

Policies that apply to passive restoration activity are #14, #17, #18, #23, #27, #30, #49, #50 & #51. These policies will be addressed under the CBEMP policy section, *infra*.

15-RURAL SHORELANDS (15-RS)

SECTION 3.2.450. Management Objective:

This district shall be managed to maintain the present character of and uses in the area, which include low-intensity rural development having minimal association with the adjacent aquatic area. The district contains three designated mitigation sites: U-8(a) and U-9(a) shall be protected for pre-emptive uses as "medium" priority sites (see Policy #22).

Board's Finding: The proposed activity in 15-RS is active and passive restoration in order to re-establish tidal connections between Kentuck Inlet and the golf course as identified on the Applicant's Figure 14.a. These activities will have minimal effect, if any, on the present character and use of low-intensity rural development in the area. Furthermore, the proposed restoration will not affect the three designated mitigation sites.

On September 23, 2009, the Coos County Board of Commissioners adopted Ordinance No. 09-09-005PL, including an administrative conditional use for active and passive restoration in Coos Bay Estuary Management Plan (CBEMP) 15-RS. The applicant has continued to extend the application to keep it active. The applicant has included additional restoration that goes beyond the original approval. The Board of Commissioners found in the prior decision that the

activity of restoration would not conflict with the uses and character of the area. This recommendation is consistent with that prior land use approval.

SECTION 3.2.451. Uses, Activities and Special Conditions.

Table 15-RS sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 15-RS also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

9. Restoration

a. Active

ACU-S, G

b. Passive

P-G

GENERAL CONDITIONS (the following conditions apply to all uses and activities):

1. Inventoried resources requiring mandatory protection in this district are subject to Policies #17 and #18.
2. All permitted uses and activities shall be consistent with Policy #23 requiring protection of riparian vegetation.

The following conditions apply to all permitted uses.

SPECIAL CONDITIONS:

Activities:

- 9a. Active restoration shall be allowed only when consistent with Policy #22b.

Board's Finding: Active restoration is a conditional use in the 15-RS zone, subject to general and special conditions. Passive restoration is a permitted use in the 15-RS zone, subject to general conditions.

Policies that apply to active restoration activity are #17, #18, #22b, and #23. These policies will be addressed under the CBEMP policy section, *infra*.

Policies that apply to passive restoration activity are #17, #18, and #23. These policies will be addressed under the CBEMP policy section, *infra*.

15-NATURAL AQUATIC (15-NA)

SECTION 3.2.455. Management Objective:

This natural aquatic district shall be managed to protect its natural resource productivity. The district also contains a designated mitigation site (U-9c), which shall be protected from pre-emptive uses as a "medium" priority site (see Policy #22).

Board's Finding: The proposed activity in 15-NA is mitigation in order to reduce wave refraction and associated erosion of the nearby salt marsh in Kentuck Inlet, as identified on the Applicant's Figure 14.a. This mitigation is consistent with the management objective because the mitigation will directly protect Kentuck Inlet's natural resource productivity. The area of the proposal will not interfere with the mitigation site.

SECTION 3.2.456. Uses, Activities and Special Conditions.

Table 15-NA sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 15-NA also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

8. Mitigation

P-G

GENERAL CONDITIONS:

- 1. All uses and activities: Inventoried resources requiring mandatory protection in this district are subject to Policies #17 and #18.**

Board's Finding: Mitigation is a permitted use in the 15-NA zone, subject to general conditions.

The applicable policies are #17 and #18. The policies will be addressed in the CBEMP policy section, *infra*.

Fill.

The applicant proposes to add fill in the 6-WD, 6-DA and 7-D zones, as described in project proposal. To recap, a relatively small amount of fill is needed in the 6-WD and 6-DA zones to accommodate the Barge Berth. See Application at p. 11, 18; Figure 7 & 8. Four small areas of fill are needed in the 7-D zone to even out low spots on that land for the LNG processing facility. See Application at Figures 1, 7 & 8.

The criteria below explains which policies are applicable to each zone.

6-Water-Dependent Development Shorelands (6-WD)

SECTION 3.2.275. Management Objective:

This district shall be managed so as to protect the shoreline for water-dependent uses in support of the water-related and non-dependent, non-related industrial use of the area further inland. To assure that the district shoreline is protected for water-dependent uses while still allowing non-water-dependent uses of the inland portion of the property (outside of the Coastal Shoreland Boundary), any new proposed use of the property must be found by the Board of County Commissioners (or their designee) to be located in such a manner that it does not inhibit or preclude water-dependent uses of the shoreline. Further, use of wetlands in the district must be consistent with state and federal wetland permit requirements.

Board's Finding: The management object requires the district to be managed to protect the shoreline for water-dependent uses in support of the water-related and non-dependent, non-related industrial use of the area further inland. This overall use is for an industrial and port facility that allows for a product (LNG) to be shipped to market. This is a water dependent use. There are other uses requested in the upland areas but they are all a part of one large integrated project and it is essential to be able to use the ships to transport this product. Therefore, the request meets the management objective.

SECTION 3.2.276. Uses, Activities and Special Conditions.

Table 6-WD sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 6-WD also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

5. Fill

P-G

GENERAL CONDITIONS (the following condition applies to all uses and activities):

1. Inventoried resources requiring mandatory protection in this district are subject to

- Policies #17 and #18.**
2. **All permitted uses and activities shall be consistent with Policy #23 requiring protection of riparian vegetation.**
 3. **Uses in this district are only permitted as stated in Policy #14 "General Policy on Uses within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in this Plan, uses are only allowed subject to the findings in this policy.**
 4. **All permitted uses shall be consistent with the respective flood regulations of local governments, as required in Policy #27.**
 5. **All permitted uses in dune areas shall be consistent with the requirements of Policy #30.**
 6. **In rural areas (outside of UGBs) utilities, public facilities and services shall only be provided subject to Policies #49, #50, and #51.**

Board's Finding: As shown above, fill is an allowed use in the 6-WD zone, subject to general conditions.

Applicable policies include #14, #17, #18, #23, #27, #49, #50, #51, which are addressed *infra*.

6-Development Aquatic (6-DA).

SECTION 3.2.280. Management Objective:

This aquatic district shall be managed to provide water access for the industrial uses in the adjacent uplands.

Board's Finding: The applicants have requested an industrial use that requires shipping a product to market. Therefore, the proposal meets the management objective.

SECTION 3.2.281. Uses, Activities and Special Conditions.

Table 6-DA sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 6-DA also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

4. Fill

ACU-S, G

GENERAL CONDITION (the following condition applies to all uses and activities):

1. ***Inventoried resources requiring mandatory protection in this unit are subject to Policies #17 and #18.***

SPECIAL CONDITIONS:

Activities:

4. **Fill is permitted subject to the findings required by Policy #9, "Solutions to Erosion and Flooding Problems".**

Board's Finding: Fill is a conditional use in the 6-DA zone, subject to general and special conditions. CBEMP Plan Policies #9, #17, and # 18 are addressed *infra*.

7-Development Shorelands (7-D).

SECTION 3.2.285. Management Objective:

This shoreland district, which borders a natural aquatic area, shall be managed for industrial use. Continuation of and expansion of existing non-water-dependent/non-water-related industrial uses shall be allowed provided that this use does not adversely impact Natural Aquatic District #7. In addition, development shall not conflict with state and federal requirements for the wetlands located in the northwest portion of this district.

Board's Finding: The proposal is for an industrial use and will not conflict with the state and federal requirements for wetlands located in the northwest portion of this district. As a condition of approval the applicant shall have to obtain any necessary state and federal permits.

SECTION 3.2.286. Uses, Activities and Special Conditions.

Table 7-D sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 7-D also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

5. **Fill**

ACU-S, G

GENERAL CONDITIONS (the following condition applies to all uses and activities):

1. ***Uses in this district are only permitted as stated in Policy #14 "General Policy on Uses within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in this Plan, uses are only allowed subject to the findings in this policy.***
2. ***Inventoried resources requiring mandatory protection in this unit district are subject to Policies #17 and #18.***
3. ***All permitted uses and activities shall be consistent with Policy #23 requiring protection of riparian vegetation.***
4. ***All permitted uses shall be consistent with the respective flood regulations of local governments as required in Policy #27.***

5. *All permitted uses in dune areas shall be consistent with the requirements of Policy #30.*
6. *In rural areas (outside of UGBs) utilities, public facilities, and services shall only be provided subject to Policies #49, #50, and #51.*

SPECIAL CONDITIONS

Activities:

5. *The wetland in the southeast portion of this district can be filled for a development project contingent upon satisfaction of the prescribed mitigation described in Shoreland District #5.*

Board's Finding: Fill is a conditional use in the 7-DA zone, subject to general and special conditions.

The applicable policies related to fill are #14, #17, #18, #23, #27, #30, #49, #50 and #51. The policies related to this activity will be addressed under the policy section, *infra*.

The Board finds that the application proposes fill in the southeast portion of this district for a development project and will mitigate in accordance with all prescribed mitigation. Therefore, the Board finds that the proposed fill is consistent with Special Condition 5.

Shoreline Stabilization.

Shoreline stabilization will occur in the 6-WD and 6-DA, as described in project proposal. The criteria below explains which policies are applicable to each zone.

6-Water-Dependent Development Shorelands (6-WD).

SECTION 3.2.275. Management Objective:

This district shall be managed so as to protect the shoreline for water-dependent uses in support of the water-related and non-dependent, non-related industrial use of the area further inland. To assure that the district shoreline is protected for water-dependent uses while still allowing non-water-dependent uses of the inland portion of the property (outside of the Coastal Shoreland Boundary), any new proposed use of the property must be found by the Board of County Commissioners (or their designee) to be located in such a manner that it does not inhibit or preclude water-dependent uses of the shoreline. Further, use of wetlands in the district must be consistent with state and federal wetland permit requirements.

Board's Finding: The management object requires the district to be managed to protect the shoreline for water-dependent uses in support of the water-related and non-dependent, non-related industrial use of the area further inland. This overall use is for an industrial and port facility that allows for a product (LNG) to be shipped to market. This is a water dependent use. There are other uses requested in the upland areas but they are all a part of one large integrated project and it is essential to be able to use the ships to transport this product. Therefore, the request meets the management objective.

SECTION 3.2.276. Uses, Activities and Special Conditions.

Table 6-WD sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 6-WD also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

6. Shoreline stabilization

- | | | |
|----|----------------|----------|
| a. | Vegetative | P-G |
| b. | Riprap | ACU-S, G |
| c. | Retaining wall | ACU-S, G |

GENERAL CONDITIONS (the following condition applies to all uses and activities):

1. Inventoried resources requiring mandatory protection in this district are subject to Policies #17 and #18.
2. All permitted uses and activities shall be consistent with Policy #23 requiring protection of riparian vegetation.
3. Uses in this district are only permitted as stated in Policy #14 "General Policy on Uses within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in this Plan, uses are only allowed subject to the findings in this policy.
4. All permitted uses shall be consistent with the respective flood regulations of local governments, as required in Policy #27.
5. All permitted uses in dune areas shall be consistent with the requirements of Policy #30.
6. In rural areas (outside of UGBs) utilities, public facilities and services shall only be provided subject to Policies #49, #50, and #51.

Activities:

- 6b., 6c. These activities are permitted subject to the general findings required by Policy #9, "Solutions to Erosion and Flooding Problems".

Board's Finding: Shoreline stabilization (vegetation) is a permitted use in the 6-WD zone, subject to general conditions. Shoreline stabilization (rip-rap) and shoreline stabilization (retaining wall) are both conditional uses in the 6-WD zone, subject to general and special conditions.

The applicable policies related to Shoreline Stabilization are #9 (not vegetative), #14, #17, #18, #23, #27, #30, #49, #50 and #51. The policies related to this activity will be addressed under the policy section, *infra*.

6-Development Aquatic (6-DA)

SECTION 3.2.280. Management Objective:

This aquatic district shall be managed to provide water access for the industrial uses in the adjacent uplands.

Board's Finding: The applicants have requested an industrial use that requires shipping a product to market. Therefore, the proposal meets the management objective.

SECTION 3.2.281. Uses, Activities and Special Conditions.

Table 6-DA sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 6-DA also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

- | | | |
|----|-------------------------|----------|
| 7. | Shoreline stabilization | |
| a. | Vegetative | P-G |
| b. | Riprap | ACU-S, G |
| c. | Bulkheads | ACU-S, G |

GENERAL CONDITION (the following condition applies to all uses and activities):

1. *Inventoried resources requiring mandatory protection in this unit are subject to Policies #17 and #18.*

SPECIAL CONDITIONS:

Activities:

- 7b., 7c. These activities are permitted subject to the general findings required by Policy #9, "Solutions to Erosion and Flooding Problems", preferring non-structural to structural solutions, and to the specific findings for riprap. Riprap may be allowed to a very limited extent where necessary for erosion control to protect: (A) uses existing as of 10-7-77; (B) unique natural resource and historical and archaeological values; or, (C) public facilities.*

In addition, bulkheads are only allowed subject to finding that adverse impacts have been minimized (see Policy #5); and to Policy #8 requiring mitigation.

Board's Finding: Shoreline stabilization (vegetation) is a permitted use in the 6-DA zone, subject to general conditions. Shoreline stabilization (rip-rap) and shoreline stabilization (retaining wall) are both conditional uses in the 6-DA zone, subject to general and special conditions.

The applicable policies related to Shoreline stabilization are #9 (not vegetative), #17 and #18. The policies related to this activity will be addressed under the policy section. The applicant does propose to build a bulkhead in the 6-DA zone, which is subject to a finding of no adverse impact (Policy #5) and Policy #8 regarding mitigation. See Application Narrative at p. 13, 30.

Dredge Material Disposal

Dredge Material Disposal ("DMD") is an activity which involves the placement and storage of mud and silt which has been excavated from the 5-DA, 6-DA, and 6-WD zones. DMD activity will occur in the 6-WD and 7-D zones, as described in project proposal. See Application Narrative at pp. 17, 19, 29, 31, 92. The criteria below explains which policies are applicable to each zone.

6-Water-Dependent Development Shorelands (6-WD)

SECTION 3.2.275. Management Objective:

This district shall be managed so as to protect the shoreline for water-dependent uses in support of the water-related and non-dependent, non-related industrial use of the area further inland. To assure that the district shoreline is protected for water-dependent uses while still allowing non-water-dependent uses of the inland portion of the property (outside of the Coastal Shoreland Boundary), any new proposed use of the property must be found by the Board of County Commissioners (or their designee) to be located in such a manner that it does not inhibit or preclude water-dependent uses of the shoreline. Further, use of wetlands in the district must be consistent with state and federal wetland permit requirements.

Board's Finding: The management object requires the district to be managed to protect the shoreline for water-dependent uses in support of the water-related and non-dependent, non-related industrial use of the area further inland. This overall use is for an industrial and port facility that allows for a product (LNG) to be shipped to market. This is a water dependent use. There are other uses requested in the upland areas but they are all a part of one large integrated project and it is essential to be able to use the ships to transport this product. Therefore, the request meets the management objective.

SECTION 3.2.276. Uses, Activities and Special Conditions.

Table 6-WD sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 6-WD also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

3. Dredged Material disposal

ACU-S, G

GENERAL CONDITIONS (the following condition applies to all uses and activities):

1. **Inventoried resources requiring mandatory protection in this district are subject to Policies #17 and #18.**
2. **All permitted uses and activities shall be consistent with Policy #23 requiring protection of riparian vegetation.**
3. **Uses in this district are only permitted as stated in Policy #14 "General Policy on Uses within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in this Plan, uses are only allowed subject to the findings in this policy.**
4. **All permitted uses shall be consistent with the respective flood regulations of local governments, as required in Policy #27.**
5. **All permitted uses in dune areas shall be consistent with the requirements of Policy #30.**
6. **In rural areas (outside of UGBs) utilities, public facilities and services shall only be provided subject to Policies #49, #50, and #51.**

SPECIAL CONDITIONS

Activities:

3. **Dredge material disposal shall be allowed when consistent with Policy #20.**

Board's Finding: DMD operations are a conditional use in the 6-WD zone, subject to certain general and special conditions.

The applicable policies related to Dredge Material Disposal are #14, #17, #18, #20, #23, #27, #30, #49, #50 and #51. The policies related to this activity will be addressed under the policy section. *infra*.

7-Development Shorelands (7-D)

SECTION 3.2.285. Management Objective:

This shoreland district, which borders a natural aquatic area, shall be managed for industrial use. Continuation of and expansion of existing non-water-dependent/non-water-related industrial uses shall be allowed provided that this use does not adversely impact Natural Aquatic District #7. In addition, development shall not conflict with state and federal requirements for the wetlands located in the northwest portion of this district.

Board's Finding: The proposal is for an industrial use and will not conflict with the state and federal requirements for wetlands located in the northwest portion of this district. As a condition of approval the applicant shall have to obtain any necessary state and federal permits.

Various opponents argue that the dredging, filling, and DMD operations will adversely impact the 7-NA zoning district. However, the applicant's expert testimony on this topic is more persuasive evidence on this topic. See discussion concerning CBEMP Policy #5, at pp. 70, *infra*.

SECTION 3.2.286. Uses, Activities and Special Conditions.

Table 7-D sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 7-D also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

3. Dredged material disposal

ACU-S, G

GENERAL CONDITIONS (the following condition applies to all uses and activities):

1. *Uses in this district are only permitted as stated in Policy #14 "General Policy on Uses within Rural Coastal Shorelands". Except as permitted outright, or where findings are made in this Plan, uses are only allowed subject to the findings in this policy.*
2. *Inventoried resources requiring mandatory protection in this unit district are subject to Policies #17 and #18.*
3. *All permitted uses and activities shall be consistent with Policy #23 requiring protection of riparian vegetation.*
4. *All permitted uses shall be consistent with the respective flood regulations of local governments as required in Policy #27.*
5. *All permitted uses in dune areas shall be consistent with the requirements of Policy #30.*
6. *In rural areas (outside of UGBs) utilities, public facilities, and services shall only be provided subject to Policies #49, #50, and #51.*

SPECIAL CONDITIONS

Activities:

3. Dredge material disposal shall be allowed when consistent with Policy #20.

Board's Finding: DMD operations are a conditional use in the 7-WD zone, subject to certain general and special CBEMP policies.

The applicable policies related to DMD are #14, #17, #18, #20, #23, #27, #30, #49, #50 and #51. The policies related to this activity will be addressed under the policy section.

Dredging

Dredging will occur in the 5-DA and 6-DA zones, as described in the project proposal. All told, the applicant seeks to dredge approximately 30 acres of submerged land in the 5-DA and 6-WD zones:

The access channel would be created by dredging about 1.3 million cubic yards of material from the bay bottom and would cover about 30 acres below the mean higher high water (MHHW) line. Dredging of the access channel would affect about 15.2 acres of deep subtidal below -15.3 feet; about 5.8 acres of shallow subtidal to the MLLW line; and about 8.1 acres of intertidal strata between the MHHW and MLLW lines.

Application Narrative, at p. 10.

Note: Jody McCaffree and other opponents argue that the dredging that will occur in the 5-DA and 6-DA and fill that will occur in the 7-D zone will "greatly impact shellfish and other habitat that occurs in the 7-NA zone." Exhibit 60. This issue is discussed *infra*, at p. 99.

5-Development Aquatic (5-DA)

SECTION 3.2.270. Management Objective:

This district shall be managed so as to efficiently this district shall be managed so as to efficiently utilize the aquatic area for access to the deep-draft channel in support of upland water-dependent uses.

Board's Finding: The 5-DA zone consists of a relatively thin strip of land under water located south of Henderson Marsh. The applicant proposed to conduct a small amount of "dredging" activity in this zone. No fill is proposed in this zone.

The applicants have requested an industrial use that requires shipping a product to market. Therefore, the proposal meets the management objective.

SECTION 3.2.271. Uses, Activities and Special Conditions.

Table 5-DA sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 5-DA also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

2. Dredging

- | | |
|--|-------|
| a. New | ACU-S |
| b. Maintenance dredging of existing facilities | ACU-S |

GENERAL CONDITIONS (the following condition applies to all uses and activities):

None

SPECIAL CONDITIONS

Activities:

2a., 2b., 5. These activities are only allowed subject to finding that adverse impacts have been minimized (see Policy #5); and to Policy #8 requiring mitigation.

Board's Finding: Both "New Dredging" and "Maintenance Dredging" are a conditional use in the 5-DA zone, subject to special conditions.

The applicable Special Conditions require that "adverse impacts be minimized," and that mitigation be provided. The ordinance cross-references CBEMP Policy #5 but does not directly require it to be addressed. Nonetheless, the applicant has addressed Policy #5 out of caution. Policy #5 requires the Coos County to support dredge and/or fill only if such activities are allowed in the respective management unit. In this case, dredging is a listed use in the 5-DA. Furthermore, the criteria requires that the activity is required for navigation or other water-dependent use that require an estuarine location or in the case of fills for non-water-dependent uses, is needed for a public use and would satisfy a public need that outweighs harm to navigation, fishing and recreation, as per ORS 541.625(4) and an exception has been taken in this Plan to allow such fill.

A more detailed discussion of CBEMP Policy #5 and CBEMP Policy #8 is provided *infra*.

6-Development Aquatic (6-DA).

SECTION 3.2.280. Management Objective:

This aquatic district shall be managed to provide water access for the industrial uses in the adjacent uplands.

Board's Finding: The applicants have requested an industrial use that requires shipping a product to market. Dredging in the 6-DA zone is needed to allow ships to reach the Therefore, the proposal meets the management objective.

SECTION 3.2.281. Uses, Activities and Special Conditions.

Table 6-DA sets forth the uses and activities which are permitted, which may be permitted as conditional uses, or which are prohibited in this zoning district. Table 6-DA also sets forth special conditions which may restrict certain uses or activities, or modify the manner in which certain uses or activities may occur. Reference to "policy numbers" refers to Plan Policies set forth in the Coos Bay Estuary Management Plan.

B. Activities:

2. Dredging

a. New

ACU-S, G

b. Maintenance dredging of existing facilities

ACU-S, G

GENERAL CONDITION (the following condition applies to all uses and activities):

- 1. Inventoried resources requiring mandatory protection in this unit are subject to Policies #17 and #18.**

SPECIAL CONDITIONS:

Activities:

2a.,2b.,5b.,5d. These activities are only allowed subject to finding that adverse impacts have been minimized (see Policy #5); and to Policy #8 requiring mitigation.

Board's Finding: Both "New Dredging" and "Maintenance Dredging" are a conditional use in the 6-DA zone, subject to special conditions.

The applicable policies related to dredging are #5, #8, #17 and #18. The policies related to this activity will be addressed under the policy section, *infra*.

Compliance with CBEMP Policies.

The following matrix summarizes which CBEMP policies apply to each use or activity proposed in this consolidated case.

Use	CBEMP Policy
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Activity	5	8	9	13	14	16	17	18	20	21B	23	27	30	49	50	51
Industrial and Port Facilities			x		x	x	x	x			x	x	x	x	x	x
Dredge Material Disposal					x		x	x	x		x	x	x	x	x	x
Dredging - New & Maintenance	x	x	x		x		x	x	x		x	x	x	x	x	x
Excavation to create new water surface					x		x	x			x	x	x	x	x	x
FRM		x			x		x	x	x		x	x	x	x	x	x
Shoreline Stabilization - Vegetative			x		x		x	x			x	x	x	x	x	x
Shoreline Stabilization - Riprap		x	x		x		x	x			x	x	x	x	x	x
Shoreline Stabilization - Retaining Wall		x	x		x		x	x			x	x	x	x	x	x
Land Transportation Facilities					x		x	x			x	x		x	x	x
Restoration - Active				x	x		x	x	x	x	x		x	x	x	x
Restoration - Passive				x	x		x	x		x	x		x	x	x	x
Mitigation					x		x	x				x	x	x	x	x

CBEMP Policy #5 requires findings of compliance with various criteria before dredging activities of fill are allowed in the Estuary (5-DA and 6-DA zones). The Policy states:

#5 Estuarine Fill and Removal

1. Local government shall support dredge and/or fill only if such activities are allowed in the respective management unit, and:

- a. **The activity is required for navigation or other water-dependent use that require an estuarine location or in the case of fills for non-water-dependent uses, is needed for a public use and would satisfy a public need that outweighs harm to navigation, fishing and recreation, as per ORS 541.625(4) [sic: now codified at ORS 196.825(4)] and an exception has been taken in this Plan to allow such fill;**
- b. **A need (ie., a substantial public benefit) is demonstrated and the use or alteration does not unreasonably interfere with public trust rights;**
- c. **No feasible alternative upland locations exist; and**
- d. **Adverse impacts are minimized.**
- e. **Effects may be mitigated by creation, restoration or enhancement of another area to ensure that the integrity of the estuarine ecosystem is maintained;**
- f. **The activity is consistent with the objectives of the Estuarine Resources Goal and with other requirements of state and federal law, specifically the conditions in ORS 541.615 and Section 404 of the Federal Water Pollution**

Control Act (P.L.92-500). (Emphasis added).

Because CBEMP Policy #5 issue appears to be a reoccurring and cornerstone argument for the opponents, the hearings officer previously discussed this issue in detail. *See* Hearings Officer Recommendation County File No. ACU-15-21 / AP-15-03 (Transpacific Realignment CUP), at p. 43.

As an initial matter, the Board notes that the first hearings officer who handled the previous application for the import facility, Ms. Anne Corcoran Briggs, determined that the application should be denied based on CBEMP Policy #5. *See* Attachment 3 to Exhibit 60, at p. 9-10. However, the Board specifically reversed Ms. Briggs on this point. *See* Attachment 1 to Exhibit 60, at p. 10. This Board has attempted, where possible, to be mindful of previous Board decisions to help maintain consistency in this quasi-judicial process.

With this introduction in mind, we turn to the language of Statewide Planning Goal 16, because the CBEMP Policy #5 is based on, and implements, this Goal. Because estuarine resources are so sensitive, Goal 16 requires careful review of any proposed dredging, filling or "other alteration" to assure that the activity is needed and that harmful effects are kept to a minimum. The goal sets strict tests for allowing dredging or filling in the estuary. Dredging or filling is only allowed:

- If required for navigation or other water-dependent uses that require an estuarine location, or if specifically allowed by the applicable management unit requirements of Goal 16;
- If a need (i.e. a substantial public benefit) is demonstrated and the use or alteration does not unreasonably interfere with public trust rights;
- If no feasible alternative upland locations exist; and
- If adverse impacts are minimized.

Other activities which could affect the estuary's physical processes or biological resources are also subject to review. These "other alterations" include but are not limited to: in-water structures, riprap, log storage, application of pesticides and herbicides, water intake or withdrawal, wastewater discharge, and flow-lane disposal of dredged material. Other alterations which do not involve dredge or fill are allowed if the requirements in 2, 3 and 4 of the Goal are met.

These requirements may be applied at the time of the plan development for activities that are identified in and anticipated by the plan. Otherwise, they must be addressed at the time of permit review.

As mentioned above, CBEMP Policy #5 incorporates the language of Goal 16. For example, looking first to Policy #5 (1)(a), we see that it allows dredging or fill in the 5-DA and 6-DA zones if such activity serves one of two possible purposes:

- Navigation
- Water-dependent uses that require an estuarine location.

In this case, the dredging is not needed for general navigation uses. However, the applicants have demonstrated that this proposal is a water-dependent use. The applicant provided an alternative analysis; therefore, this standard can be met.

Policy #5 (1)(a) also allows dredging and fill for third type of use: "non-water-dependent uses," but only in more limited circumstances. A person proposing fill in support of a "non-water-dependent use" must pass three additional hurdles:

- Demonstrate that the fill is:
 - needed for public use, and
 - would satisfy a public need that outweighs harm to navigation, fishing and recreation, as per ORS 541.625(4), and
- an "exception" [to the Statewide Planning Goals] has been taken.

Notice that the above mentioned three-part test is more or less the same test set forth in Oregon's Fill / Removal law. ORS 196.825(4). In fact, various opponents assert that ORS 196.825(4) is applicable here. This statute reads as follows:

(4) The director may issue a permit for a project that results in a substantial fill in an estuary for a non-water dependent use only if the project is for a public use and would satisfy a public need that outweighs harm to navigation, fishery and recreation and if the proposed fill meets all other criteria contained in ORS 196.600 (Definitions for ORS 196.600 to 196.655) to 196.905 (Applicability). (Emphasis added).

However, the applicant has only requested dredging as part of this project, and has not proposed *any* fill in the 5-DA or 6-DA zones, let alone *substantial* fill. In addition, the applicant is not proposing a "non-water-dependent use." As a result, the criteria applicable to non-water-dependent uses do not apply. In other words, there is no requirement for a "public use" analysis, nor is there a need to balance the need for the fill against any harm to navigation, fishing and recreation. ORS 196.825(4) may apply in some other context related to this case, but it is not relevant to the issue presented by Policy #5(1)(a) in the 5-DA and 6-DA zones.

Next, we turn to CBEMP Policy #5(I)(b), which requires that an applicant who is proposing dredging and fill operations in an estuary to show that "a need (*i.e.*, a substantial public benefit) is demonstrated," and that "the use or alteration does not unreasonably interfere with public trust rights." The Board will first attempt to frame the issues. Perhaps the most typical argument is best represented by the Oregon Shores Conservation Coalition ("OSCC"). In its letter dated December 7, 2016, OSCC argues:

The application fails to demonstrate that there will be a substantial public benefit from the project that would justify the impacts to the estuary. Specifically, the current application does not provide any

energy to local or U.S. markets. Currently, Jordan Cove and Pacific Connector have no contracts or agreements for the sale of natural gas from these facilities. In addition, Pacific Connector has secured easements to cross only six percent of the parcels required for construction of the pipeline. See PCGP Response to FERC (Nov. 4, 2015).

The Economic Analysis submitted in the application is outdated, considers only the impacts of the construction of the project, generalizes economic impact across all of Oregon and Washington states (not localized to Coos Bay communities), and fails to account for lost economic development as a result of the project.

Id. at p. 5. Ms. McCaffree and her attorney, Katy Eymann, also submitted significant testimony pertaining to CBEMP Policy 5. They both also focus mainly on “need / public benefit” language. Like OSCC, they also do not focus on whether there is need for *dredge and fill operations*, but rather they focus on the concept that there is no generalized need for LNG exports.

OSCC’s characterization of Policy #5(1)(b) reveals that there are three primary legal issues at play. It is fair to summarize the opponents’ arguments on this issue as follows:

- ❖ The public benefit must accrue in favor of residents of North Bend /Coos Bay, i.e. the applicant must show a local need / benefit, as opposed to statewide benefit or nationwide benefit. *See* Exh. 3, 49, 54.
- ❖ That the “need / substantial public benefit” benefit standard applies to the overall project, not just to the dredging activity itself.
- ❖ The public benefit must be balanced with (and weighted against) public detriments. *See* Exh. 18, 51⁴ (“I have yet to hear an argument based on public benefit that outweighs the harm to the public trust in the short and long term.”).

The Board has previously rejected the opponents’ broad reading of Policy #5(1)(b) in past cases. The Board believes that these broad policy concerns go well beyond the county’s

⁴ The hearings officer notes that the FERC Order issued on March 11, 2016 makes clear that FERC does in fact weigh the public benefit of the project against the potential adverse effects of the projects. *See* FERC Order at p. 14. *See* also ORS 196.825(4):

(4) The director may issue a permit for a project that results in a substantial fill in an estuary for a nonwater dependent use only if the project is for a public use and would satisfy a public need that outweighs harm to navigation, fishery and recreation and if the proposed fill meets all other criteria contained in ORS 196.600 (Definitions for ORS 196.600 to 196.655) to 196.905 (Applicability).

As an initial matter, ORS 196.825 is not an approval standard for the land use permits being sought from the County, although the applicant will need to acquire Removal/Fill permits from the state of Oregon. In any event, the LNG Gas Terminal and associated infrastructure are not “non-water dependent uses,” and therefore ORS 196.825(4) will not apply in any event.

regulatory authority. Instead, such arguments extend far within the realm of FERC's authority. The County extensively addressed the public need issue in the recommendations in HBCU 13-02 and HBCU 13-04; those portions of which are incorporated herein by reference.

As OSCC points out in its letter dated March 17, 2016, FERC recently issued an Order denying a Certificate of Public Convenience and Necessity. *See* FERC Order dated March 11, 2016, Docket Nos. CP13-483-000 & CP13-492-000. If it stands, that decision may very well kill the entire project, at least for the time being. However, the primary reason for denial, the lack of firm contracts to buy LNG despite having the need to exercise inverse condemnation for the bulk of the pipeline route, is something that JCEP and Pacific Connector could potentially remedy. In addition, the applicant notes that they have appealed the FERC decision. *See* Letter from Steve Pfeiffer dated March 18, 2016. In any event, the Board is of the opinion that the FERC standard and the County standard serve different purposes and require different analysis.

The FERC Order dated March 11, 2016 further reinforces the Board's view that the FERC determination of "need" is different than the "need / substantial public benefit" standard set forth in Statewide Planning Goal 16 and CBEMP Policy #5. The FERC Order revealed that FERC has its own well-developed body of administrative case law to assist it in making its "need" determination, and yet no party has ever attempted to cite FERC case law to this Board as a means to resolve issues surrounding Statewide Planning Goal 16 and CBEMP Policy #5. This seems to further crystallize the conclusion that these two standards have different origins, serve different purposes, and require different analysis, despite any superficial similarities between them.

OSCC states that it agrees that the need assessment in CBEMP Policy #5 serves a different purpose than the FERC need assessment. *See* Letter from Courtney Johnson, April 13, 2016, at p. 1 (Exhibit 91). In what may be a first for this case, the applicant agrees with OSCC, albeit for different reasons. *See* Letter from Steven L. Pfeiffer dated April 14, 2016, at p. 3-4. Exhibit 98. OSCC argues that the County's need assessment is broader than FERC's, because FERC's analysis is "largely driven by economic consideration." Exhibit 91 at p. 1. In contrast, OSCC argues that the CBEMP Policy #5 analysis is not limited to economic considerations. OSCC goes on to argue that because JCEP choose to provide evidence of economic benefit as a means of showing compliance with CBEMP Policy #5, that the "applicant opened the door for Coos County to apply the same logic that FERC applied in its Order". *Id.* at p. 2. The proper interpretation of an Ordinance provision does not vary, change, or otherwise morph on account of the evidence submitted by the applicant. The standard is the standard, and its meaning does not change because an applicant "opens the door" to analysis that is not relevant to the proper interpretation of the standard. As for the argument that CBEMP Policy #5 allows consideration of more than just economic conditions, that undoubtedly is true. But, as shown below, the analysis demanded by Policy #5 is more limited in the sense that it focuses on the need / benefit obtained by conducting dredging activities.

In considering the question of whether the "need / substantial public benefit" standard refers to a need for the project or just refers to a need for the dredging activity, the Board reviewed LUBA case law for sample cases that discussed the issue. In the 1970s and early

1980s, consideration of "public need" was a common criterion found in zoning Ordinances. See *Fasano v. Board of Commr's Washington County*, 264 Or 574, 507 P.2d 23 (1973). However, it fell out of favor in the mid-1980s, and is now only rarely seen in zoning Ordinances as a generally applicable criterion in quasi-judicial land use proceedings. *Neuberger v. City of Portland*, 288 Or 155, 170, 603 P2d 771 (1979). Coos County has not adopted a generalized "public need" or "public benefit" standard applicable to these land use proceedings. Compare *Hale v. City of Beaverton*, 21 Or LUBA 249 (1991) (public need is not an approval criterion) with *Ruef v. City of Stayton*, 7 Or LUBA 219 (1983) (Ordinance standard required that a "public need" for a project be established). Rather, the policy at issue is buried deep in an obscure Ordinance provision related to dredging and/or fill operations. The fact that a finding of need / public benefit is a *sine qua non* for dredging or filling activity but not as a generalized zoning concern seems to be important to the overall interpretation of this provision.

The Board is also mindful that the Ordinance language from Coos County's CBEMP Policy #5 was not created in a vacuum, but rather originates in Statewide Planning Goal 16. Under the Section of the Goal entitled "Implementation Requirements," the following is provided:

- 2. Dredging and/or filling shall be allowed only:**
 - a. If required for navigation or other water-dependent uses that require an estuarine location or if specifically allowed by the applicable management unit requirements of this goal; and,**
 - b. If a need (i.e., a substantial public benefit) is demonstrated and the use or alteration does not unreasonably interfere with public trust rights; and**
 - c. If no feasible alternative upland locations exist; and,**
 - d. If adverse impacts are minimized.**

Coos County has implemented this aspect of Goal 16 in CBEMP Policy #5(1)(b). Coos County's Zoning Ordinance defines the terms "dredging" and "fill" as follows:

DREDGING: The removal of sediment or other material from a stream, river, estuary or other aquatic area: (1) Maintenance Dredging refers to dredging necessary to maintain functional depths in maintained channels, or adjacent to existing docks and related facilities; (2) New Dredging refers to deepening either an existing authorized navigation channel or deepening a natural channel, or to create a marina or other dock facilities, or to obtain fill for the North Bend Airport runway extension project; (3) Dredging to Maintain Dikes and Tidegates refers to dredging necessary to provide material for existing dikes and tidegates; (4) Minor dredging refers to small amounts of removal as necessary, for instance, for a boat ramp. Minor dredging may exceed 50 cubic yards, and therefore require a permit.

FILL: The placement by man of sand, sediment, or other material, usually in submerged lands or wetlands, to create new uplands or raise the elevation of land. Except that "fill" does not include solid waste disposal or site preparation for development of an allowed use which is not otherwise subject to the special wetland, sensitive habitat, archaeological, dune protection, or other special policies set forth in this Plan (solid waste disposal, and site preparation on shorelands, are not considered "fill"). "Minor Fill" is the placement of small amounts of material as necessary, for example, for a boat ramp or development of a similar scale. Minor fill may exceed 50 cubic yards and therefore require a permit.

Other important definitions include the words "use" and "activity," which may be important since the CBEMP makes a distinction between those two terms.

ACTIVITY: Any action taken either in conjunction with a use or to make a use possible. Activities do not in and of themselves result in a specific use. Several activities such as dredging, piling, fill may be undertaken for a single use such as a port facility. Most activities may take place in conjunction with a variety of uses.

USE: The end to which a land or water area is ultimately employed. A use often involves the placement of structures or facilities for industry, commerce, habitation, or recreation.

Note that Policy #5(1)(b) states that "the use or alteration does not unreasonably interfere with public trust rights." At first glance, it seems as if the use of the word "use" instead of the word "activity" *might* provide some support for the opponent's position, at least with regard to the "Public Trust" aspect of the requirement. The opponents assume that the "use" at issue is the LNG terminal. However, the water area in the 5-DA and 6-DA districts are only being used as a water access for ships. The word "use" appears within the phrase "use or alteration," which is a Goal 16 construct. Goal 16 Implementation Requirement 1 gives examples of what constitutes an "alteration," including: dredging, fill, in-water structures, riprap, log storage, application of pesticides and herbicides, water intake or withdrawal and effluent discharge, flow-lane disposal of dredged material, and other "activities" which could affect the estuary's physical processes or biological resources. Dredging is the only "alteration" proposed here in the 5-DA and 6-DA zones. So, as applied to this case, the sentence can be read as follows:

A need (i.e., a substantial public benefit) is demonstrated and the use or alteration [dredging] does not unreasonably interfere with public trust rights.

Furthermore, the County's definition of "use" also deflates the opponent's argument because a use is defined as "the end to which a * * * water area is ultimately employed." Here,

the water area will serve no purpose other than a navigation channel, which is facilitated by the dredging.

The Board concludes that the term "need (substantial public benefit)" used in Goal 16 and CBEMP Policy #5 refers to a public benefit *for the dredging activity*, and does not require the applicant to prove that there is a public need or benefit for the underlying proposed land use (*i.e.* a marine slip and ship terminal, or more generally, an LNG export facility.).

A careful review of the findings set forth in the Coos County Comprehensive Plan, (*See* Part Three of the Coos Bay Estuary Management Plan, Part 2, "Linkage Findings"), reveals how the County has historically written findings addressing the "public need" for dredging / fill. Some sample passages from the Comprehensive Plan's Linkage findings include:

- ❖ "A public need exists to maintain and repair the north jetty due to its essential purpose and the substantial public investment involved."
- ❖ "A public need exists because the areas is essential for future economic development in Coos County."
- ❖ "There is a public need for additional recreational access to the bay."
- ❖ "There is a public need for these actions because: (a) dikes and tide gates must be maintained to retain agricultural lands in productive use and (b) the natural channel is used by recreational and other small craft to gain access to Hayes Inlet."
- ❖ "A public need exists to maintain public recreational access and existing small marine ways."
- ❖ "There is a public need to provide water access for barging of rock products, particularly jetty stone, which can only be practically transported to point of use by barge."
- ❖ "A public need exists because Weyerhaeuser Corp. mill is structured around water access."
- ❖ "A public need exists because existing sub-tidal log storage areas need to be maintained, due to restrictions on intertidal log storage."
- ❖ "There is a public need because Cooston Channel is one of the principle routes for log transportation to Weyerhaeuser mill and can be affected by shoaling from sediment deposited by the Coos River system."
- ❖ "There is a public need for development of the Christenson Ranch site for lumber and wood products uses and associated water dependent use of the shore."
- ❖ "A public need exists to maintain and expand facilities for waterborne transportation."
- ❖ "There is a public need to move logs by water as many mills on Coos Bay are set up to receive logs from the water, and because it is the most energy efficient method. Dredging and fill are necessary to maintain facilities necessary for log transport."
- ❖ "A public need exists to retain public recreational boating and other small shallow-draft navigational access to catching slough because of past and present use."

- ❖ "There is a public need to maintain access to important sites especially suited to water dependent uses."
- ❖ "There is a public need for additional moorage for recreational/commercial boats. * * *. There is also a public need to maintain the authorized deep-draft and Coos River Channels for log transport and other shallow draft navigation."
- ❖ "There is a public need to provide vacant acreage for future water-dependent development with adequate access to the deep draft channel."
- ❖ "There is a public need for additional public access points in various parts of Coos Bay."

Notice that these findings all focus on the public need for the dredging and/or fill activity to support a use or activity that could not exist without such dredging/filling, and do not focus on the need for the underlying industry / land use. For example, there is no discussion about whether there is a public need for Weyerhaeuser Corp to be clear-cutting forests. There is certainly no "cost-benefit analysis" being undertaken by these findings similar to what many of the current opponents seek to have the Board engage in.

However, the Board also notes, in contrast, that a previous hearings officer determined that the public need analysis applies to the *whole project*. Her analysis is set forth in footnote 16 of her Recommendation in HBCU 07-03, November 27, 2007:

The pertinent case for addressing this issue involved another project within lower Coos Bay. In *Morse v. Division of State Lands*, 285 Or. 197, 590 P2d 709, 713-14 (1979), the question was whether the state had to evaluate the benefits of fill alone when evaluating the impact on the public trust or whether the benefits of creating a jetway for the Coos County airport as a whole could be considered. The Oregon Supreme Court evaluated the public benefit of the entirety of the project, the fill of 32 acres of tidelands for construction of the jetway, to conclude that the proposal was in the public interest. The Court expressly rejected findings by the DSL director that declined to address the public need for the airport when evaluating whether the public interest was best served by the use. Thus, with respect to the to the public trust analysis, I evaluated the impact of the entire proposal rather than just the dredging.

Id. at II-10. Exhibit 60. Although the previous hearings officer purports to be relying on the *Morse v. DSL* case, the Supreme Court in *Morse* was interpreting a specific state statute, ORS 541.610 *et seq* [now ORS 196.810 *et seq*]. That statute focused on the "public need [for a public use] that outweighs harm to navigation, fishing and recreation" test, which, as mentioned above, applies only to non-water-dependent facilities. In *Morse*, the facility at issue was the South West Oregon Region Airport, which is not a water-dependent activity. Thus, *Morse* is not good authority for interpreting the "need / public benefit" standard in Statewide Planning Goal 16. But even it was, the result would not change in light of recent case law. See *Examilotis v.*

Department of State Lands, 239 Or App 522, 244 P3d 880 (2010) (DSL's authority to evaluate impacts are limited to such impacts that pertain to a project's proposed fill or dredging, and do not encompass generalized public health and safety issues that are unrelated to the fill or dredging itself).

Furthermore, the Board specifically rejects the argument that the public need / benefit" standard requires the County to balance need / benefit with (and weigh against) public detriments. In the previous sentence of Policy 5, the drafters required that an applicant for a non-water-dependent use to demonstrate that dredging and fill "is needed for a public use and would satisfy a public need that outweighs harm to navigation, fishing and recreation." That specific language does not come out of Goal 16, but rather is taken from ORS 196.825(4). Had the drafters of the CBEMP intended to impose a similar balancing test requirement onto the "public need / benefit" standard, they could have easily have done so (as they expressly did in the prior sentence), but they chose not to do so.

In summary, the "public need / benefit" standard simply does not require the type of analysis that the opponents seek to read into the law. The Board believes that the "need / substantial benefit standard is met if the applicant demonstrates that the dredging or fill activity is needed to enable to construct a permitted or condition use allowed in the neighboring coastal shoreland zone and related upland zones. In other words, Coos County has, via its enactment of the CBEMP (aka: Zoning Ordinance), set forth the panoply of uses that the County believes would serve a need and/or a substantial public benefit in each particular zone (*i.e.* it has established a list of uses that are deemed to be appropriate in each zone in question.). If the applicant is proposing one of those favored uses, and there is a need to conduct fill or dredging activity in order to facilitate that favored use, then there, is, *ipso facto*, a substantial benefit to allowing the applicant to conduct that fill / removal so that it can construct and operate the use.

Given the context of the Ordinance provision (*i.e.* implementation of Statewide Planning Goal 16), the objective of CBEMP Policy #5 appears to be the prohibition of superfluous port facilities, docks and piers (*i.e.* favoring a policy that rejects facilities that don't necessarily have to be situated in the Coos Bay estuary). In the Board's estimation, CBEMP Policy #5 does not present a debate about the world or regional natural gas markets or the advisability of the world's reliance on fossil fuels, but rather it questions whether it this application has made the case to site a terminal facility in Coos County's shorelands and estuary. Second, the question under CBEMP Policy #5 is not whether there is a public need for natural gas. Rather, the question is whether there is a public need or benefit in constructing this marine slip and ship terminal in this particular shorelands / estuary location.

The Board takes at face value the applicant's assertions that there is a regional and global market demand for natural gas, and declines to decide whether that is a good thing or not. The applicant's significant investment in this facility is *prima facie* evidence of the strength and optimism of the global gas market. FERC has the authority and expertise to second guess the applicant on this point, but it would be inappropriate for this Board to do so.

The Board further declines the opponents' invitation to evaluate the fluctuations of global gas consumption or the wisdom of relying on carbon fuels. Such an economic analysis is beyond the scope of these local land use criteria, and the Board concludes it is not contemplated in this criterion. Rather, it is up to FERC to decide if the global market will support this project. The locational question under CBEMP Policy #5, therefore, is much more simple: Goal 16 and Policy #5 ask if there is a public need for dredging so that this deep water industrial port facility be located in this shoreline area.

The clear answer to the required question is "yes." The applicant has shown that there is a need to perform dredging and filling activities at the proposed location in order to make the 5-WD and 6-WD zones usable as a deep-water port facility.

Both the applicant and opponents appear to view the "public benefit" criterion as relating to a generalized need (or lack thereof) for the LNG Terminal facility. For its part, the applicant provides documentation detailing the global demand for natural gas and the importance of national and global energy markets and how this project will generate significant local and regional economic benefits in terms of jobs, wages and tax revenue. *See* Applicant's Exhibit 44 (DOE/FE Order 3041 dated Dec. 7, 2011) and Exhibit 45 (DOE/FE Order No 3413 dated March 24, 2014, at pp. 15-25). *See* Applicant's Exhibit 24 (An Economic Impact Analysis of the Construction of an LNG Terminal and Natural Gas Pipeline in Oregon, EcoNorthwest, March 6, 2012). These documents likely constitute substantial evidence, and seem to be more credible than countervailing evidence submitted into the file. Nonetheless, they are beyond the scope of this proceeding.

In addition to this economic analysis, the hearings officer heard testimony from a substantial number of local residents detailing the importance of such economic drivers to create jobs and economic prosperity, especially following the collapse of the region's timber and fishing industries. Perhaps the most compelling was the letter from Richard Whitman, Natural Resources Policy Advisor to Governor John Kitzhaber, dated February 12, 2015. Exhibit 40. In this letter, Mr. Whitman states that "the project has great potential to support the economy of the central and southern Oregon coast, creating jobs and a strong energy infrastructure in one of the areas of Oregon that is continuing to suffer from both the recession and long-term structural changes in the economy." While this industrial facility will not create the number of jobs anywhere comparable to those generated by the timber industry when it was at its peak, it is undeniable that this LNG Terminal will create a significant number of jobs for the construction phase and a smaller number for operation of the facility going forward. It will also result in millions of dollars in annual revenue coming to the community. Although the opponents downplay these public benefits, their arguments to the contrary are only persuasive to the extent that FERC agrees with them.

Mr. Ingersoll argues that that applicant admits that the project will adversely affect fish and wildlife, and that the applicant's proposed mitigation measures are inadequate to address the Tribe's concerns over these resources. *See* Letter from Mark Ingersoll, dated December 18, 2016, at p. 6-9. In the key paragraph explaining the basis for his objections, Mr. Ingersoll states:

"The cultivation of replacement habitat in other locations needs to be decided in consultation with the Tribe. It is incredibly important to the Tribe's culture to maintain a relationship to our traditional tribal areas. The Tribe has one aboriginal territory; this allows Tribal members to gather resources in the same area where their ancestors did previously, providing an important connection to the land. Accordingly, the mitigation proposed by the Applicant is not sufficient to replace the natural resources that will be disturbed the project."

The first sentence of this passage suggests that the Tribes have a legal right to provide consultation on the provision of mitigation measures. This does not seem to be consistent with the CCZLDO or the CBEMP. Mr. Ingersoll does not cite any legal authority in support of this position for the Board to review, and it is not apparent in the record that such authority does in fact exist. This argument is not sufficiently developed to enable a response. *Deschutes Development v. Deschutes County*, 5 Or LUBA 218 (1982).

In the next two sentences, Mr. Ingersoll discusses the importance of the "traditional tribal area" and states that the tribe has "one aboriginal territory," which he suggests provides rights to gather natural resources at this location. If this right is based on some legal treaty or other similar provision of law, Mr. Ingersoll fails to provide this information for consideration. This passage, to the extent it sets forth an argument why mitigation is insufficient, is not sufficiently developed to enable a response. *Deschutes Development v. Deschutes County*, 5 Or LUBA 218 (1982).

In his summary, Mr. Ingersoll concludes that "accordingly," the "mitigation proposed by the applicant is not sufficient to replace the natural resources that will be disturbed the project." Mr. Ingersoll does not elaborate on *why* the proposed mitigation is insufficient, and he does not provide any evidence to substantiate his claim. A party to a land use proceeding not only has the responsibility to explain the facts which support his or her claim, but also to inform the Board of the basis for which and approval or denial should be based. *Deschutes Development v. Deschutes County*, 5 Or LUBA 218, 220 (1982). Mr. Ingersoll has failed to provide any evidence or testimony that would provide a basis for denial. CBEMP Policy #18 specifically allowed an applicant to mitigate effects "by creation, restoration or enhancement of another area to ensure that the integrity of the estuarine ecosystem is maintained." To make the objection relevant, it would be important for the Tribes to explain specific reasons why the proposed mitigation will not "ensure that the integrity of the estuarine ecosystem is maintained." It is not apparent on its face why the proposed mitigation would not accomplish that goal, and Mr. Ingersoll's letter does nothing to cast doubt on the conclusion that such mitigation would in fact be successful.

Mr. Ingersoll uses the term "consultation," which brings up two potential sources of legal rights. Under Goal 2's coordination requirement requires plan conformance and consultation with affected units of government,

B. REGIONAL, STATE AND FEDERAL PLAN CONFORMANCE

It is expected that regional, state and federal agency plans will conform to the comprehensive plans of cities and counties. Cities and counties are expected to take into account the regional, state and national needs. Regional, state and federal agencies are expected to make their needs known during the preparation and revision of city and county comprehensive plans. During the preparation of their plans, federal, state and regional agencies are expected to create opportunities for review and comment by cities and counties. In the event existing plans are in conflict or an agreement cannot be reached during the plan preparation process, then the Land Conservation and Development Commission expects the affected government units to take steps to resolve the issues. If an agreement cannot be reached, the appeals procedures in ORS Chapter 197 may be used.

In this case, that consultation would have already occurred when the CBEMP was adopted. In this regard, Goal 16 requires local governments such as Coos County to select in advance those sites which would be suitable for mitigation from dredging activities:

5. When dredge or fill activities are permitted in intertidal or tidal marsh areas, their effects shall be mitigated by creation, restoration or enhancement of another area to ensure that the integrity of the estuarine ecosystem is maintained. Comprehensive plans shall designate and protect specific sites for mitigation which generally correspond to the types and quantity of intertidal area proposed for dredging or filling, or make findings demonstrating that it is not possible to do so.

Further consultation is required by CBEMP Policy # 18. The Board assumes that that CBEMP Policy # 18 is the source of the right to consultation referred to by Mr. Ingersoll. That consultation process is discussed at page 118, *infra*.

Nonetheless, Mr. Ingersoll's letter brings up a more broad point. His letter appears to be saying that no development of any kind should be allowed in the Coos Bay Estuary because of the negative impact it will have on salmon, crabs, and other marine life. However, it is important for the parties to realize that the subject property has already been zoned for urban density industrial uses, and specifically for water dependent development. As a result, the Comprehensive Plan and land use regulations have already factored in a *certain amount* of disruption of habitat via dredging and other construction, and allows mitigation as a method to prevent a net loss of habitat. Had the drafters intended no such negative effects on the environment, they would have zoned the entire estuary in a manner that makes it off limits to development. Arguments that no development should be allowed in the Coos Bay Estuary come across as nothing more than a collateral attack on the zoning for this land / water.

As mentioned above, the opponents such as Ms. McCaffree argue that there is no (or at least not a sufficient) public need for the natural gas that will be exported or imported through this facility Exhibit 60. If this were true, why would the applicant be willing to spend hundreds of millions of dollars trying to build this facility? Ms. McCaffree and OSCC cite to a number of research and economic reports that discuss the current and future market for natural gas. *See e.g.*, Exhibits 60, 63. Other opponents point out that the small number of long-term operational jobs undercuts the applicant's claims of an economic boon to the region. (Exhibits 63, 86). The Board is inclined to believe that the evidence offered by the opponents on this point is not credible, given both the applicant's desire to spend hundreds of millions of dollars to move forward with the project, and also in the light of the Board's previous resolution of similar issues. Even so, the Board believes that FERC is better staffed and equipped to answer such broad public policy questions, and defers to FERC on these matters.

In summary, the Board concludes that the required "need" for dredging and fill exists here because the particular use proposed requires close and immediate access to a deep water marine port. This is a use that must be sited in an estuary and near-shore area, and cannot be sited in upland areas away from an estuary. For this reason, the Board finds that there is a substantial public benefit in allowing the applicant to conduct dredging in the 5-DA and 6-DA zones.

The Board also agrees with the applicant that CBEMP Policy #5 II does not apply to this case. Obviously, Policy #5 II is intended to implement Goal 16's Implementation Strategy 2 because its operative terms are identical to that Goal 16 provision. It applies, by its very terms, to situations where an applicant applies for an "other use or activity" that "could alter the estuary."

Despite the lack of clarity, the Board did find some meaningful guidance in DLCD research materials /manuals. According to DLCD publication entitled "Oregon Estuary Plan Book," the "Alterations" test applies as follows:

Other activities which could affect the estuary's physical processes or biological resources are also subject to review. These "other alterations" include but are not limited to: inwater structures, riprap, log storage, application of pesticides and herbicides, water intake or withdrawal, wastewater discharge, and flow-lane disposal of dredged material. Other alterations which do not involve dredge or fill are allowed if the requirements in 2, 3 and 4 are met [i.e., public need identified, alternatives analysis, and impact minimization].

However, as mentioned above, Coos County made many of the required findings for most, if not all, of these activities in its "Linkage" and "Exceptions" findings. It sets out the uses which are allowed for each CBEMP zone in the matrix for each zone. So there was no real need to rely on the optional approach that Goal 16 allowed, which is to create a category of "other uses and activities" and evaluate them on a case by case basis upon application.

The Public Trust Doctrine.

CBEMP Policy #5 (1)(b), as well as Statewide Planning Goal 16, state that the "Local government shall support dredge and/or fill only if such activities are allowed in the respective management unit, and: * * * * b. * * * the use or alteration does not unreasonably interfere with public trust rights[.]"

This standard expressly allows some degree of infringement on trust resources. It does not preclude all interference with public trust rights, and instead only limits "unreasonable" interferences.

A general overview of the Public Trust Doctrine is provided here to provide background to the Board on this issue. See generally *Illinois Central Railroad v. Illinois*, 146 U.S. 387, 13 S Ct 110, 36 L Ed 1018 (1892); *Shively v. Bowlby*, 152 U.S. 1, 54-55, 58 (1893), *aff'd sub nom. Bowlby v. Shively*, 30 P. 154 (Or. 1892); *Morse v. Division of State Lands*, 34 Or App 853, 859, 581 P2d 520 (1978), *aff'd* 285 Or 197, 590 P2d 709 (1979); *Brusco Towboat v. State Land Bd.*, 30 Or App 509, 567 P2d 1037 (1977), *aff'd in part as modified, rev'd in part*, 284 Or 627, 589 P2d 712 (1978); Joseph L. Sax, *The Public Trust Doctrine in Natural Resources Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 475-89 (1970).

Under English common law, title to lands underlying tidal waters was held by the king as an element of sovereignty. After the American Revolution, each of the original colonies became states and assumed their own sovereign powers. One aspect of such sovereignty was ownership of all submerged and submersible lands underlying navigable waters.⁵ Title to such land was not surrendered to the federal government upon adoption of the U.S. Constitution. Rather, by virtue of the Tenth Amendment, it was reserved to the states, subject only to limitations imposed by expressly conferred federal powers, such as the regulation of interstate commerce.⁶ *PPL Montana, LLC v. Montana*, 565 U.S. ___, 132 S Ct 1215, 1234 (2012). By the terms of the Oregon Admission Act, Oregon entered the union "on an equal footing with the other states * * *." Thus, upon its admission in 1859, title to submerged and submersible lands underlying navigable waters devolved upon the state as sovereign. As a result, the state of Oregon owns all navigable waters within the state as well as the land underneath such waters.

There are two elements to the state's interest, known by the Latin terms *jus privatum* and *jus publicum*. See *Shively v. Bowlby*, 152 U.S. 1, 11, 14 S Ct 548, 38 L Ed 331 (1894). The *jus publicum* aspect of the state's ownership is rooted in a philosophical conception of natural law. The principle that the public has an overriding interest in navigable waterways and lands underlying them is traceable at least to the Ordinance of Justinian in the Fifth Century A.D.

⁵ *Shively v. Bowlby*, 152 U.S. 1, 14 S Ct 548, 38 L Ed 331 (1894); *Mumford v. Wardwell*, 73 U.S. (6 Wall) 423, 18 L Ed 756 (1867); *Pollard's Lessee v. Hagan et al.*, 44 U.S. (3 How) 212, 11 L Ed 565 (1845); *Martin v. Waddell*, 41 U.S. (16 Pet) 366, 410, 10 L Ed 997 (1842).

⁶ *United States v. Holt Bank*, 270 U.S. 49, 46 S Ct 197, 70 L Ed 465 (1926); *Scott v. Lattig*, 227 U.S. 229, 33 S Ct 242, 57 L Ed 490, 44 LRA (ns) 107 (1913); *Shively v. Bowlby*, 152 U.S. 1, 14 S Ct 548, 38 L Ed 331 (1894).

Brusco Towboat, 30 Or App at 517. The right of the public to use the waterways for these purposes has always been recognized at common law. Navigable waterways are a valuable and essential natural resource and, as such, all people have an interest in maintaining them for commerce, navigation, fishing and recreation.

Unlike the state's *jus privatum* interest, the *jus publicum* cannot be completely alienated by the trustee (i.e. the state government). That hasn't stopped various states from trying, however, and lawsuits have sometimes arisen over a state's attempt to give away or sell the *jus publicum* interest in its waterways. The landmark case of *Illinois Central*, *supra*, involved an attempt by a local government to alienate the *jus publicum* by giving exclusive usage rights of a 1000+ acre portion of Lake Michigan to a private corporation. The City of Chicago and the State of Illinois had granted the right to a railroad to the bed of Lake Michigan for an area a mile in length along the shore and a mile out into the lake, which encompassed substantially the entire lake bed available for the harbor of the City of Chicago. Because of the *public* interest, the *jus publicum*, in the use of the waters, the court held that the governmental authorities had exceeded their power in granting the use of the bed of the lake to the railroad which could, for all practical purposes, impede navigation except as desired or permitted by the railroad. At the same time, it confirmed the right of the railroad to fill and destroy the shallow part of the harbor, which was not fit for practical navigation, and even went so far as to send the case back to the lower court for a determination whether certain areas had sufficient depth to be navigable.

Professor Joseph Sax discussed *Illinois Central* in his seminal law review article on the Public Trust Doctrine. He noted:

"The Supreme Court upheld the state's claim and wrote one of the very few opinions in which an express conveyance of trust lands has been held to be beyond the power of a state legislature. It is that result which has made the decision such a favorite of litigants. But the Court did not actually prohibit the disposition of trust lands to private parties; its holding was much more limited. What a state may not do, the Court said, is to divest itself of authority to govern the whole of an area in which it has responsibility to exercise its police power; to grant almost the entire waterfront of a major city to a private company is, in effect, to abdicate legislative authority over navigation."

The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention, 68 MICH L REV 473, 489 (1970). The article states, after a review of the cases, that:

"* * * what one finds in the cases is not a niggling preservation of every inch of public trust property against any change, nor a precise maintenance of every historical pattern of use. * * *"

"* * *"

"These traditional cases suggest the extremes of the legal constraints upon the states; no grant may be made to a *private party* if that grant is of such amplitude that the state will effectively have given up its authority to govern, but a grant is not illegal solely because it *diminishes in some degree the quantum of traditional public uses*." (Emphasis added.)

Traditionally, the Public Trust Doctrine was used to protect navigation, fishing, and commerce. For example, in *Shively v. Bowlby*, *supra*, the Oregon Supreme Court defined the holding of *Illinois Central* as follows:

"* * * [I]t was recognized as the settled law of this country that the ownership of and dominion and sovereignty over lands covered by tide waters, or navigable lakes, within the limits of the several States, belong to the respective States within which they are found, with the consequent right to use or dispose of any portion thereof, when that can be done without *substantial impairment* of the interest of the public in such waters, and subject to the paramount right of Congress to control their navigation so far as may be necessary for the regulation of commerce. * * *." (Emphasis added.) citing *Illinois Central*, 152 U.S. at 47.

Beginning in the 1970s, environmentalists began to view the Public Trust Doctrine more broadly as a duty upon the state to protect ecological values associated with a water resource. They began to argue that the states, as trustees for the people, must exercise active vigilance to prevent decay or "waste," (i.e. permanent damage to the asset). They argue that if the asset is wasted in the interest of one generation of beneficiaries over future generations, it is in effect an act of generational theft.

Entire books as well as a plethora of law review articles have been written on this later subject, but to date acceptance by courts of this ecological component of the Public Trust Doctrine has been somewhat limited. "[T]here is little modern case law on the Oregon PTD, giving rise to substantial questions about the extent of the doctrine and its effects on public and private rights in Oregon's natural resources." See Michael C. Blumm and Erica Doot, *Oregon's Public Trust Doctrine, Public Rights in Water, Wildlife, and Beaches*, 42 ENVIRONMENTAL LAW 375, 377-8 (2012).

Oregon courts have recognized public, or sovereign ownership, in the state's fish and wildlife resources,⁷ wetlands,⁸ and beaches.⁹ Oregon's Supreme Court has long upheld state authority to regulate fish harvests so that fish "may have an opportunity to propagate their

⁷ *Simpson v. Department of Fish and Wildlife*, 242 Or.App. 287, 255 P3d 565, 569-73 (2011).

⁸ See *Morse v. Oregon Div. State Lands*, 34 Or App 853, 581 P2d 520, *aff'd* 285 Or 197, 590 P2d 709 (1979).

⁹ *State ex rel. Thornton v. Hay*, 254 Or 584, 462 P2d 671 (1969) (relying on the doctrine of "custom.")

species, and be preserved from extermination.”¹⁰ Examples of other cases where courts found the PTD to be applicable include:

- ❖ *Just v. Marinette County*, 201 N.W.2d 761, 768 (Wis. 1972) (“The state of Wisconsin under the trust doctrine has a duty to eradicate the present pollution and to prevent further pollution in its navigable waters.”);
- ❖ *National Audubon Society v. Superior Court of Alpine County*, 658 P.2d 709, 721 (Cal 1983) (aka: the “Mono Lake” case, where the court found a duty to prevent over-appropriation of water from rivers);
- ❖ *Robinson Township v. Commonwealth*, 623 PA 564, 83 A3d 901 (2013) (super-siting law for fracking deemed to violate the public trust).
- ❖ *But See Kalmiopsis Audubon Society v. Division of State Lands*, 66 Or App 810, 820 n 11 (1984)(issuance of a gravel mining permit did not constitute a substantial impairment of the public interest).

The case of *Morse v. Division of State Lands*, 285 Or. 197, 590 P2d 709, 713-14 (1979) provides a local example of the limits of the public trust doctrine. *Morse* involved the City of North Bend’s efforts to obtain from the Division of State Lands a permit to fill 32 acres of Coos Bay for the purpose of extending a runway at its municipal airport. The Oregon Court of Appeals held that “the permit was beyond the authority of the Director because the public trust doctrine was intended to be incorporated into the statute and that the doctrine prohibited fills for non-water-related uses.” *Id.* at 200.

However, the Oregon Supreme Court reversed the Court of Appeals on this point, holding that the common law Public Trust Doctrine had no application under the facts of the case. The Supreme Court suggested that the Public Trust Doctrine would be triggered if there was a grant or sale of trust lands to a private party “which results in such substantial impairment of the public interest as would be beyond the power of the legislature to authorize.” Furthermore, the Supreme Court held that the Public Trust Doctrine did not limit “fills” to “those which were done for the purpose of facilitating water-related uses.” *Id.* at 203.

Rather than frame the key issue as being defined by the “Public Trust Doctrine,” the Supreme Court framed the key issue as relating to the “extent of the [statutory] authority granted to the Director to approve permits for fills” under the Fill and Removal law. *Id.* at 203. The Court determined that the purpose statement of Oregon’s Fill and Removal law was as follows:

The legislature expressed its policy in ORS 541.610 [now ORS 196.810], as follows:

“(1) The protection, conservation and best use of the water resources of this state are matters of the utmost public concern. Streams, lakes and other bodies of water in this state, including not only water and materials for domestic, agricultural and industrial use but also habitats and spawning areas for game and food fish, avenues for transportation and sites for public recreation, are vital

¹⁰ *State v. McGuire*, 24 Or. 366, 33 P. 666 (1893).

to the economy and well-being of this state and its people. Unregulated removal of material from the beds and banks of the waters of this state may create hazards to the health, safety and welfare of the people of this state. *Unregulated filling* in the waters of this state may result in interfering with or injuring public navigation, fishery and recreational uses of the waters. *In order to provide for the best possible use of the water resources of this state, it is desirable to centralize authority* in the Director of the Division of State Lands, and *implement control of the removal of material from the beds and banks or filling of the waters of this state.*"

Id. at 203-4. The Supreme Court went on to read ORS 541.610 in conjunction with ORS 541.625(2) [now ORS 196.825(3)] and concluded:

[The language in ORS 541.625(2)] demonstrates that the legislature intended to allow some interference with the preservation of navigation, fishing and public recreation. It suggests it was not intended to limit permits to water-related uses because it allows interference with such uses as long as the interference is not unreasonable. Whether or not the interference with water-related uses is unreasonable necessarily depends upon the extent of public need for the use which so interferes. The only way this can be determined is by weighing the extent of the public need for the fill against the interference with the named water-related uses. This, we believe, is how the statute was intended to be read.

Id. at 205. However, the Supreme Court ended up finding that the Fill and Removal statute imposed a duty upon the state to adopt findings balancing the public need for a non-water dependent use against "the detriment to the use of the waters in question for navigation, fishing, and recreational purposes." *Id.* at 207. The Supreme Court found that the Director did not adopt such findings, and instructed that the case be remanded to accomplish the necessary fact finding:

The extent of the need must be evaluated by the Director before he can balance it against the detriment to navigation, fishing and recreational uses of the water in question. This he failed to do. He also failed to make any ultimate finding of fact that the public need for the airport extension outweighed the detriment to such water-related uses.

Id. at 209. So *Morse* is really a fairly run-of-the-mill case pertaining to the statutory requirements of Oregon's Fill / Removal Fill statute, as opposed to being a lofty expansion of the common law Public Trust Doctrine.

In this case, the Fill / Removal law is not an approval standard for this land use case, so the standards set forth in ORS 196.825 and the *Morse* case do not directly apply. It does appear that the applicant would be required to obtain Removal/Fill permits from the Division of State Lands before commencing filling or dredging of the estuary to build the improvements at issue. Assuming that is true, those standards will presumably apply at that time.

As summarized above, the essential core concept underlying the Public Trust Doctrine is that the government cannot exclude the public from large portions of submerged lands or alienate (i.e. sell, gift, or grant an exclusive lease) large portions of submerged lands to private interests. The question posed here is whether conditional use permits at issue authorize the exclusive use of trust lands in the way prohibited by the public trust doctrine. Any grant or permit afforded to a private party which results in such substantial impairment of the public's interest as would be beyond the power of the legislature to authorize

The Board does not believe that there is a violation of the public trust doctrine in this case. If anything, the applicant is creating more "trust" land by excavating the upland and turning it into water surface.

In a recent case, *Chernaik v. Brown*, Case 16-11-09273, a Circuit Court judge in Lane County narrowly defined the scope of the Public Trust Doctrine as only applying to submerged and submersible lands, and not to waters of the State, beaches and shorelands, fish and wildlife, and the atmosphere. The *Chernaik* case is just one of a series of cases which have been filed by various environmental advocacy groups since 2011. Coined as the Atmospheric Trust Litigation or "ATL" cases, these cases are generally considered by legal analysts and commentators to be long-shots. See e.g., Andrew Ballentine, *Full of Hot Air: Why the Atmospheric Trust Litigation Theory is an Unworkable attempt to Expand the Public Trust Doctrine Beyond its Common Law Limits*, 12 DARTMOUTH L JOURNAL 98 (Fall 2014). One might even say that they are legal equivalent of a "hail-mary" pass in football. In fact, the environmental advocacy groups have fared very poorly, having lost their cases in as upwards of 27 jurisdictions, including Alaska,¹¹ Texas,¹² Arizona,¹³ Montana,¹⁴ Iowa,¹⁵ Minnesota,¹⁶ Kansas,¹⁷ New Mexico,¹⁸ Washington,¹⁹

¹¹ *Kanuk v. v. State of Alaska*, 335 P.3d 1088, 2014 Alas. LEXIS 192 (Sept 12, 2014), *rehg denied*, 2014 Alas LEXIS 212 (Oct 28, 2014).

¹² See *Tex. Comm'n on Envtl. Quality v. Bonser-Lain, et al.*, No. 03-12-00555-CV (2014).

¹³ *Butler v. Brewer*, Ariz Ct App (2013).

¹⁴ *Barhaugh v. State*, 264 P.3d 518 (Mont. 2011).

¹⁵ *Filippone ex rel. Filippone v. Iowa Dept. of Natural Resources*, 829 N.W.2d 589 (2013).

¹⁶ *Aronow v. Minnesota*, Minn Ct App. case number A12-0585 (Unpublished op). Oct 1, 2012).

¹⁷ In *Farb v. Kansas*, a case filed in Shawnee County in 2012, was dismissed in June of 2013. Kansas District Court Judge Rebecca Crotty issued an opinion stating that the plaintiff had to first petition Kansas Dept. of Health and Environment (KDHE) to make the CO2 emissions reductions before she could bring suit.

¹⁸ *Sanders-Reed v. Martinez*, 350 P.3d 1221 (N.M. Ct App 2015).

¹⁹ *Svitak ex rel. Svitak v. State*, 178 Wash.App. 1020, No. 69710-2-I, 2013 WL 6632124 (Wash.Ct.App. Dec. 16, 2013). But see *Foster v. Washington Department of Ecology*, Case No. 14-2-25295-1 SEA, Order dated Nov. 19, 2015. In *Foster*, Washington Circuit Court judge Hollis R. Hill held that the public trust doctrine applies to the protection of the atmosphere, including limits on greenhouse gas (GHG) emissions, but denied minors' petitions for stricter GHG regulations because the state agency has already commenced rulemaking. The court held that the state has "a constitutional obligation to protect the public's interest in natural resources held in trust for the common

Pennsylvania,²⁰ North Carolina, as well as losing cases filed against Federal agencies.²¹ Unfortunately, the practitioners advancing the ATL are not very forthcoming about their loses, and their lack of candor with this tribunal is duly noted with disapproval.

Not surprisingly, the Circuit Court Judge in *Chernaik* concluded exactly as this hearings officer has found in previous cases, stating as follows:

“Reviewing the relevant case law, it appears to this Court that, historically, courts applying the public trust doctrine have merely prevented the state from entirely alienating submerged and submersible lands under navigable waters.”

Slip op. at p. 13. As expected, the *Chernaik* petitioners have filed an appeal to the Court of Appeals. That case is currently pending, and a decision is not likely prior to this case being decided. In light of this precedent, this Board does not recommend any departure from the ordinary and traditional understanding of the public trust doctrine.

Even so the PTD / climate change theory advanced by the opponents in this case has been overwhelmingly rejected by the courts, it does warrant discussion here for a different reason. The Board is of the opinion that the Public Trust Doctrine would, as an obvious example, not allow the State of Oregon to give an LNG terminal operator exclusive rights to use Coos Bay. This case does not present that particular hypothetical. The applicant is proposing to bring in approximately 100 LNG tankers a year. See Applicant’s Exhibit 35 (Amergent Techs). Essentially, that equates to a ship arriving or departing every other day.

The concern expressed by opponents is that because of the fact that LNG tankers have a “security zone,” other users will be significantly delayed in their quest to reach their designations because they have to stay clear of the LNG tankers.

In reviewing this issue, the Board is once again mindful of prior decisions. The previous hearings officer, Ms. Anne Briggs, stated that she was uncertain as to whether “the use of the bay itself for the transport of LNG tankers is within the purview of this review.” Exhibit 60. But she went on to say that the port had “not adequately justified the impact of the proposal on commerce, namely commercial fishing within the bay, and recreation.” The Board disagreed

benefit of the people of the state.” The state argued the public trust doctrine, which has been applied to navigable waters, cannot apply to the atmosphere. The Court disagreed. However, since the agency had already begun rulemaking to establish GHG emission standards taking into account science as well as economic, social, and political considerations, the Court found that the agency could not be found to be acting arbitrarily or capriciously, and the court denied the petitions. The precedent value of *Foster* is low, however, because Washington’s State Constitution provides that some rights beyond those enumerated in the document are “retained by the people.” The Washington Department of Ecology’s enabling legislation asserts “a fundamental and inalienable right . . . to live in a healthful and pleasant environment.” The court rather generously read this provision as implying an environmental right as a non-enumerated “right to preservation of a healthful and pleasant atmosphere,” which could be violated by insufficient action on climate change.

²⁰ *Funk v. Commonwealth*, Case No. 713 M.D. 2012, July 3, 2013.

²¹ *Alec C. v. Jackson*, 863 F. Supp. 2d 11 (2014), *cert den.*, (2014).

with the hearings officer's recommendation on this point, finding that "there would be no 'unreasonable interference' with public trust rights." *Id.*

Even so, the Board's previous decision has not ended the debate for the opponents. OSCC's comments dated January 25, 2016 are representative of the current concern expressed by the opponents:

The Amergent Technologies memo dated January 8, 2016, first addresses the impact on other shipping vessels that require access to the deep draft channel. The memo concludes that because overall shipping has declined in Coos Bay, these impacts will be minimal. The memo next dismisses impacts to any other vessels (not requiring the deep water channel) such as fishing, commercial, and recreational boats, as having "free access to the waterway as long as they do not approach or enter the 500-yard security zone established around the vessel by the Coast Guard and follow the navigational rules of the road." This statement fails to acknowledge that in several places along Coos Bay, the navigable area of the bay itself is less than 1,000 yards across. In other words, it would not be possible for vessels coming and going through the Bay to have "free access" where it is not possible to remain outside the 500-yard exclusion zone.

Jordan Cove's project unreasonably interferes with public trust rights in fishing. The LNG tanker exclusion zones would create delays in the extremely short and regulated commercial fishing season. Due to heavily regulated fishing seasons, missing just one drift could cost thousands of dollars. Significantly, LNG tankers are unannounced for security reasons. As a result, private and commercial boats will not have the opportunity adjust river use habits, as suggested by the Amergent Tech [memo].

See Letter from Courtney Johnson, dated January 25, 2016, at p. 2-3. Exhibit 81.

Amergent Tech responds to this type of criticism in a memorandum dated January 25, 2016. See Applicant's Exhibit 69. The testimony from Amergent Techs provides clarifications regarding the limited impacts caused by LNG vessel passage and docking in Coos Bay. Importantly, the memo clarifies that the Safety / Security zones are not "exclusion zones." Rather, they are regulated navigation areas. Essentially, that means that the Coast Guard will control traffic near the LNG ships but will still allow boat pilots transit the zone on a case-by-case basis. The Board's understanding of this explanation is that the Coast Guard will let known vessels pass but can force ably exclude vessels or delay that it does not recognize. As a practical matter, local commercial fisherman operating known vessels should experience no significant delays as they will receive permission from the COTP to proceed. Less frequent users of the bay, such as recreational boaters, may experience some delay as the COTP makes efforts to

identify them and conduct a threat assessment. Given that clarification, the Board believes that there will be no unreasonable interference with public trust rights. The Board imposes a condition of approval that the applicant be limited to approximately 100 LNG tankers per year, consistent with the testimony from Amergent Techs.

Furthermore, the discussion of the Fill and Removal law in *Morse* brings up two final points related to the Public Trust Doctrine. It is the State of Oregon, not Coos County, that owns the *jus publicum* in the navigable waters. See ORS 196.825(1) & (2). Second, the comments argue that the government's obligation is that of a fiduciary as that term is used in Agency law (i.e. a trustee for non-profit corporation). Both of these suggestions seem to be flawed and unworkable.

The county, in an effort to comply with Goal 16, added an approval standard for Fill and Removal in an estuary which requires that the use or alteration does not unreasonably interfere with public trust rights. That requirement is not an absolute prohibition on interference with public trust rights, but does seem to establish some limits based on the reasonableness of such interference. Nonetheless, it is ultimately a question for DSL (i.e. the state agency tasked with implementing the Fill and Removal law) to resolve. Statewide Planning Goal 16 Implementation Requirement 3 states:

3. *State and federal agencies shall review, revise, and implement their plans, actions, and management authorities to maintain water quality and minimize man-induced sedimentation in estuaries. Local government shall recognize these authorities in managing lands rather than developing new or duplicatory management techniques or controls. Existing programs which shall be utilized include:*

d. The Fill and Removal Permit Program administered by the Division of State Lands under ORS 541.605 - 541.665. (Emphasis Added).

DSL is required by statute (ORS 196.825(1)) to make two determinations in issuing a removal-fill permit:

1. The project described in the application must be consistent with the protection, conservation and best uses of the water resources of the state.
2. The project does not unreasonably interfere with preservation of waters for navigation, fishing and public recreation.

See, e.g., Moe v. Division of State Lands, 31 Or App 3, 569 P2d 675 (1977) (Error to approve fill when findings reflect an admission by the Director that the known fishery values of 20 acres of submerged Columbia River land proposed for fill appeared to be greater than speculative

economic benefits of proposed fill for an industrial park); *Saxon v. Division of State Lands*, 31 Or App 511, 570 P2d 1197 (1977).

Because this legal requirement arises from the Public Trust Doctrine, it requires a finding that state-owned submerged/submersible lands are involved. If such lands are involved, then DSL must determine whether the waterway is used for navigation, fishing and public recreation. If so, then DSL determines whether the project would interfere with those public trust uses. If it would, then DSL determines whether that interference would be "reasonable." Thus, in light of the fact that DSL enforces the Fill and Removal law, it seems that Coos County enforcement of this CBEMP provision is also satisfied by a condition of approval which makes County approval contingent on DSL approval of Fill and Removal permits, to the extent they are needed.

One opponent who holds particularly novel views on this topic even goes so far as to say that "under the Public Trust Doctrine, the Planning Department has a fiduciary obligation to protect the atmosphere from the effects of human-induced global energy imbalance." See Ltr. from Julia Olson dated January 12, 2016, Exh. 68. In her letter, Ms. Olson goes on to say that the "Planning Department may not manage the trust resources in a way that substantially impairs the atmosphere, the climate system, our oceans or water supply, or the public interest in a healthy atmosphere." *Id.* Moving from such aspirational platitudes to more specifics, she asserts, without citation, that "the Planning Department, as trustee, must work collectively with other local officials and agencies to prepare and implement a County Climate Recovery Plan based on the best available science to manage and protect trust resources for the continued benefit of present and future generations of citizens." *Id.*

The Board's rejects Ms. Olson's contentions on this point. As an initial matter, these comments raises the questions as to who is the trustee of the public trust in the atmosphere. Ms. Olson suggests that it is the Planning Department. However, in the *Chernaik* case, *supra*, the plaintiffs sued the State of Oregon in its capacity as the trustee. Is the Planning Department a "necessary party" subject to joinder in that litigation due to its status as a co-trustee? This raises the broader question: can there be multiple trustees who manage the atmospheric "trust"? In her letter, Ms. Olson seems to think so, and describes the Planning Department as a "co-trustee." Exh. 68 at p. 3.²² In fact, she seems to view all of Oregon's planning departments as trustees. One wonders if other nations such as China and India are co-trustees as well, and, if so, has someone sued them seeking to fulfill the same trust obligations? Of course, if every governmental body is a co-trustee, then there is really no trustee at all, and no one trustee can be

²² As far-fetched as it seems, it is not without precedent. In *Robinson Township v. Commonwealth*, 623 PA 564, 83 A3d 901 (2013), a plurality of the Pennsylvania Supreme Court adopted a similar holding with regard to Article I, Section 27 of the Pennsylvania Constitution, stating:

The Commonwealth is named trustee and, notably, duties and powers attendant to the trust are not vested exclusively in any single branch of Pennsylvania's government. The plain intent of the provision is to permit the checks and balances of government to operate in their usual fashion for the benefit of the people in order to accomplish the purposes of the trust. This includes local government. (Emphasis added).

held accountable for anything because they have no control over the trust assets. Furthermore, what happens when the two (or more) trustees disagree about how to manage the trust? And if each trustee "must work collectively with other local officials and agencies" on solving climate change, aren't we right back in the same political viper's nest that the *Chernaik* plaintiffs were trying to avoid in the first place by resorting to the courts?

Second, it is true that courts have used flowery language in various court decisions about the government being a "trustee" of public resources. In one case, the court stated that: "[t]he state, as trustee for the people, bears the responsibility of preserving and protecting the right of the public to the use of the waters [for navigation, fishing, and recreation]." *Oregon Shores Conservation Coalition v. Oregon Fish and Wildlife Comm'n*, 62 Or App 481, 493, 662 P2d 356 (1983). However, the Board is not aware of a general line of cases where courts have analyzed trust responsibilities under actual fiduciary law. Indeed, the Brief of Amicus Curiae law professors in *Chernaik* is exceptionally weak on this point. See Amicus Brief, at p. 37-39. Therein, the Amicus states that "[T]here simply can be no trust without fiduciary duties." *Id.* at 37. Of course, this presupposes that the public trust is the same kind of trust. In truth, the public trust is more of a legal fiction than anything else, particularly in any expanded form argued for by Ms. Olson. See generally, James L. Huffman, *Speaking of Inconvenient Truths – A history of the Public Trust Doctrine*, 18 DUKE ENV. LAW AND P. FORUM., 1-103 (Fall 2007).

In any event, the primary case cited by Amicus presents a rather extreme example. In *Robinson Township v. Commonwealth*, 623 PA 564, 83 A3d 901 (2013), the Pennsylvania Supreme Court struck down several sections of a 2012 fracking super-siting law known as "Act 13 of 2012." This law, which appears to have written by the oil & gas industry for the oil and gas industry, had called for the express preemption of local zoning rules relating to oil and gas development, and a requirement that municipalities allow oil and gas development in all zoning areas. So it comes as no surprise that the Pennsylvania Supreme Court struck it down. The irony is that the justices could not even agree on a unified legal theory, and the majority decision could only muster three justices to invoke the "public trust" doctrine. Thus, the decision represents a "plurality" opinion which is not binding on Pennsylvania Courts and has little precedential value. See John C. Dernbach, *The Potential Meaning of a Constitutional Trust*, 45 ENVTL. L. 463, 479 (2015). Furthermore, the bulk of the opinion rests on a specific constitutional provision that is unique to the Commonwealth of Pennsylvania: the so-called "Environmental Rights Amendment."²³ Invoking this law, the 3-judge plurality stated:

²³ Article I, Section 27 of the Pennsylvania Constitution was enacted in 1971 and reads as follows:

The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.

PA. CONST. art. I, § 27. Notably, Oregon does not appear to have a similar counterpart. In any event, until *Robinson*, the Pennsylvania provision has been watered down by a series of court decisions, and was generally considered not to be a provision of much consequence. *Payne v. Kassab*, 14, 312 A.2d 86, 97 (1973). 14 Pa.Cmwltth.

As trustee, the Commonwealth has a duty to refrain from permitting or encouraging the degradation, diminution, or depletion of public natural resources, whether such degradation, diminution, or depletion would occur through direct state action or indirectly, e.g., because of the state's failure to restrain the actions of private parties.

Id. at 656. Nonetheless, these judges also hedge their bets by invoking a discussion of substantive due process limits on the police power:

[W]e do not perceive [the environmental rights amendment] ... to deprive persons of the use of their property or to derail development leading to an increase in the general welfare, convenience, and prosperity of the people. But, to achieve recognition of the environmental rights enumerated in the first clause of [the amendment] as "inviolable" necessarily implies that economic development cannot take place at the expense of an unreasonable degradation of the environment. As respects the environment, the state's plenary police power, which serves to promote said welfare, convenience, and prosperity, must be exercised in a manner that promotes sustainable property use and economic development.

Id. at 654. Not surprisingly, even the lower Pennsylvania courts have not received *Robinson Township* with robust enthusiasm. See *Dernbach*, *supra*, at 489-94. But regardless of what can be said of Pennsylvania's unique experiment with constitutional trusts, the *Robinson Township* case provides only the thinnest of reeds on which an Oregon Court could base a decision. While it is certainly within the prerogative of the Oregon Supreme Court to expand the public trust doctrine as far as they deem fit, this Board does not feel as emboldened.

The Amicus brief in *Chernaik* also cites to *Geer v. Connecticut*, 161 U.S. 519, 534, 16 S.Ct. 600 (1896) *overruled on other grounds*, *Hughes v. Oklahoma*, 441 U.S. 322 (1979), for the statement that: "it is duty of the legislature to enact such laws as will best preserve the subject of the trust, and secure its beneficial use in the future to the people of the state." The full quote, which is itself a quote from the Illinois Supreme Court, does not make the point that Amicus seeks to make. In fact, it downplays the legislature's duty to any particular citizen:

'So far as we are aware, it has never been judicially denied that the government, under its police powers, may make regulations for the preservation of game and fish, restricting their taking and molestation to certain seasons of the year, although laws to this effect, it is believed, have been in force in many of the older states

491, 323 A.2d 407 (1974); *Commonwealth v. National Gettysburg Battlefield Tower, Inc.*, 454 Pa 193, 311 A2d 588 (1973).

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since the organization of the federal government. * * * The ownership being in the people of the state, the repository of the sovereign authority, and no individual having any property rights to be affected, it necessarily results that the legislature, as the representative of the people of the state, may withhold or grant to individuals the right to hunt and kill game, or qualify or restrict, as in the opinions of its members will best subserve the public welfare. Stated in other language, to hunt and kill game is a boon or privilege, granted either expressly or impliedly by the sovereign authority, not a right inherent in each individual; and consequently, nothing is taken away from the individual when he is denied the privilege, at stated seasons, of hunting and killing game. It is, perhaps, accurate to say that the ownership of the sovereign authority is in trust for all the people of the state; and hence, by implication, it is the duty of the legislature to enact such laws as will best preserve the subject of the trust, and secure its beneficial use in the future to the people of the state. But, in any view, the question of individual enjoyment is one of public policy, and not of private right.

Id. at 534. The Court, in so holding, is really doing nothing more than affirming the “police power” of the state to regulate wild game for the public health, safety, and welfare, as opposed to setting up a formal fiduciary relationship between government and individual citizens.

In fact, in general, it seems that courts use the term “Public Trust Doctrine” more as a legal fiction; as a means to authorize government authority over the trust property (res), as opposed to a formal fiduciary with trust responsibilities. In a typical trust case, a trustee “holds legal title or equitable title to the property placed in his possession,” but the trustee “may or may not be subject to the beneficiary’s control.” *Nelson v. Servold*, 687 F2d 278, 282 (1982). The Board’s review of the applicable case law concerning the PTD reveals that courts are generally much more interested in asserting governmental authority over things that are uniquely “public” (river, wild animals, beaches) rather than seeking governmental accountability to the public as beneficiaries of a trust. Again, Oregon Courts can and will do whatever they see fit with the *Chernaik* case. The Board will not be leading the charge to essentially create legislative policy via a quasi-judicial mechanism.

c. Adverse impacts are minimized.

This requirement appears to stem from Statewide Planning Goal 16, Implementation Measure 1. No party briefed the contours of this requirement in detail. *See Generally Oregon Coast Alliance v. City of Brookings*, __ Or LUBA __ (LUBA No. 2015-037, July 06, 2015); *People for Responsible Prosperity v. City of Warrenton*, 52 Or. LUBA 181 (2006).

As mentioned above, the applicant is proposing to engage in dredging operations in the 5-DA and 6-DA zones. *See supra* at p. 67. The special conditions for these two zones require an applicant to “minimize impacts” associated with the dredging. The Board interprets this to limit

dredging to only that amount and those locations which are reasonably needed to accomplish the purposes for which the dredging is being proposed, and to use best management practices when conducting such dredging. At a minimum, this requires the applicant to conduct an impact assessment, and suggest that consideration must be given to design options which reduce the amount of dredging needed. *Compare Sisters Forest Planning Committee v. Deschutes County*, 48 Or LUBA 78 (2004) (similar approach used).

In this case, the applicant proposes many measures to avoid and minimize impacts to waters of the state. See Applicant's Exhibit 20. (6.8 Subpart H). Given the expense of dredging, this tends to be a self-policing standard, and no party in this case suggests that the applicant is seeking to perform more dredging than is needed to support their operation.

The opponents contend that adverse impacts resulting from dredging associated with the Slip, Access Channel, and Barge Berth have not been minimized. See, e.g., McCaffree Letter dated January 12, 2016, at p. 24-25, Exhibit 60. However, the Board relies upon the memorandum from David Evans & Associates, Inc. ("DEA"), which concludes that Project dredging activities will be consistent with this aspect of this policy. See Applicant's Exhibit 72 at 1-4. See also Applicant's Exhibit 20. (6.8 Subpart H). In reaching this conclusion, DEA relies upon additional evidence in the record regarding the limited, short-term impacts associated with dredging. *Id.* The DEA memo is unrebutted by any comparable expert testimony, and constitutes substantial evidence.

The bulkhead also appears to be the minimum length required to meet the applicant's needs for the barge berth. The barge berth appears to be roughly 500 foot in length and 230 feet in width. See Figure 7. The applicant submitted an Equipment Transportation Study dated January 7, 2014 from Black & Veatch that discusses the need to use a barge berth as opposed to using overland travel via roadways or rail. See Applicant's Exhibit 16. The study concludes that rail and roadway delivery of oversized materials poses significant challenges, and that all of the major large equipment and modules must be brought to the site via ocean transit and offloaded on the barge dock. The study depicts an image showing the size the delivery vessel in relation to the size of the overall length of the barge berth, and the two appear to be similar in length. The study also shows the limitations on trucking and rail options. This unrebutted study constitutes substantial evidence that the barge berth is needed and is designed to be the minimum size required to meet the operational needs of the applicant.

**d. Consistency with requirements of State and Federal Law,
Including Section 404 of the Clean Water Act (CWA).**

As previously mentioned, Statewide Planning Goal 16 Implementation Requirement 3 states:

*3. State and federal agencies shall review, revise, and implement their plans, actions, and management authorities to maintain water quality and minimize man-induced sedimentation in estuaries.
Local government shall recognize these authorities in managing*

lands rather than developing new or duplicatory management techniques or controls. Existing programs which shall be utilized include:

* * * * *

d. The Fill and Removal Permit Program administered by the Division of State Lands under ORS 541.605 - 541.665. (Emphasis Added).

Regrettably, no party briefed the meaning or effect of this implementation strategy. Nonetheless, the Board believes that the point to this measure is to reinforce the concept that the County should not attempt to duplicate the role of state agencies in the permitting process, but should instead impose conditions of approval requiring the applicant to obtain required permits from applicable state agencies.

e. **Evidence of Sedimentation from Dr. Tom Ravens, University of Alaska.**

On page 23 of her letter dated January 12, 2016, Ms. McCaffree cites to previously submitted testimony from Dr. Tom Ravens, and states that "[o]ur sedimentation expert actually proved [Pacific Connector] to be wrong on this issue * * *." This statement is demonstrably false. In fact, the hearings officer previously rejected Dr. Ravens' analysis. See Hearings Officer Recommendation HBCU 10-01 (Remand) at pp. 40-57, which is incorporated herein by reference. Ms. McCaffree's suggestion to the contrary is not well taken. In fact, it reflects poorly on the commentator to re-submit previously-rejected testimony as accepted "fact," particularly since no additional context or analysis is provided. Merely recycling old arguments tends to lower the credibility of the party who submits them, and the Board encourages the parties to not diminish their arguments in such a manner.

#8 Estuarine Mitigation Requirements

Local government recognizes that mitigation shall be required when estuarine dredge or fill activities are permitted in inter-tidal or tidal marsh areas. The effects shall be mitigated by creation, restoration or enhancement of another area to ensure that the integrity of the estuarine ecosystem is maintained as required by ORS 196.830 (renumbered in 1989). However, mitigation shall not be required for projects which the Division of State Lands determined met the criteria of ORS 196.830(3).

This strategy shall be implemented through procedures established by the Division of State Lands, and as consistent with ORS 196.830 and other mitigation/restoration policies set forth in this Plan.

This strategy recognizes the authority of the Director of the Division of State Lands in administering the statutes regarding mitigation.

Board's Findings: CBEMP Policy 8 applies to dredging in the 5-DA and 6-DA zones for the access channel and Access Triangle, and shoreline stabilization in the 6-DA zone for the barge berth. Stated another way, both the "dredging, new" and "maintenance dredging of existing facilities" activities require CBEMP Policy 8 to be addressed. CBEMP Policy 8 requires that an applicant provide mitigation for estuarine dredge or fill activities permitted by the County. CBEMP Policy 8 specifically exempts these mitigation requirements where DSL has determined the application meets the criteria established at ORS 196.830(3). The following two part response is necessary.

1. The County has the ability to rely on DSL and the Corps' regulatory programs to ensure compliance with its own approval criteria.

Policy #8 Estuarine Mitigation Requirements recognizes that Department of State Lands (DSL) has the expertise to regulate mitigation. The applicant has applied for the necessary permits through the Oregon Department of State Land ("DSL") and the United States Army Corps of Engineers ("USACE") Coos County is involved in these permitting processes through the land use compatibility portion of the application. Therefore, the applicant has complied with this policy.

The applicant's mitigation proposal has been discussed with DSL, the Corps, and other involved state and federal resource agencies. The final form of the mitigation required of JCEP will be determined through the DSL and Corps permitting process. By including a condition of approval requiring compliance with the DSL and Corps programs, the County can ensure that its criteria under CBEMP Policy 8 have been met before work on the Project is initiated.

2. The last sentence in CBEMP Policy 8 reflects the County's reliance on the DSL program to resolve the scope and extent of any mitigation required.

In this case, DSL is evaluating the project under its own program. A copy of the Estuarine Mitigation Plan (Applicant's Exhibit 11, Part B) shows the applicant's response to this criterion and the mitigation requirement administered by DSL and the Corps.

The reference to ORS 196.830 bears examination at this time. ORS 196.830 relates to "estuarine resource replacement" as a condition for fill or removal from an estuary. The Oregon Legislature defined that term to mean the "creation, restoration or enhancement of an estuarine area to maintain the functional characteristics and processes of the estuary, such as its natural biological productivity, habitats and species diversity, unique features and water quality." ORS 196.830(1).

ORS 196.830(2) requires DSL to make mitigation a condition of its approval. ORS 196.830(3) states: "If the director requires estuarine resource replacement, the director shall consider:

- (a) The identified adverse impacts of the proposed activity;
- (b) The availability of areas in which replacement activities could be performed;

- (c) The provisions of land use plans for the area adjacent to or surrounding the area of the proposed activity;
- (d) The recommendations of any interested or affected state or local agencies; and
- (e) The extent of compensating activity inherent in the proposed activity."

As provided above, DSL's requirements address the same issues raised in the CBEMP. The Corps criteria for mitigation are similar to DSL's. The Board imposes a condition of approval, as stated above. Compliance with DSL's administrative rules for estuarine mitigation pursuant to ORS 196.830 and other mitigation requirements imposed by DSL and the Corps through the permits issued in response to the Joint Permit Application will satisfy CBEMP Policy 8. Thus, the County can ensure compliance with CBEMP Policy 8 by conditioning the County's approvals on compliance with DSL and Corps regulatory requirements.

The applicant asks the Board to find, in the alternative, that "CBEMP Policy 8 is not applicable based on the final sentence of this policy which states "... Mitigation shall not be required for projects which the Department of State Lands determined met the criteria of ORS 196.830(3)." In light of the recommended and accepted condition of approval, the Board does not need to address this issue.

OSCC argues that the applicant fails to mitigate for deep water habitat (i.e. <15 feet depth MLLW):

Construction of the access channel will also result in loss of aquatic habitat, and proposed mitigation is inadequate. The application lacks adequate mitigation for habitat that the applicant characterizes as "deep," up to -15 ft. MLLW. However, significant acreage will be impacted to construct the access channel and slip. This area is habitat both to ESA listed coho salmon and green sturgeon. Regardless of whether shallower areas are considered more important as habitat, the lack of mitigation for deep-water areas is a significant omission in the application.

See Letter from Courtney Johnson dated December 18, 2016, at p. 7. It is unclear how construction of an access channel will result in a "loss of aquatic habitat." Currently, the "habitat" in the deeper parts of Coos Bay (-15 ft. MLLW) consists of fine silt and sand. See Applicant's Exhibit 20, at p 24. There is no evidence that the deeper portions of the bottom of the Bay is vegetated or consists of anything other than sand, silt, and mud. In fact, the velocity of the tides undoubtedly keep plants from rooting in the deeper parts of the channel. Once dredging is completed, the same "habitat" that existed previously (sand, silt, and mud) will continue to exist, just at a deeper depth up to 60 feet. The Board believes that any impact on habitat will be temporary and is consistent with the management objectives of the various zones in which it will take place.

OSCC argues that the applicant's proposed mitigation measures may lead to saltwater intrusion in two groundwater wells. OSCC supports this argument by noting that:

[t]he applicant's supplemental materials include a technical memorandum from GSI dated August 14, 2014 [Applicant's Exhibit 58] addressing impacts to groundwater wells resulting from the proposed mitigation at Kentuck Slough. This report indicates that at least two wells are likely to be impacted by saltwater intrusion to groundwater.

See Letter from Courtney Johnson dated January 25, 2016, at p. 3. The contention is expressly raised under a heading titled "Estuary Mitigation Plan (CBEMP Policy #8)." *Id.* The Board denies this contention for two reasons. First, it misconstrues CBEMP Policy #8, which is concerned with mitigation to "ensure that the integrity of the estuarine ecosystem is maintained," not that groundwater wells are maintained. Second, the Board finds that applicant has rebutted this contention in a Technical Memorandum dated January 16, 2016 entitled "Alternatives for Replacement of Domestic Water Supply Wells for the Kerwin and Webb Residences, Kentuck Slough Mitigation Site Area, North Bend, Oregon." Exhibit 59. This report identifies two alternative locations for replacement wells in the event these two wells are impacted. OSCC does not present testimony that undermines this report. Accordingly, the Board finds that the report presents substantial evidence to support the conclusion that mitigation of impacts to the wells is possible, likely, and reasonably certain to succeed. The Board declines to impose a condition of approval requiring mitigation of impacts to the wells because the Board is limited to imposing those conditions that are necessary to ensure compliance with applicable provisions of the CCZLDO or the comprehensive plan, CCZLDO 5.0.350, and no party has established that mitigation of the wells is required to ensure compliance with CBEMP Policy 8 or any other aspect of the CCZLDO or comprehensive plan.

Other opponents make an attempt to discredit the applicant's proposed findings. However, their contentions to the contrary are too generalized to undermine the applicant's testimony. The applicant's proposed mitigation measures are adequate for the reasons explained by David Evans & Associates, Inc. in the memo dated January 26, 2016. See Applicant's Exhibit 72 at 5-6. This memo constitutes substantial evidence and is largely un rebutted.

#9 Solutions to Erosion and Flooding Problems

Local government shall prefer nonstructural solutions to problems of erosion and flooding to structural solutions. Where shown to be necessary, water and erosion control structures such as jetties, bulkheads, seawalls and similar protective structures and fill whether located in the waterways or on shorelands above ordinary high water mark shall be designed to minimize adverse impacts on water currents, erosion and accretion patterns.

- 1. Further, where listed as an "allowable" activity within the respective management units, riprap may be allowed in Development Management***

Units upon findings that:

- a. Land use management practices and nonstructural solutions are inadequate; and
- b. Adverse impacts on water currents, erosion and accretion patterns are minimized; and
- c. It is consistent with the Development management unit requirements of the Estuarine Resources Goal.

II. Further, where listed as an "allowable" activity within respective management units, riprap shall only be allowed in Conservation Aquatic (CA) units upon findings that:

- a. Land use management practices and nonstructural solutions are inadequate; and
- b. Adverse impacts on water currents, erosion and accretion patterns are minimized; and
- c. Riprap is consistent with the resource capabilities of the area and the purposes of maintaining Conservation management units.

III. Further, where listed as an "allowable" activity within respective management units, riprap shall only be allowed in Natural Aquatic (NA) units upon findings that:

- a. There is a need to protect from erosion: uses existing as of October 7, 1977, unique natural resources and historic archaeological values, or public facilities;
- b. Land use management practices and nonstructural solutions are inadequate;
- c. It is consistent with the natural management unit as set forth in this Plan and required by Goal #16; and
- d. Adverse impacts on water currents, erosion and accretion patterns and estuarine organisms and their habitat are minimized.

Implementation of this strategy shall occur through local review of and comment on state and federal permit applications for such projects.

This strategy is based on the recognition that nonstructural solutions are often more cost-effective as corrective measures, but that carefully designed structural solutions are occasionally necessary. The strategy also recognizes LCDC Goal #16 and #17 requirements and the Oregon Administrative Rule classifying Oregon estuaries (OAR 660-17-000 as amended June, 1981).

Board Findings: CBEMP Policy #9 is entitled "Solutions to Erosion and Flooding Problems." This policy applies to any shoreline stabilization activity which is necessary to protect the barge berth. The applicant has stated that vegetative methods are not adequate to protection because it cannot stabilize the filled material that comprises the slip and barge berth nor provide a secure place for vessels and barges to moor while loading and unloading. The applicant has further

stated that they have designed the smallest slip and barge berth possible. The applicant has also stated that it will minimize adverse impacts to the water currents, erosion and accretion patterns by avoiding the need for a construction platform, eliminating acoustic disturbance and utilizing a turbidity curtain to contain any sediment.

Open Cell sheet pile bulkheads and riprap are also included in the DSL Fill-Removal Permit application, which will be reviewed by and commented on by the DSL in coordination with the County. As the applicant notes, the Open Cell sheet pile bulkhead and riprap have been demonstrated to be necessary in order to stabilize the slip and barge berth and to protect them from natural forces. Furthermore, as described by the applicant, construction of the bulkhead and riprap have been carefully designed to minimize adverse impacts. See Application Narrative at p. 11 and Applicant's Exhibit 20.

Ms. McCaffree makes some generalized objections to the applicant's plans to add fill in the 6-DA zone. See Exhibit 60 at p. 21. These arguments are not well developed. Ms. McCaffree cites to Attachment 13 to Exhibit 60, which is a discussion of Shell's Sakhalin II LNG project in Avina Bay in Russia. As her testimony and accompanying evidence seem to indicate, a large amount of environmental damage occurred with that project.

The apparent goal of the opponent's testimony is to create doubt whether JCEP can conduct its construction activities as promised. As discussed above, however, this type of testimony can seldom form a basis for a denial, since it necessarily requires the decision-maker to speculate about future events. The decision-maker cannot simply assume that the applicant will fail to live up to its promises. To do so would be mere speculation. *Gann v. City of Portland*, 12 Or LUBA 1, 6 (1984).

Even so, even a cursory review of Ms. McCaffree's own evidence demonstrates that she is making an apples to oranges comparison. In Attachment 14 to Exhibit 60, McCaffree references an article written about the Shell's Sakhalin II LNG project:

In order to bring LNG tankers into Aniva Bay, Sakhalin Energy had to dredge the bottom near shore, then dump the mud - two million cubic meters of it, Lisitsyn says - farther out in the bay. The island's second-largest industry after oil is fishing, and Aniva Bay is home to a diverse ecosystem that could be threatened by the dredging.

Lisitsyn wanted the company to use a longer pier, requiring less dredging, and dump the material farther out at sea. Instead Sakhalin Energy pursued the cheaper near-shore option. Now Lisitsyn is taking Sakhalin Energy to court, seeking a full accounting of environmental damages in the bay. Among other things, he alleges some of the dredging was conducted during the summer, in violation of laws protecting salmon spawning.

As a notable difference, JCEP does not propose to randomly dump unregulated dredge spoils

into the ocean. FERC discusses the disposal of maintenance dredging in Chapter 2 of the FEIS. See Applicant's Exhibit 1 at p. 2-28. The preferred site is one that has been selected for that purpose by government agencies. This factual difference alone causes Ms. McCaffree's evidence pertaining to Shell's Sakhalin II LNG project to not be something that a reasonable decision-maker would rely on to make a decision.

Thus, to the extent that Ms. McCaffree attempts to raise a substantial evidence question via the arguments on page 21 of her January 12, 2016 letter, the Board rejects them in favor the applicant's expert evidence on the same topic.

#14 General Policy on Uses within Rural Coastal Shorelands

1. Coos County shall manage its rural areas within the "Coos Bay Coastal Shorelands Boundary" by allowing only the following uses in rural shoreland areas, as prescribed in the management units of this Plan, except for areas where mandatory protection is prescribed by LCDC Goal #17 and CBEMP Policies #17 and #18:

- a. Farm uses as provided in ORS 215.203;***
- b. Propagation and harvesting of forest products;***
- c. Private and public water-dependent recreation developments;***
- d. Aquaculture;***
- e. 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.***
- f. Single-family residences on lots, parcels, or units of land existing on January 1, 1977, when it is established that:***
 - 1. The dwelling is in conjunction with a permitted farm or forest use, or***
 - 2. The dwelling is in a documented "committed" area, or***
 - 3. The dwelling has been justified through a goal exception; and***
 - 4. Such uses do not conflict with the resource preservation and protection policies established elsewhere in this Plan;***
- g. Any other uses, including non-farm uses and non-forest uses, provided that the Board of Commissioners or its designee determines that such uses satisfy a need which cannot be accommodated at other upland locations or in urban or urbanizable areas. In addition, the above uses shall only be permitted upon a finding that such uses do not otherwise conflict with the resource preservation and protection policies established elsewhere in this Plan.***

This strategy recognizes (1) that Coos County's rural shorelands are a valuable resource and accordingly merit special consideration, and (2) that LCDC Goal #17 places strict limitations on land divisions within coastal shorelands. This strategy further recognizes that rural uses "a through "g" above, are allowed because of

need and consistency findings documented in the "factual base" that supports this Plan.

Board's Findings. CBEMP Policy 14 applies to the following proposed uses and activities:

- (1) In the 6-WD district:
 - Industrial and Port facilities
 - DMD,
 - Fill,
 - excavation to create new water surface,
 - shoreline stabilization in 6-WD (LNG terminal, slip, barge berth, west bridge site);
- (2) In the 7-D District:
 - Industrial and Port facilities,
 - DMD,
 - Fill,
 - Mitigation,
 - Restoration in 7-D (road and utility corridor, stormwater pond, gas processing facility, West Jordan Cove, East Bridge site); and
- (3) Land transportation facility in 8-WD (entrance).

These uses and activities are collectively addressed below.

The proposed uses and activities would be characterized as a "water-dependent commercial and industrial uses; water-related uses" under the language of subsection e. in Policy #14. The proposed uses and activities are not located in urban or urbanizable areas because they are outside the UGB and are not in a rural area built upon or irrevocably committed to non-resource use as identified in the Coos County Comprehensive Plan at Volume II - Coos Bay Estuary Management Plan, Part 3.3 - Statewide Goal Exceptions. Furthermore, the proposed uses and activities satisfies a need which cannot be accommodated on uplands or shorelands in urban and urbanizable areas (that is, within the Urban Growth Boundary ("UGB")) or in rural areas built upon or irrevocably committed to non-resource use because the proposed uses and activities are integral components of the entire Project, which cannot be accommodated within the UGB for the following reasons:

The Project needs to be located at a shoreline with frontage to a deep-draft channel, downstream of the railroad bridge (allows ships to turnaround and enhances safety of all ship traffic), and adjacent to a dredged access channel connecting the deep-draft channel to the slip and barge berth to provide vessels enough depth to maneuver and moor. The only location that provides all these characteristics is the proposed Project location on the North Spit which is not located in the UGB. See Applicant's Exhibit 3 (letter explaining why Project is water-dependent). See also Applicant's Exhibits 9 and 20 (Alternatives Analysis explaining why the North Spit was selected). Furthermore, the Project cannot be accommodated within the UGB because the Project must be located on the North Spit due to the need for vessels to pick up the LNG for exportation. See Applicant's Exhibits 9 and 20.

The barge berth will also be used to deliver large oversized components necessary to construct the Project. The location of the barge berth at this site avoids the need to travel on public roads or railways and provides direct access to the construction sites of the Project. The large components will not be able to fit via road or rail and as such require a delivery site in order to construct the Project. *See* Applicant's Exhibit 16 (Equipment Transportation Study).

OSCC also argues that the applicant fails to adequately explain why the marine terminal cannot be built with a smaller design, since the proposal is now for a single-use slip:

Several relevant criteria, including CBEMP Policy #14 General Policy on Uses within Rural Coastal Shorelands, and #5 Estuarine Fill and Removal, require the applicant to provide an analysis of alternatives to the proposed site location and development design. The change in the nature of the proposal from a multi-use slip to an LNG-only project requires a new alternatives analysis that proposes and analyzes "a slip that is sized to accommodate the LNG tankers and support vessels only, i.e., an alternative with a smaller terminal design and less significant impacts for the decision-makers and the public to evaluate." State of Oregon's 2014 DEIS comments, DEQ at 20. U.S. EPA submitted similar comments to FERC regarding the scope of the alternatives analysis. EPA Comments on 2014 DEIS (Feb. 11, 2015). The application includes a supplement to the alternatives analysis purporting to satisfy the requirements of the additional review requested by the federal agencies, including Army Corps of Engineers. The materials fail to adequately explain why a smaller design is not feasible for the single-use slip.

See Letter from Courtney Johnson dated December 7, 2015, at p.4 (Exhibit 3). OSCC does not explain why CBEMP Policy #14 would require a downsizing analysis. CBEMP Policy #14 requires consideration of whether the proposed use can be accommodated on alternative upland sites. OSCC does not present any analysis of alternative viable sites, nor is it apparent where such other sites could be located. The location of the proposed marine slip on a bend of the river is ideal because it allows the ships to be docked and turned around with relative ease.

OSCC also argues that the applicant does not show that the barge berth is required to be located in an upland location:

The applicant states that the barge berth will be used to transport large components of the liquefaction terminal and other project components to the site. The applicant provided evidence regarding the size of some components, however that evidence does not indicate that the components cannot be transported by road or rail. While the transportation reports indicate points of difficulty for access by road or rail, they do not conclude that transport by road

or rail is not possible. Further, the applicant's proposed development includes the creation of a large marine slip. The applicant has not explained why the marine slip cannot accommodate the proposed barge berth uses. Because the applicant has not demonstrated that the use of the berth 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, the proposal is not consistent with Policy #14.

See Letter from Courtney Johnson dated December 7, 2015, at p.4 (Exhibit 3). However, the applicant states that barge berth to be used during construction to deliver oversized components is proposed at the southeastern edge of the slip. The applicant's design appears to minimize the loss of public trust resources. The berth will also be used during operation of the Project to deliver or export large modules for repair or replacement. Given the past debate around the widening of the TPP and related traffic concerns discussed in this record, it seems disingenuous for anybody to suggest that land transportation would be a viable idea, particularly as it relates to oversized components. In fact, it seems as if consideration should be given to expanding the role of the barge berth to alleviate traffic on the TPP.

The proposed location redevelops an industrial-zoned site, a brownfield site that formerly held a fiberboard mill. Use of a more distant location may require the need to obtain and develop a new greenfield site.

Natural gas for the Project will be provided by the Pacific Gas Connector Pipeline (PGCP) to be built as part of the JCEP. The Project must be located at the terminus of the PCGP, which ends on the North Spit.

Placement of the Project adjacent to the SDPP allows the Project to utilize steam produced by the SDPP for the natural gas conditioning phase (removal of water, hydrogen sulfide, carbon dioxide, helium, and other contaminants from the natural gas that could cause difficulty during the liquefaction process). A more distant power plant could provide the power, but would be unable to satisfy this need, since transmission of high-temperature steam from a more distant source would be less practicable. Without a source to treat the natural gas, a replacement source would be required.

Siting the slip and barge berth immediately east of the slip, supports the Port's mission to assist and encourage world maritime trade and develop new and expanded overseas markets. This need is codified in ORS 777.065, which states in part, "... development and improvement of port facilities suitable for use in world maritime trade ... and the development of deepwater port facilities at Astoria, Coos Bay ... is declared to be a state economic goal of high priority." It is necessary to locate the slip and barge berth in this location because they are required for exportation of LNG and to deliver oversized components to the Project.

With respect to the land transportation facility specifically, the minor realignment of Jordan Cove Road satisfies two needs: (1) it improves the safety of the intersection of Jordan

Cove Road and TransPacific Parkway; and (2) it facilitates necessary vehicle access to the Project.

These needs cannot be accommodated on uplands or shorelands in urban and urbanizable areas or in rural exception areas for two reasons:

First, the location of the minor realignment is dictated by the existing location of Jordan Cove Road, which is not located in or near an urban area or rural exception area. If Jordan Cove Road were relocated to an alternative site in an urban area or rural exception area to avoid this minor realignment, it would defeat the connectivity and access offered by the existing road and would likely cause greater disruption in its new location than it does under current conditions.

Second, the Project cannot be accommodated within the UGB or on rural exception lands, because the Project requires a large number of contiguous acres that (1) allow water-dependent industrial uses, (2) are sparsely populated, (3) are compatible with surrounding uses, (4) have few navigation restrictions, (5) minimize environmental and safety impacts, and (6) minimize cargo transit distance. Sites that meet these characteristics are in short supply. See Applicant's Exhibits 9 and 20.

Furthermore, the final sentence of Policy #14 states that: "This strategy further recognizes that rural uses "a through g", above, are allowed because of need and consistency findings documented in the "factual base" that supports this Plan. The inventories and factual base portions of the Coos County Comprehensive Plan (CCP) at Volume II, Part 2, Section 5.8.2 and Section 5.8.3, attached as Applicant's Exhibit 25, generally concluded that large vacant acreages of industrial lands with deep-draft channel frontages are in short supply. The background report and findings further conclude that the North Spit is the only site available with sufficient size and necessary water-dependent characteristics suitable for future land needs for import and transshipment. The proposed uses and activities directly provide for import and transshipment to the North Spit.

For the aforementioned reasons and based upon evidence in the record, the Board finds that the proposed uses and activities satisfy a need that cannot be accommodated within the UGB or in a rural area irrevocably committed to non-resource use.

#16 Protection of Sites Suitable for Water-Dependent Uses and Special Allowance for new Non-Water-Dependent Uses in "Urban Water-Dependent (UW) Units"

Local government shall protect shorelands in the following areas that are suitable for water-dependent uses, for water-dependent commercial, recreational and industrial uses.

- a. Urban or urbanizable areas;***
- b. Rural areas built upon or irrevocably committed to non-resource use; and***
- c. Any unincorporated community subject to OAR Chapter 660, Division 022***

(Unincorporated Communities).

This strategy is implemented through the Estuary Plan, which provides for water-dependent uses within areas that are designated as Urban Water-Dependent (UW) management units.

I. Minimum acreage. The minimum amount of shorelands to be protected shall be equivalent to the following combination of factors:

- a. Acreage of estuarine shorelands that are currently being used for water-dependent uses; and**
- b. Acreage of estuarine shorelands that at any time were used for water-dependent uses and still possess structures or facilities that provide or provided water-dependent uses with access to the adjacent coastal water body. Examples of such structures or facilities include wharves, piers, docks, mooring piling, boat ramps, water intake or discharge structures and navigational aids.**

II. Suitability. The shoreland area within the estuary designated to provide the minimum amount of protected shorelands shall be suitable for water-dependent uses. At a minimum such water-dependent shoreland areas shall possess, or be capable of possessing, structures or facilities that provide water-dependent uses with physical access to the adjacent coastal water body. The designation of such areas shall comply with applicable Statewide Planning Goals.

III. Permissible Non-Water-Dependent Uses. Unless otherwise allowed through an Exception, new non-water-dependent uses which may be permitted in "Urban Water-dependent (UW)" management units are a temporary use which involves minimal capital investment and no permanent structures, or a use in conjunction with and incidental and subordinate to a water-dependent use. Such new non-water-dependent uses may be allowed only if the following findings are made, prior to permitting such uses:

1. Temporary use involving minimal capital investment and no permanent structures:

- a. The proposed use or activity is temporary in nature (such as storage, etc.); and**
- b. The proposed use would not pre-empt the ultimate use of the property for water-dependent uses; and**
- c. The site is committed to long-term water-dependent use or development by the landowner.**

2. Use in conjunction with and incidental and subordinate to a water-dependent use:

-
- a. Such non-water-dependent uses shall be constructed at the same time as or after the water-dependent use of the site is established, and must be carried out together with the water-dependent use.
 - b. The ratio of the square footage of ground-level indoor floor space plus outdoor acreage distributed between the non-water-dependent uses and the water-dependent uses at the site shall not exceed one to three (non-water-dependent to water-dependent).
 - c. Such non-water-dependent uses shall not interfere with the conduct of the water-dependent use.

This policy shall be implemented through provisions in ordinance measures that require an administrative conditional use application be filed and approved, and the above findings be made prior to the establishing of the proposed uses or activities.

Board Findings: CBEMP Policy 16 provides that the shoreland area within the estuary is suitable for, and should be protected for, water-dependent commercial, recreational, and industrial uses. *See generally Oregon Shores Cons. Coalition v. Coos County*, 49 Or LUBA 21 (2005), *The Industrial and Port Facilities* (Slip, LNG Terminal, and Barge Berth) that are proposed to be located in the 5-WD and 6WD zones are subject to Policy #16.

The applicant asks the Board to find that this policy is not applicable to the Project because the subject property is not situated in any of the areas regulated by CBEMP Policy 16 (urban or urbanizable areas, rural areas built upon or irrevocably committed to non-resource use, or unincorporated communities) and is not an area designated Urban-Water Dependent. The Board tends to agree, and notes that CBEMP Policy #16 does say that "[t]his strategy is implemented through the Estuary Plan, which provides for water-dependent uses within areas that are designated as Urban Water-Dependent (UW) management units." *See also Oregon Shores Cons. Coalition v. Coos County*, 49 Or LUBA 1 (2005) (discussing how CBEMP Policy 16 applies in the context of 56-UW and similar zones.). However, CBEMP Policy #16 also states that it applies to "rural areas built upon or irrevocably committed to non-resource use," and that certainly seems to be the case with the 6-WD zone, and perhaps the 5-WD zone as well. Nonetheless, without more to go on, this may be a thin reed to base the applicant's desired legal conclusion.

As an alternative, the applicant asks the Board to find that CBEMP Policy 16 applies to the Project and is satisfied in this case. As support for this conclusion, the applicant asks the Board to rely upon the letter from Bob Braddock explaining why the Project is water-dependent. *See Applicant's Exhibit 3*. The Board finds that the proposed deep water marine slip and LNG terminal is a "water dependent use" located within a zoning district that allows such uses. The proposed port facility is consistent with this policy because it will promote the development of abutting areas for industrial uses. The Board's finding on this point is consistent with the manner in which the Board interpreted the Ordinance in 2007. *See Order 07-11-289 PL*, at p. 20.

To the extent that Ms. McCaffree argues that the Project is not consistent with this Policy 16, the Board agrees with the applicant that Ms. McCaffree's contention is not adequately developed for response by the Board.

OSCC argues that "[t]he applicant has not demonstrated compliance with CBEMP Policy #16. The applicant has not demonstrated a need for the barge berth, either for the transport, or as a unique and additional development to the marine slip." See Letter from Courtney Johnson dated December 7, 2015, at p.4 (Exhibit 3). The Board believes that the applicant has provided sufficient justification for building the marine slip and barge berth. See "Equipment Transportation Study, Black & Veatch, dated January 7, 2014. Applicant's Exhibit 16; Supplemental Alternatives Analysis Report, David Evans & Associates, May 2015. Applicant's Exhibit 20.

OSCC also contends that "many components of the project are not water-dependent." See Letter from Courtney Johnson dated Dec. 18, 2015, at p. 2 (Exhibit 17). Specifically, she notes that USACE has questioned whether the project is water-dependent and suggested that the applicant evaluate certain alternatives. The Board addresses these alternatives at p. 34, *supra*. Moreover, in the subsequent open record periods, OSCC did not take issue with Mr. Braddock's letter found at Exhibit 30.

For these reasons, the Board finds that Policy #16 is satisfied.

#17 Protection of "Major Marshes" and "Significant Wildlife Habitat" in Coastal Shorelands

Local governments shall protect from development, major marshes and significant wildlife habitat, coastal headlands, and exceptional aesthetic resources located within the Coos Bay Coastal Shorelands Boundary, except where exceptions allow otherwise.

- I. Local government shall protect:*
 - a. "Major marshes" to include areas identified in the Goal #17, "Linkage Matrix", and the Shoreland Values Inventory map; and*
 - b. "Significant wildlife habitats" to include those areas identified on the "Shoreland Values Inventory" map; and*
 - c. "Coastal headlands"; and*
 - d. "Exceptional aesthetic resources" where the quality is primarily derived from or related to the association with coastal water areas.*
- II. This strategy shall be implemented through:*
 - a. Plan designations, and use and activity matrices set forth elsewhere in this Plan that limit uses in these special areas to those that are consistent with protection of natural values; and*
 - b. Through use of the Special Considerations Map, which identified such special areas and restricts uses and activities therein to uses that are*

consistent with the protection of natural values. Such uses may include propagation and selective harvesting of forest products consistent with the Oregon Forest Practices Act, grazing, harvesting wild crops, and low-intensity water-dependent recreation.

- c. Contacting Oregon Department of Fish and Wildlife for review and comment on the proposed development within the area of the 5b or 5c bird sites.

This strategy recognizes that special protective consideration must be given to key resources in coastal shorelands over and above the protection afforded such resources elsewhere in this Plan.

Board Findings: CBEMP Policy #17 applies to all Project components in the CBEMP. CBEMP Policy #17, requires that "[l]ocal governments * * * protect from development major marshes and significant wildlife habitat." CBEMP Policy #17(II) goes further and expressly explains *how* this mandate to protect certain coastal resources is implemented. CBEMP Policy 17(II)(a) explains that the CBEMP "limit[s] uses *in these special areas* to those that are consistent with protection of natural values." (Emphasis added.) CBEMP Policy #17(II)(b) provides that CBEMP Policy #17 is implemented by "the Special Considerations Map, that identified * * * special areas and restricts uses and activities *therein* to uses that are consistent with the protection of natural values." (Emphasis added.). CBEMP Policy #17(II)(b) goes on to list some uses that are consistent with those values. See Order 07-12-309PL, at p. 48.

LUBA previously noted that "[t]here is simply nothing in the text of CBEMP Policy 17 that suggests it is to be implemented by limiting uses on properties that adjoin or are located near inventoried major marshes or significant wildlife habitat to avoid possible impacts on such marshes and habitat." *SOPIP, Inc. v. Coos County*, 54 Or LUBA 44 (2008), *aff'd without op.*, 223 Or App 495 (2008), *rev. denied*, 346 Or 65 (2009). Thus, CBEMP Policy #17's implementation strategy provides the roadmap for analysis.

The Shoreland Values Inventory Map indicates that there is a major marsh (Henderson Marsh) to the west in zoning district 5-WD. Where an exception does not apply the applicant states that it will avoid Henderson Marsh. The map also indicates there is a freshwater wetland to the east of the SORSC and an archeological site in the southeast corner of the North Spit. The proposed transmission line corridor will span over that wetland, and, as a result, will avoid and protect it. While that bridge is being constructed, JCEP will temporarily fill a portion of this wetland. See Applicant's Figure 11. The hearings officer finds that, subject to obtaining and complying with applicable DSL and USACE fill and removal permits, JCEP's activities will ensure no net loss of wetland functions and values, either temporary or permanent. According to the applicant, the known mapped archeological site will not be impacted. There are no other inventoried resources (*i.e.*, coastal headlands or exceptional aesthetic resources) in the proposed areas of fill. The applicant is not proposing any development within a major marsh, significant wildlife habitat, or other listed / mapped area.

For these reasons, JCEP's proposed development is consistent with this policy.

#18 Protection of Historical, Cultural and Archaeological Sites

Local government shall provide protection to historical, cultural and archaeological sites and shall continue to refrain from widespread dissemination of site-specific information about identified archaeological sites.

- I. This strategy shall be implemented by requiring review of all development proposals involving a cultural, archaeological or historical site, to determine whether the project as proposed would protect the cultural, archaeological and historical values of the site.**
- II. The development proposal, when submitted shall include a Site Plan Application, showing, at a minimum, all areas proposed for excavation, clearing and construction. Within three (3) working days of receipt of the development proposal, the local government shall notify the Coquille Indian Tribe and Coos, Siuslaw, Lower Umpqua Tribe(s) in writing, together with a copy of the Site Plan Application. The Tribe(s) shall have the right to submit a written statement to the local government within thirty (30) days of receipt of such notification, stating whether the project as proposed would protect the cultural, historical and archaeological values of the site, or if not, whether the project could be modified by appropriate measures to protect those values.**

"Appropriate measures" may include, but shall not be limited to the following:

- a. Retaining the prehistoric and/or historic structure in situ or moving it intact to another site; or**
- b. Paving over the site without disturbance of any human remains or cultural objects upon the written consent of the Tribe(s); or**
- c. Clustering development so as to avoid disturbing the site; or**
- d. Setting the site aside for non-impacting activities, such as storage; or**
- e. If permitted pursuant to the substantive and procedural requirements of ORS 97.750, contracting with a qualified archaeologist to excavate the site and remove any cultural objects and human remains, reintering the human remains at the developer's expense; or**
- f. Using civil means to ensure adequate protection of the resources, such as acquisition of easements, public dedications, or transfer of title.**

If a previously unknown or unrecorded archaeological site is encountered in the development process, the above measures shall still apply. Land development activities, which violate the intent of this strategy shall be subject to penalties prescribed in ORS 97.990.

- III. Upon receipt of the statement by the Tribe(s), or upon expiration of the Tribe(s) thirty day response period, the local government shall conduct an administrative review of the Site Plan Application and shall:**

- a. *Approve the development proposal if no adverse impacts have been identified, as long as consistent with other portions of this plan, or*
- b. *Approve the development proposal subject to appropriate measures agreed upon by the landowner and the Tribe(s), as well as any additional measures deemed necessary by the local government to protect the cultural, historical and archaeological values of the site. If the property owner and the Tribe(s) cannot agree on the appropriate measures, then the governing body shall hold a quasi-judicial hearing to resolve the dispute. The hearing shall be a public hearing at which the governing body shall determine by preponderance of evidence whether the development project may be allowed to proceed, subject to any modifications deemed necessary by the governing body to protect the cultural, historical and archaeological values of the site.*

- IV. *Through the "overlay concept" of this policy and the Special Considerations Map, unless an exception has been taken, no uses other than propagation and selective harvesting of forest products consistent with the Oregon Forest Practices Act, grazing, harvesting wild crops, and low intensity water-dependent recreation shall be allowed unless such uses are consistent with the protection of the cultural, historical and archaeological values, or unless appropriate measures have been taken to protect the historic and archaeological values of the site.*

This strategy recognizes that protection of cultural, historical and archaeological sites is not only a community's social responsibility, it is also legally required by ORS 97.745. It also recognizes that cultural, historical and archaeological sites are non-renewable cultural resources.

CBEMP Policy #18 applies to all proposed uses and activities in the CBEMP. CBEMP Policy #18 requires the County to provide notice of a development proposal involving a historical, cultural, or archaeological site to the Coquille Tribe and the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw (collectively, "Tribes"). The tribes then have 30 days to respond and state whether the development would protect the cultural, historical, and archaeological values of the site either as proposed or as modified by appropriate measures. At the public hearing for the applications, the Confederated Tribes contended, apparently correctly so, that they had not received the notice in the correct manner required by CBEMP Policy #18. The County subsequently provided that notice on January 13, 2016. To cure any procedural defect, the hearings officer then entered an order allowing the Tribes additional 30 days, or until February 12, 2016, to respond to the County's notice.

The Confederated Tribes submitted a letter on February 12, 2016 that is supposed to be responsive to the notice required by CBEMP Policy #18. Unfortunately, the letter does not really address the issues that it was supposed to address, which was to state "whether the project as proposed would protect the cultural, historical and archaeological values of the site, or if not, whether the project could be modified by appropriate measures to protect those values." Instead, it contains a Declaration of David V. Ellis, an archeologist for Willamette CRA, which details

the shortcomings in a Memorandum of Agreement (MOA) between FERC, BLM, USBR, USFS, and OSHPO. Exhibit 88. The applicant responds in a letter dated February 22, 2016 that the Tribes' Feb. 12, 2016 submittal does not directly address the points of CBEMP Policy 18." See Exhibit 89. The Board agrees with the applicant.

Turning to the merits, the application references "Plot Plans" submitted at Applicant's Exhibit 10. The Board presumes these are the "Site Application Plan" referenced in the Ordinance. The applicant's primary source of evidence supporting its conclusion that it complies with CBEMP Policy #18 consists of a letter from Dr. Scott Byram, PhD, of Byram Archeological Consulting, LLC. See Applicant's Exhibit 19. Both the Coquille Tribe and the Confederated Tribes have also entered testimony into the record in this matter that do address CBEMP Policy #18. Exhibits 21, 75.

In his letter dated October 27, 2015, Dr. Scott Byram first notes that one identified cultural site, known as 9 (CS-26) on the Shorelands Values Inventory Map, will be avoided and protected in the project design." The Confederated Tribes argue that regarding this site, "JCEP has not engaged in consultations with the Tribe with respect to: "archaeological surveys, proper methodologies to employ for further archaeological resource impacts assessments, or an unanticipated discovery plan." Exh. 75, at p. 6. That argument does not appear to be responsive to the applicant's concession that it will avoid and protect the site. For example, why would the applicant need an Unanticipated Discovery Plan ("UDP") for Site 9 (CS-26) if the applicant is not planning on disturbing the site?

Dr. Byram also notes in his letter dated October 27, 2015 that a "second historic site has been assessed as not significant by the project's archaeological team." No party appears to contest this finding, although the Tribes state, more generally, that the entire Jordan Point area is significant.

The Confederated Tribes' letter dated December 18, 2015 states that the applicant's proposal "involves significant ground disturbing activities." Exhibit 21 at p.12. The Tribes disagrees with what it describes as the applicant's "self-serving" claim that "any cultural resources on the site are likely insignificant." *Id.* The Tribe states "[o]n the contrary, the Tribe is certain that the area to be disturbed will likely to contain significant and archeological resources based on the information contained in the Introduction section of this testimony." *Id.* The Introduction Section provides general information concerning the Tribe's extensive and long-term use of Jordan Cove. However, neither the Introduction section of that letter nor the Confidential Record it cites to contains site-specific information.

Reading between the lines, the Tribe asserts that the applicant did not submit an adequate "Plot Plan" or "Site Plan Application" with the development proposal. CBEMP Policy #18 requires such a plan which, at a minimum, includes a map showing "all areas proposed for excavation, clearing and construction." Exhibit 75. Again, applicant's Exhibit 10 appears to be an attempt to respond to that criterion.

In its letter dated January 12, 2016, the Confederated Tribe states that it has "designated the entirety of Jordan Cove as a site of archeological significance" under ORS 358.905(1)(b). This statute defines the phrase "site of archaeological significance" as follows:

(b) Site of archaeological significance means:

(A) Any archaeological site on, or eligible for inclusion on, the National Register of Historic Places as determined in writing by the State Historic Preservation Officer; or

(B) Any archaeological site that has been determined significant in writing by an Indian tribe.

The term "archaeological site" is defined as follows:

(c)(A) Archaeological site means a geographic locality in Oregon, including but not limited to submerged and submersible lands and the bed of the sea within the states jurisdiction, that contains archaeological objects and the contextual associations of the archaeological objects with:

(i) Each other; or

(ii) Biotic or geological remains or deposits.

(B) Examples of archaeological sites described in subparagraph (A) of this paragraph include but are not limited to shipwrecks, lithic quarries, house pit villages, camps, burials, lithic scatters, homesteads and townsites.

Thus, under state law, an "archaeological site" cannot be something as big as the entirety of Jordan Cove. Rather, ORS 358.905(1)(c)(B) envisions that the Tribe identify more specific "sites" such as house pit villages, camps, burials, etc. For example, in *Concerned Citizens of the Upper Rogue and Don Carroll v. Jackson County*, 33 Or LUBA 70, 76 (1997), LUBA described a site of archaeological significance" as follows:

The designation by the Siletz Indians speaks of the "Far Hills Site" and "Far Hills Ranch (35JA25)" and refers to a site investigated by Wilbur Davis (Davis), an archaeologist, in the 1970s, which Davis called the "Far Hills Ranch (35JA25)." Davis described Site 35JA25 as being approximately 100 meters by 35 meters and "defined by surface lithic debris which together with the burial area, was thought to indicate a village complex."

Simply stating that "entire Jordan Cove" site qualifies as a "site of archaeological significance" appears to overstep the legal authority granted to the Tribes by ORS 358.905 and is not supported by substantial evidence in either the record or the confidential record. The Tribe states that "Jordan Cove is not just a series of anthropological sites but rather an area with generations of Tribal subsistence, and use." Exhibit 21 at p. 5. However, the statute requires the site to be one "that contains archaeological objects and the contextual associations of the archaeological objects" and the Tribe provides no evidence, other than speculation, that the entire Jordan Cove site meets the definition set forth in ORS 358.905(1)(b). As an example, there is no evidence in the form of archaeological objects that the entirety of that site was used as a village, burial ground, etc. It may be that case that Jordan Cove was in fact one large "site of archeological significance," but this record is not detailed enough to prove up that assertion. Moreover, the timing of the 2015 Council Resolution in relation to this land use application raises additional concerns as to the motivation of the Tribes.

Having said that, the applicant requests that the Board defer a finding of compliance with this policy through the following condition of approval:

"Upon receipt of the statement from the Tribe(s) under CBEMP Policy 18.II, the County shall take one of the following actions: (1) if no adverse impacts to cultural, historical, or archaeological resources on the site have been identified, the County shall find that the Applications are consistent with CBEMP Policy 18; (2) if the Tribe(s) and the applicant reach agreement regarding the measures needed to protect the identified resources, the County shall find that the Applications are consistent with CBEMP Policy 18, subject to any additional measures the County believes are necessary to protect those resources; or (3) if the County finds that there will be adverse impacts to identified CBEMP Policy 18 resources on the site and the applicant and the Tribe(s) have not reached agreement regarding protection of such resources, then the Board of County Commissioners shall hold a quasi-judicial hearing to resolve the dispute. The hearing shall be a public hearing at which the governing body shall determine by preponderance of the evidence whether the development project may be allowed to proceed, subject to any modifications deemed necessary by the governing body to protect the cultural, historical, and archaeological values of the site. For purposes of this condition, the public hearing shall be subject to the provisions of CCZLDO 5.7.300 of the CCZLDO with the Board of Commissioners serving as the Hearings Body. The Board's decision in that matter shall constitute the Board's decision regarding the Applications' consistency with CBEMP Policy 18."

The request seems reasonable. The Board imposes the requested condition as a condition of approval of this decision.

#20 Dredged Material Disposal Sites

Local government shall support the stockpiling and disposal of dredged materials on sites specifically designated in Plan Provisions, Volume II, Part 1, Section 6, Table 6.1, and also shown on the "Special Considerations Map". Ocean disposal is currently the primary disposal method chosen by those who need disposal sites. The dredge material disposal designated sites on the list provided on Table 6.1, has decreased because the ocean has become the primary disposal method, the in-land DMD sites have diminished and those which have remained on the DMD list are sites which may be utilized in the future and not be cost-prohibitive. Consistent with the "Use/Activity" matrices, designated disposal sites shall be managed so as to prevent new uses and activities which could prevent the sites' ultimate use for dredge material disposal. A designated site may otherwise only be released for some other use upon a finding that a suitable substitute upland site or ocean dumping is available to provide for that need. Sites may only be released through a Plan Amendment. Upland dredged material disposal shall be permitted elsewhere (consistent with the "Use/Activity" matrices) as needed for new dredging (when permitted), maintenance dredging of existing functional facilities, minor navigational improvements or drainage improvements, provided riparian vegetation and fresh-water wetlands are not affected. For any in-water (including intertidal or subtidal estuarine areas) disposal permit requests, this strategy shall be implemented by the preparation of findings by local government consistent with Policy #5 (Estuarine Fill and Removal) and Policy #20c (Intertidal Dredged Material Disposal). Where a site is not designated for dredged material disposal, but is used for the disposal of dredged material, the amount of material disposed shall be considered as a capacity credit toward the total identified dredged material disposal capacity requirement.

- I. This policy shall be implemented by:
 - a. Designating "Selected Dredge Material Disposal Sites" on the "Special Considerations Map"; and
 - b. Implementing an administrative review process (to preclude pre-emptory uses) that allows uses otherwise permitted by this Plan but proposed within an area designated as a "Selected DMD" site only upon satisfying all of the following criteria:
 1. The proposed use will not entail substantial structural or capital improvements (such as roads, permanent buildings and nontemporary water and sewer connections); and
 2. The proposed use must not require any major alteration of the site that would affect drainage or reduce the usable volume of the site (such as extensive site grading/excavation or elevation from fill); and
 3. The proposed use must not require site changes that would prevent the expeditions conversion of the site to estuarine habitat.
 - c. Local government's review of and comment on applicable state and federal waterway permit applications for dike/tidegate and drainage ditch actions.

II. This strategy recognizes that sites designated in the Comprehensive Plan reflect the following key environmental considerations required by LCDC Goal #16:

- a. Disposal of dredged material in upland or ocean waters was given general preference in the overall site selection process;**
- b. Disposal of dredged material in estuary waters is permitted in this Plan only when such disposal is consistent with state and federal law;**
- c. Selected DMD sites must be protected from pre-emptory uses.**

Board Findings: CBEMP Policy 20 applies to disposal of dredged material ("DMD") in 6-WD (LNG terminal, slip, barge berth), DMD in 7-D (road and utility corridor, gas processing facility, storm water pond), restoration in 5-WD (Parcels P and W), and restoration in 3-WD (Parcel W).

The Coos County Comprehensive Plan Provisions, Volume II, Part 1, Section 6, Table 6.1 identifies one location as designated dredge material disposal sites that is near the Project footprint. The site is Henderson Marsh, identified as Site No. 4x. The Special Considerations Map shows Henderson Marsh, Site No. 4x to the west of the Project footprint.

The Project does not propose any new uses or activities that would prevent the ultimate use of DMD designated sites for DMD. Although the application proposes upland dredged disposal on non-inventoried DMD sites, this disposal is consistent with this Policy because it is needed for new and maintenance dredging and riparian vegetation and freshwater wetlands will not be filled with dredged material. The applicant also proposes in-water disposal and this is consistent with Policy 5 and 20c for the reasons explained in this narrative.

CBEMP Policy 20 states that the local government shall support disposal of dredged materials on sites specifically designated in the Plan Provisions, Volume II, Part 1, Section 6, Table 6.1. This applicant is proposing DMD in 6-WD and 7-D, and restoration in 3-WD in order to construct the access channel and slip. Most of the material excavated and dredged from the slip and access channel would be used to raise the elevation of the proposed Project facilities above the tsunami inundation zone. The dredged material would be placed on the LNG terminal upland process area, the dune on the east side of the slip area would be restored, and the remaining materials would be deposited at the former Weyerhaeuser linerboard site. See Application at p. 92 (citing FEIS 2-27). Operational maintenance dredging will be disposed of in the ocean at Site F. *Id.*

Because the proposed activity is DMD, the activity is consistent with CBEMP Policy 20. The proposed activity of restoration in 3-WD is also consistent with CBEMP Policy 20 because the work is not in an area designated as a "Selected DMD" site. As a site that is not designated for dredged material disposal, it is eligible for a capacity credit.

#22b Limiting Dredge and Fill as Estuarine Restoration

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- i. Local government shall support estuarine dredge or fill actions as estuarine restoration (pursuant to LCDC Goal #16) only when such restoration will meet the requirements of administrative rules adopted by the Division of State Lands and only upon findings which demonstrate the following:
- Factual assessment of the nature and extent of the estuarine resource believed to have existed at the proposed restoration site at some time in the past; and
 - Factual assessment of how the estuarine resource at the site was lost; and
 - Comparison of the resource enhancement expected to result from the proposed restoration project, together with a determination that the proposed project will, in fact, probably restore all or some of the resource values lost at the site; and
 - The fill/removal findings at ORS 196.

This policy shall be implemented by an administrative conditional use review process and response to requests for comments by the Division of State Lands and Corps of Engineers regarding state or federal waterway permits. This policy recognizes that not all estuarine dredge or fill actions may be considered estuarine restoration pursuant to LCDC Goal #16.

Board's Findings: CBEMP Policy 22b applies to Active Restoration in 7-D (East Bridge Site), Active Restoration in 15-RS (Kentuck Slough), Active Restoration in 5A-NS (Parcel P and W), and Active Restoration in 3-WD, 3W-NS, 4-CS (Parcel W). CBEMP Policy 22b concerns estuarine restoration. The only component and zoning district with estuarine restoration is Kentuck Slough in the 15-RS zoning district.

The restoration meets the requirements of the administrative rules adopted by the Division of State Lands, as demonstrated by the previously issued Removal-Fill Permit Number 37712-RF by the Department of State Lands. See Applicant's Exhibit 21, Permit No. 37712-RF.

Detailed evaluation of the Kentuck site and its restoration potential is provided in the JCEP Compensatory Wetland Mitigation ("CWM") Plan. See Applicant's Exhibit 11. A synopsis of this evaluation as it relates to Policy #22b.1.a-d is provided below.

1.a. The upper extent of historic estuarine influence at the site was determined based on historic head of tide information published by the Oregon Department of State Lands (DSL 1989²⁴), which showed that the historic head of tide occurred near the confluence of Metman Creek with Kentuck Slough. This occurs several hundred feet east of the area zoned as 15-RS, which means the entirety of the Kentuck Site zoned as 15-RS occurs within former tidelands (not including potential zoning map inaccuracies). A wetland delineation was conducted and confirmed that estuarine resources no longer occur on the site due to levees and tidegates. Freshwater pasture wetlands are now present. An area of salt marsh occurs due west of the site. It is believed that this salt marsh previously connected with the Kentuck site prior to construction of levees and East Bay Drive.

²⁴ Reference: Oregon Department of State Lands (DSL). 1989. Heads of Tide for Coastal Streams in Oregon. Prepared by State of Oregon, Division of State Lands, Engineering Section. March 1989.

1.b. Historic and current aerial photography was reviewed to assess site conditions, including changes over time. Photos prior to levee construction were not available; however, the purpose of the levees and tidegates was clearly intended to cut off estuarine influence to the site. Photos show that the site was first used for agricultural production and then later converted to the Kentucky Golf Course. Use as a golf course ended several years ago and now the site is used as grazing pasture.

1.c. A comparison of resource enhancement is detailed in the CWM Plan. The intent is to restore the site back to historic conditions to the greatest extent practicable given existing adjacent land uses (i.e. East Bay Drive, access to local residences, etc.). The proposed project will restore salt marsh, mudflat, and tide channel conditions that occurred prior to levee construction, with a restored tidal connection occurring via a proposed bridged levee breach along East Bay Drive.

1.d. The Kentucky mitigation site was originally authorized by the State of Oregon Removal-Fill permit number 37712-RF. See Applicant's Exhibit 21. A revised permit application for the impact site and mitigation site has been prepared and is currently in review by DSL. The applicant has stated that it is willing to accept a condition requiring issuance by DSL of a Removal-Fill permit, which would ensure compliance with CBEMP Policy 22b.

For the aforementioned reasons, the Board finds that the application is compliant with CBEMP Policy 22b.

#23 Riparian Vegetation and Streambank Protection

- I. *Local government shall strive to maintain riparian vegetation within the shorelands of the estuary, and when appropriate, restore or enhance it, as consistent with water-dependent uses. Local government shall also encourage use of tax incentives to encourage maintenance of riparian vegetation, pursuant to ORS 308.792 - 308.803.*

Appropriate provisions for riparian vegetation are set forth in the CCZLDO Section 3.2.180 (OR 92-05-009PL).

- II. *Local government shall encourage streambank stabilization for the purpose of controlling streambank erosion along the estuary, subject to other policies concerning structural and non-structural stabilization measures.*

This strategy shall be implemented by Oregon Department of Transportation (ODOT) and local government where erosion threatens roads. Otherwise, individual landowners in cooperation with the Oregon International Port of Coos Bay, and Coos Soil and Water Conservation District, Watershed Councils, Division of State Lands and Oregon Department of Fish & Wildlife shall be responsible for bank protection.

This strategy recognizes that the banks of the estuary, particularly the Coos and Millilcoma Rivers are susceptible to erosion and have threatened valuable farm land, roads and other structures.

Findings: CBEMP Policy 23 applies to the following proposed uses and activities: Industrial and Port facilities, DMD, Fill, excavation to create new water surface, shoreline stabilization in 6-WD (LNG terminal, slip, barge berth, West Bridge); Industrial and Port facilities, DMD, fill, mitigation, restoration, in 7-D (gas processing facility, road and utility corridor, storm water pond, West Jordan Cove, East Bridge); and Land transportation facility in 8-WD (entrance). Restoration in 15-RS (Kentuck Slough).

The local government strives to maintain riparian vegetation by following the appropriate provisions for riparian vegetation set forth in the renumbered CCZLDO Section 3.2.180. In part, Section 3.2.180 states:

Riparian vegetation within 50 feet of a estuarine wetland, stream, lake or river, as identified on the Coastal Shoreland and Fish and Wildlife habitat inventory maps, shall be maintained except that...

Impacts to riparian vegetation are consistent with the provisions of LDO Section 3.2.180 because the only estuarine wetland on the North Spit is identified as a 'major marsh' and that is Henderson Marsh. Except where the above exceptions apply, the Applicant will maintain a 50 foot buffer from Henderson Marsh. There are no streams, lakes or rivers identified on the Coastal Shoreland and Fish & Wildlife habitat inventory maps within the North Spit. Coos County has two Fish and Wildlife habitat inventory maps. The Fish and Wildlife habitat inventory maps only identify Henderson Marsh as an inventoried estuarine wetland on the North Spit.

With respect to subsection II of Policy #23, encouraging streambank stabilization, there are no streambanks within the Project footprint; therefore subsection II is not applicable.

At the restoration sites, the requested activity is restoration thus the riparian vegetation will either be unaffected or protected according to the restoration plan. For the aforementioned reasons, the application has demonstrated compliance with CBEMP Policy 23.

#27 Floodplain Protection within Coastal Shorelands

The respective flood regulations of local government set forth requirements for uses and activities in identified flood areas; these shall be recognized as implementing ordinances of this Plan.

This strategy recognizes the potential for property damage that could result from flooding of the estuary.

Findings: CBEMP Policy 27 applies to the following proposed uses and activities: Industrial and Port facilities, DMD, Fill, excavation to create new water surface, and shoreline stabilization in 6-WD (LNG terminal, slip, barge berth, West Bridge); Industrial and Port facilities, DMD, Fill, Mitigation, Restoration in 7-D (road and utility corridor, storm water pond, gas processing facility, East Bridge, West Jordan Cove); and Land Transportation Facility in 8-WD (entrance).

Fill will be placed in the floodplain located in the southern area of the 7-D zoned portion of the Project in order to establish the road and utility corridor which will connect the east and west ends of the Project. As set forth in the evidentiary letter of Steve Donovan of SHN, Applicant's Exhibit 7, the fill will have no measurable effect on the flood elevation because it will raise the base flood less than 0.01 feet.

Additionally, CBEMP Policy 27 is concerned with the potential for property damage due to estuary flooding. Because the applicant is proposing to fill the site in order to elevate Project components, there is no risk of estuary flooding and the application is compliant with CBEMP Policy 27.

#30 Restricting Actions in Beach and Dune Areas with "Limited Development Suitability" and Special Consideration for Sensitive Beach and Dune Resources (moved from Policy #31)

I. Coos County shall permit development within areas designated as "Beach and Dune Areas with Limited Development Suitability" on the Coos Bay Estuary Special Considerations Map only upon the establishment of findings that shall include at least:

- a. The type of use proposed and the adverse effects it might have on the site and adjacent areas;***
- b. Temporary and permanent stabilization programs and the planned maintenance of new and existing vegetation;***
- c. Methods for protecting the surrounding area from any adverse effects of the development; and***
- d. Hazards to life, public and private property, and the natural environment which may be caused by the proposed use; and***
- e. Whether drawdown of groundwater would lead to loss of stabilizing vegetation, loss of water quality, or intrusion of saltwater into water supplies.***

Implementation shall occur through an administrative conditional use process which shall include submission of a site investigation report by the developer that addresses the five considerations above.

II. This policy recognizes that:

- a. The Special Considerations Map category of "Beach and Dune Areas with Limited Development Suitability" includes all dune forms except older stabilized dunes, active foredunes, conditionally stabilized foredunes that are subject to ocean undercutting or wave overtopping, and interdune areas (deflation plains) subject to ocean flooding;***
- b. The measures prescribed in this policy are specifically required by LCDC Goal #18 for the above-referenced dune forms, and that***
- c. It is important to ensure that development in sensitive beach and dune areas is compatible with, or can be made compatible with, the fragile and***

hazardous conditions common to beach and dune areas.

- III. Permits for beachfront protective structures shall be issued only where development existed on January 1, 1977 (see Section 3. Definitions for "development"). Criteria for review of all shore and beachfront protective structures shall provide that:
- a. Visual impacts are minimized;
 - b. Necessary access to the beach is maintained;
 - c. Negative impacts on adjacent property are minimized; and
 - d. Long-term or recurring costs to the public are avoided.
- IV. Local government shall cooperate with state and federal agencies in regulating the following actions in beach and dune areas by sending notification of Administrative Conditional Use decision:
- a. Destruction of desirable vegetation (including inadvertent destruction by moisture loss or root damage),
 - b. The exposure of stable and conditionally stable areas to erosion,
 - c. Construction of shore structures which modify current or wave patterns leading to beach erosion, and
 - d. Any other development actions with potential adverse impacts.

Board's Findings: CBEMP Policy 30 implements statewide Planning Goal 18. CBEMP Policy 30 applies to the following uses and activities: Industrial and Port facilities, DMD, Fill, excavation to create new water surface, and shoreline stabilization in 6-WD (LNG terminal, slip, barge berth, West Bridge); and Industrial and Port facilities, DMD, Fill, Mitigation, Restoration in 7-D (road and utility corridor, storm water pond, gas processing facility, East Bridge, West Jordan Cove).

The Board of Commissioners has previously held that the types of potential adverse effects or hazards that must be considered under this policy are limited to a review of potential adverse geologic impacts that might result as a result of the proposed development. *Borton v. Coos County*, 52 Or. LUBA 46, 52 (2006); Order 07-12-309P at p. 37. In *Borton*, the Board interpreted Policy 5.10(2), which is a counterpart to CBEMP Policy #30, and which has identical language. The Board found that Policy 5.10(2) only requires consideration of geologic impacts such as the stability and potential for movement of the dunes in order to ensure that the proposed development is consistent with the capabilities and limitations of the dunes. LUBA affirmed this interpretation, starting:

The county's interpretation that Policy 5.10(2), which implements Implementation Requirement 1 of Goal 18, addresses development limitations, such as adverse geological or geotechnical impacts, that are specific to development in beach and dune areas is consistent with the text, context and policy of Goal 18. Policy 5.10(2) does not require consideration of general development issues, such as noise impacts or water availability, that are

unrelated to the particular geological or geotechnical development issues posed by beach and dune areas. As explained earlier, consideration of such general development impacts will properly be made during a future permitting process. The county's interpretation of Policy 5.10(2) is reasonable and is consistent with the language of the goal that it implements.

Policy #30 requires implementation through an administrative conditional use process. During that process, the developer is required to submit a site investigation report addressing specific criteria in order to develop on any designated beach dune areas which has limited suitability. The applicant has provided the site investigation report addressing these five considerations in Exhibit 6. Based upon the SHN report, the Board finds that the Application satisfies this policy.

In their letter dated December 18, 2015, OSCC takes issue with the SHN report:

The application includes a revised analysis of compliance with Policy #30. However, the new analysis does not demonstrate that questions regarding the groundwater impacts of the proposed development have been resolved. Oregon Department of Environmental Quality has raised serious concerns regarding impacts of groundwater drawdown on the North Spit resulting from the proposed development. In its comments to FERC, Oregon DEQ noted that, "there is a possibility that the water withdrawn from these wells for this project could dry up wetlands or lower water levels in nearby shallow dunal lakes." State of Oregon (2015) at 23. Both DEQ and Oregon Water Resources Department raised concerns about the source of water needed for hydrostatic testing and the impacts of those water withdrawals on water sources in the area.

In fact, the relationship between groundwater and the stability of the site, which is related to the hazards element of Policy #30, has not been adequately addressed. In performing a peer review of the geotechnical analysis, the State of Oregon's reviewer noted that the application "does not include discussion of groundwater relative to stability" of the site, and recommends discussion of "potential for subsidence during recommended dewatering within tank/slip area for grading." State of Oregon (2015) at Appendix A-69). There were several other comments regarding needed further analysis of groundwater at the site including groundwater fluctuation at the site, slope stability, site drainage, flooding history, groundwater flow information, and groundwater monitoring. *Id.* Importantly, the peer review notes that the groundwater level used in the liquefaction analysis for the site is not consistent with the data used in other parts of the application

including the Appendix H analysis, and that no analysis or discussion was presented to address potential subsidence hazards from groundwater withdrawal during the project.

The applicant argues that the Board should deny OSCC's contention for three reasons. First, the applicant correctly points out that the SHN's report discusses how loose, sandy soils at the site will be stabilized:

"Stabilization of loose, sandy soils will be achieved through a variety of methods, including paving, use of localized retaining structures, placement of rock or other structural armoring methods, use of geo-grids and/or geotextiles, and re-establishment of vegetation."

Applicant's Exh. 6 (SHN report at 3). SHN continues by noting that stabilization of sandy soils through re-vegetation has been effective in other nearby locations. *Id.* SHN also explains, with reference to the GSI report in Applicant's Exhibit 37, that applicant's proposed groundwater dewatering is within historical levels that did not lead to the loss of stabilizing vegetation. OSCC does not acknowledge or rebut this testimony.

Second, the applicant correctly points out that OSCC's concern with groundwater impacts on "site stability" are outside the scope of this policy. The specific groundwater criterion at CBEMP Policy 30 (l)(e) does not reference site stability:

"e. Whether drawdown of groundwater would lead to loss of stabilizing vegetation, loss of water quality or intrusion of saltwater into water supplies."

The omission of a reference to "site stability" in this specific groundwater criterion reflects the County's intent that site stability is not regulated under sub-e.

Third, OSCC admits that applicant will implement a monitoring program but contends that "monitoring" will not result in "protecting" the surrounding area. OSCC's concerns are speculative and mistaken. The fact that applicant's program provides for "continuous monitoring" will allow the applicant to promptly address any abnormalities in order to "protect" surrounding areas from adverse effects.

Additionally, although OSCC expresses concern about methane emanating from landfill cells on the site, OSCC fails to acknowledge that the only landfill where development is proposed is the Cell 3 landfill, which will be removed before construction of Project facilities, while other landfills will be monitored and mitigation imposed, as needed:

"The Cell 3 landfill will be removed and Project facilities will be constructed in this area. The other existing landfills will not be removed and no Project facilities will be constructed on these areas. However, should other areas of biogenic be identified

during construction of the Project, mitigation measures to reduce the potential adverse effects of biogenic gas on the Project will be incorporated into the detailed design."

See Resource Report 6 in Applicant's Exhibit 43 at 6-9.

In their letter dated December 18, 2015, OSCC also argues:

Oregon Shores disagrees with the applicant's assertion that the county may only consider hazards related to ground disturbance in the context of Policy #30. Instead, the county can apply Policy #30 to address hazards life, public and private property from the project as a whole. This should include an assessment of the potential vapor cloud dispersion and the modeling used to by the applicant to assess this risk. See Sen. Wyden letter (Jan. 30, 2015).

This is a surprising assertion, given the Board's previous interpretation of CBEMP Policy 30. See Order 70-12-309PL, at p. 36-37. OSCC's argument also does not appear to mesh well with LUBA's holding in *Borton, supra*. Indeed, the applicant is quick to point out the following:

Finally, although OSCC contends that the County can consider any hazards associated with the Project under this policy, OSCC does not offer any analysis in support of this assertion. OSCC does not cite to any text, context, legislative history, or case law. By contrast, LUBA affirmed the County's previous interpretation that a policy that closely tracks CBEMP Policy 30 (Balance of County Policy 5.10) is limited to a review of potential adverse geologic impacts that might occur as a result of the proposed development and does not require consideration of a broad array of potential impacts and health hazards. *Borton v. Coos County*, 52 Or LUBA 46 (2006). The Hearings Officer should interpret CBEMP Policy 30 consistent with this precedent.

The applicant is correct on this point. It is has been this Board's policy to respect, and not deviate from, previous LUBA decisions. To the extent that OSCC's argument is ground in something other than a simple disagreement with previous Board interpretations and LUBA case law, its argument is not developed sufficiently to enable review. *Deschutes Development v. Deschutes County*, 5 Or LUBA 218 (1982).

The Board finds that the Project satisfies this policy.

#49 Rural Residential Public Services

Coos County shall provide opportunities to its citizens for a rural residential living experience, where the minimum rural public services necessary to support such development are defined as

policy (sheriff) protection, public education (but not necessarily a rural facility), and fire protection (either through membership in a rural fire protection district or through appropriate on-site fire precaution measures for each dwelling).

Implementation shall be based on the procedures outlined in the County's Rural Housing State Goal Exception.

- I. This strategy is based on the recognition:*
 - a. that physical and financial problems associated with public services in Coos Bay and North Bend present severe constraints to the systems' ability to provide urban level services, and*
 - b. that rural housing is an appropriate and needed means for meeting housing needs of Coos County's citizens.*

Findings: CBEMP Policy 49 would potential apply to the following uses and activities: Industrial and Port facilities, DMD, Fill, excavation to create new water surface, and shoreline stabilization in 6-WD (LNG terminal, slip, barge berth, West Bridge); and Industrial and Port facilities, DMD, Fill, Mitigation, Restoration in 7-D (road and utility corridor, storm water pond, gas processing facility, East Bridge, West Jordan Cove). However, since no rural residential uses are proposed with this request, this policy does not apply.

#50 Rural Public Services

Coos County shall consider on-site wells and springs as the appropriate level of water service for farm and forest parcels in unincorporated areas and on-site DEQ-approved sewage disposal facilities as the appropriate sanitation method for such parcels, except as specifically provided otherwise by Public Facilities and Services Plan Policies #49, and #51. Further, Coos County shall consider the following facilities and services appropriate for all rural parcels: fire districts, school districts, road districts, telephone lines, electrical and gas lines, and similar, low-intensity facilities and services traditionally enjoyed by rural property owners.

This strategy recognizes that LCDC Goal #11 requires the County to limit rural facilities and services.

Board Findings: CBEMP Policy 50 applies to the following uses and activities: Industrial and Port facilities, DMD, Fill, excavation to create new water surface, and shoreline stabilization in 6-WD (LNG terminal, slip, barge berth, West Bridge); and Industrial and Port facilities, DMD, Fill, Mitigation, Restoration in 7-D (road and utility corridor, storm water pond, gas processing facility, East Bridge, West Jordan Cove). The Project will require public facilities and services as is customary in rural areas such as the subject site. No urban public services are proposed with this request. Specifically, the Road and Utility Corridor provides connections within the site and does not provide services to offsite properties. Likewise, the Fire Station will serve the Project and will not provide services to offsite properties. Accordingly, the Project will not encourage additional urban development.

#51 Public Services Extension

- I. Coos County shall permit the extension of existing public sewer and water systems to areas outside urban growth boundaries (UGBs) and unincorporated community boundaries (UCB's) or the establishment of new water systems outside UGB's and UCB's where such service is solely for:**
 - a. development of designated industrial sites;**
 - b. development of "recreational" planned unit developments (PUDs);**
 - c. curing documented health hazards;**
 - d. providing domestic water to an approved exception for a rural residential area;**
 - e. development of "abandoned or diminished mill sites" as defined in ORS 197.719(1) and designated industrial land that is contiguous to the mill site.**
- II. This strategy shall be implemented by requiring:**
 - a. that those requesting service extensions pay for the costs of such extension; and**
 - b. that the services and facilities be extended solely for the purposes expressed above, and not for the purpose (expressed or implied) of justifying further expansion into other rural areas; and**
 - c. that the service provider is capable of extending services; and**
 - d. prohibiting hook-ups to sewer and water lines that pass through resource lands as allowed by "I, a through d" above; except, that hook-ups shall be allowed for uses covered under "II, a through d" above.**
 - e. That the service allowed by "e" above is authorized in accordance with ORS 197.719.**

Board's Findings: CBEMP Policy 51 applies to the following uses and activities: Industrial and Port facilities, DMD, Fill, excavation to create new water surface, and shoreline stabilization in 6-WD (LNG terminal, slip, barge berth, West Bridge); and Industrial and Port facilities, DMD, Fill, Mitigation, Restoration in 7-D (road and utility corridor, storm water pond, gas processing facility, East Bridge, West Jordan Cove). The County has designated the eastern portion of the Project site for industrial use. Therefore, the site would be eligible for the extension of existing public sewer and water systems. Potable water will be supplied to the Fire Station by the Coos Bay/North Bend Water Board (CBNBWB) through the construction of interconnecting facilities. All costs associated with the construction of water tap and interconnecting water lines will be borne solely by JCEP without burden to existing CBNBWB customers to provide potable water to the site. No sanitary sewer services are required as the site will make use of an on-site vault that will be pumped out as needed and/or an on-site septic system. The proposed uses and activities are consistent with this policy.

Balance of County Zoning.

This section of the Recommendation covers all components of the project that are located outside of the Coos Bay Estuary Management Plan. To recap, The Coos County Comprehensive Plan is made up of three volumes. Volume I, which staff and the parties refer to as the Coos County Comprehensive Plan or "CCCP," applies to the unincorporated areas of the county that are not subject to Volumes II and III of the plan. This area is also known as the "Balance of County," hence, the name "balance of county zoning."

Volume II of the Coos County Comprehensive Plan is the Coos Bay Estuary Management Plan, which staff and the parties refer to as the "CBEMP." The CBEMP applies to the Coos Bay Estuary. Volume III of the plan is the Coquille River Estuary Management Plan, which the parties refer to as the CREMP. The CREMP applies to the Coquille River estuary. For this section of the Recommendation, the Board is required to address criteria set forth in the CCCP. (i.e. Volume 1 one of the Coos County Comprehensive Plan).

Uses and Activities in the Industrial ("IND") Zone

The proposal seeks approval to site the following uses:

- fire station and training center,
- accessory office buildings,
- processing facility for subsurface resources,
- utility facility.

The applicant also seeks to allow fill to be placed on the site.

Purpose and Intent: The purpose of the "IND" district is to provide an adequate land base necessary to meet industrial growth needs and to encourage diversification of the area's economy accordingly. The "IND" district may be located without respect to Urban Growth Boundaries, as consistent with the Comprehensive Plan. The "IND" designation is appropriate for industrial parcels that are needed for development prior to the year 2000, as consistent with the Comprehensive Plan.

Section 4.4.200 Development and Use Permitted:

The following uses and their accessory uses are permitted outright in the IND zoning districts. All industrial uses shall be located in building or buildings not to exceed the floor area standards set forth in OAR 660-022-0030(11).

18. Fill including dredge material disposal.
20. Fire station.
26. Office building may be permitted only if in conjunction with a permitted or conditionally permitted use.
29. Processing **** (b) other mineral or subsurface resources

Board's Finding: CCZLDO § 4.4.200 sets out the permitted uses and their accessory uses in the industrial zone. The applicant seeks a compliance determination for the following uses and activities:

- fill and dredge material disposal, CCZLDO 4.4200(18);
- a fire station, CCZLDO 4.4200(20);
- office buildings, CCZLDO 4.4200(26);
- Utility facility, CCZLDO 4.4200(34); and
- processing of other mineral or subsurface resources, CCZLDO 4.4200(29)(b), and their accessory uses.

All of these listed uses and activities and their accessory use are permitted in the IND zone.

Gas Processing Facility. Under the County Ordinance, "Mineral Resources – Processing" is defined as "[t]he act of refining, perfecting, or converting a natural mineral into a useful product." CCZLDO 2.1.200. The Ordinance definition of "mineral" is: "naturally occurring homogeneous substances such as coal, salt, sulfur, petroleum, water, natural gas, etc." See CCZLDO 2.1.200 (Definition of "Mineral Resources – Mining," which cross-references to definition of "Mineral Resources – Exploration). Thus, the Ordinance defines the term "mineral" not in a scientific sense (*i.e.* a solid with a definite crystalline structure), but rather in the commodities sense of the word. In other words, for purposes of the Ordinance, a "mineral" is a natural material that can be extracted as a commodity, whether that material takes the shape of a liquid, solid, or gas. As proposed by the applicant, the Gas Processing Facility will process natural gas, which is a "mineral" resource, in order to remove impurities and prepare it for liquefaction. See letter from Applicant's Senior Project Advisor in Applicant's Exhibit 12. Therefore, the Gas Processing Facility will refine the natural gas into a useful product.

The Project requires the further processing of natural gas, a subsurface resource, in order to remove undesirable impurities that can cause equipment corrosion or the gas to freeze when liquefied. The applicant has explained in detail how the gas-purification process is accomplished. See App. 12.

OSCC contends that the Gas Processing Facility is not a "Mineral Resources – Processing" use because the gas is already a "useful product" when it enters the facility and because the resulting product is only "useful" for a limited purpose:

The applicant suggests that its LNG facilities can be characterized as processing of mineral resources (an allowed use in the IND zone). CCZLDO Section 2.100 defines "Mineral Resources – Processing" as "the act of refining, perfecting, or converting a natural mineral into a useful product." The applicant states that the gas that enters the facility through the Pacific Connector pipeline is "household quality" – that is, it is already a "useful product." The processing contemplated by the application is not for the purposes of rendering a mineral into a useful product, but rather to liquefy

using refrigerants and large amounts of energy, the gas for purposes of international transport.

See Letter from Courtney Johnson dated December 18, 2015, at p. 2. Exhibit 17. See also Exhibit 57 (Similar argument from Ms. Hannah Sohl of Rogue Climate). However, the Board believes that opponent's argument proves too much. As the applicant notes, under the Ordinance definitions, "natural gas" is a mineral, and while it could be useful for some purposes in the gaseous form in which it enters the Gas Processing Facility, it is still a "natural mineral." In its gaseous form, natural gas on the mainland of the U.S. is not a useful product for consumers living in Hawaii, for example, because there is no way to get it to that market in an unrefined form. The natural gas is refined and then converted into a liquid form so that it may be transported and used as a "useful product" throughout the Pacific Rim.

Based on the above facts, OSCC contends that the resulting purified gas is only a "useful product" for purposes of international transport, that does not mean it is not otherwise a "useful product." Again, this simply proves too much. The drafter's intent was to make this zone available for processing minerals, and they expressly listed natural gas as an example of a mineral. That fact begins and ends the inquiry: the applicant's proposal easily fits within that definition.

Rogue Climate argues that "any 'processing' of an already useful product is proposed merely to reduce transportation costs." Letter from Ms. Hannah Sohl of Rogue Climate. Exhibit 57. That argument defeats itself. If a mineral needs to be further processed or "perfected" to make transportation economically viable, then it follows that further processing is required to make the mineral a "useful product" for the intended market.

OSCC also contends that the Gas Processing Facility is not a "Mineral Resources – Processing" use because it carries more hazards and risks and requires more state and federal oversight than other "Mineral Resources – Processing" uses. See Exhibit 3. This is incorrect for two reasons. First, the argument confuses a policy position with a legal argument. A legal argument concerning an Ordinance interpretation must be ground in statutory construction – and must be framed by using the methodology set forth in *PGE v. BOLI* and its progeny, and recognizing the potential deference, if any, potentially afforded by ORS 197.829(1) and associated case law. In this case, there is no textual or contextual support in the CCZLDO for OSCC's interpretation. Instead, accepting OSCC's contention requires the Board to insert language into the definition of "Mineral Resources – Processing" that the County otherwise omitted, in contravention of ORS 174.010. In any event, even if there were any merit to OSCC's suggestion that this use carries more hazards and risks, that risk is offset by all of the federal and state oversight that OSCC concedes exists in this case. In other words, the County is not acting alone in the approval process. The County is looking at the zoning aspect of this case, but other state and federal agencies are looking at policy issues such as public need, and other issues such as Clean Water Act compliance, etc. While there is some overlap between the roles that the various governmental agencies play, it is simply wrong to assert that zoning standards regarding the permissibility of a land use should be interpreted differently when the project involved is controversial or has more impacts than other uses within that same land use category.

Second, OSCC's contention that other "Mineral Resources - Processing" uses do not carry as much risk or require as much oversight is both speculative and unsubstantiated by evidence in the record.

For these reasons, the Board finds that the Gas Processing Facility is permitted by right in the Industrial zone. Because this use is permitted by right, the Board also denies OSCC's related contention that the County must approve a "similar use" determination or a post-Acknowledgement Plan Amendment in order to allow the Gas Processing Facility. CCZLDO 3.1.400. The "similar use" determination provisions set forth in CCZLDO 3.1.400 and CCZLDO 4.1190 apply to those potential land uses that do not fall within the letter of those permitted land uses set forth in the Ordinance. CCZLDO 3.1.400 applies to uses in the CBEMP zones, and provides as follows:

SECTION 3.1.400 PROHIBITED USES:

Unless an exception is specifically listed in the Ordinance, any use not listed or specifically identified as not permitted are prohibited. However, It is recognized that in the development of a Comprehensive Zoning and Land Development Ordinance, not all uses of land and water can be listed, nor can all future uses be anticipated. A "use" may have been inadvertently omitted from the list of those specified as permitted or conditional in each of the various districts designated. Ambiguity may arise concerning the appropriate classification of a particular use within the meaning and intent of this Ordinance.

1. The classification of a new permitted or conditional use may be approved by the Planning Director, or may be referred to the Board of Commissioners for consideration;

2. To classify and add a new permitted or conditional use to the uses already listed within a zoning district without formal amendment to the text of this Ordinance, the Planning Director must find that the proposed use to be added is similar and not more obnoxious or detrimental to the public health, safety, and welfare as other uses listed in the respective zoning district.

3. Notice of any decision to classify a new use shall be published in a newspaper of general circulation at least ten (10) days prior to the effective date of the decision, and shall be subject to appeal pursuant to Article 5.8. Decisions to classify a new use may be appealed following the procedures of Article 5.8.

a. Any decision to classify a use pursuant to this section shall be entered in a registry available to the public setting forth:

-
- i. The street address or other easily understood geographic reference to the subject property;*
 - ii. The date of the decision; and*
 - iii. A description of the decision made.*

See also CCZLDO 4.1.190 (virtually identical language as above, which applies to uses in the "Balance of County"). A "similar use" determination occurs when the proposed use does not fall within the definitions of uses that are expressly allowed in the zone. If JCEP's proposed use did not fit within the meaning of "Processing * * * Other Mineral or subsurface resources" as set forth in CCZLDO 4.4200(29)(b) and further defined by the term "Mineral Resources – Processing" in CCZLDO 2.1.200, then the "similar use" determination process would be available to them. In this case, resort to that alternative process is not required.

CCZLDO 4.4.200 provides that fill, DMD, a fire station, office buildings, and processing of subsurface resources and their accessory uses are permitted outright in the Industrial zone. The application seeks a compliance determination for the aforementioned uses as all uses are listed as permitted outright and the Application proposes placing all uses on the Industrial site. As detailed in the Project description, office buildings in conjunction with Project components, specifically the fire station and gas processing facilities, are proposed and allowed in the Industrial zone.

The applicant also seeks a compliance determination for the use of processing of subsurface resources. The Project requires natural gas, a subsurface resource, be processed in order to remove undesirable impurities that can cause equipment corrosion or the gas to freeze when liquefied. The Project component that processes subsurface resources is referred to as the 'gas processing plant.' The use category 'processing subsurface resources' is the appropriate use category because processing subsurface resources is the primary purpose of the gas processing plant. See Letter dated September 29, 2015 from Robert J. Naeger, JCEP., Exhibit 12. This use is correctly characterized as 'processing subsurface resources' because the primary purpose of the facility is to process the natural gas in preparation for liquefaction as described in Exhibit 12.

The uses accessory to the fire station and gas processing facility include the SORSC, a road, and utility corridor.

The road and utility corridor is accessory because it provides a road for trucks to use to deposit fill on the Industrial parcel and the road and utility corridor serves the fire station, office buildings and gas processing facility by connecting these facilities to the western portion of the Project. Because these uses and their accessory uses are permitted outright, the Board approves the proposed uses and their accessory uses in the Industrial zone.

Southwest Oregon Regional Safety Center ("SORSC"). The applicant is proposing a multi-organizational office complex known as the Southern Oregon Regional Safety Center (SORSC) to provide additional security, safety, and fire-fighting capabilities. The SORSC would support a fire station, offices for the Coos County sheriff, Coast Guard, the Port, and a training center for the sheriff and Southwestern Oregon Community College.

The SORSC is accessory to both the fire station and the gas processing facility. The fire station is an emergency response facility and will have fire-fighting capabilities to support the Project. The SORSC is accessory to the fire station and as an expanded fire station will have offices for public safety and security entities which will have a role in responding to fire and other natural events as service providers. The SORSC will include limited classroom facilities to train and respond to events. In sum, the SORSC would support a fire station, offices for the Coos County sheriff, Coast Guard, the Port, and a training center for the sheriff and Southwestern Oregon Community College.

Jordan Cove has an agreement with the Coos County Sheriff that would allow Jordan Cove to pay for on-site security personnel. The SORSC would occupy about 8 acres east of Jordan Cove Road and south of the Trans-Pacific Parkway.

The SORSC is permitted in the IND zone as an accessory use to the fire station. CCZLDO 4.4.200 states that "[t]he following uses and their accessory uses are permitted outright in the IND zoning districts: * * * 20. Fire station."

Further, "Accessory Uses" are uses that: (1) are subordinate to and serve a principal use; (2) subordinate in area or purpose to that principal use; (3) contribute to the comfort, convenience, or necessity of occupants of the principal use; and (4) are located on the same unit of land as the principal use. CCZLDO 2.1.200. The SORSC is permitted in the IND zone as an accessory use to the Fire Station because the SORSC meets the definition of "Accessory Use." The SORSC serves, and is subordinate in purpose to, the Fire Station because the SORSC is a training center for firefighters who will work at the Fire Station. The SORSC contributes to the comfort and convenience of the firemen who utilize the Fire Station because the SORSC offers training to current and future firefighters. The SORSC is located on the same unit of land as the Fire Station. See Applicant Figures 2, 3, and 9.

OSCC contends that the SORSC is not allowed in the IND zone because the SORSC will house government offices and schools, which are not allowed in the IND zone. See Exhibit 3. The Board disagrees with this contention for two reasons.

First, the record shows that OSCC's assertion is wrong as a matter of law: Although the SORSC will house government offices for the Coos County Sheriff, the Coast Guard, and the Port, these "offices" are permitted in conjunction with a permitted or conditionally permitted use. CCZLDO 4.4.200(26). In this regard, this is no different than a fast food restaurant that has a manager's office - the office is not a separate land use from a restaurant but is rather an inherent part of the restaurant. In this case, the offices will occur in conjunction with the Fire Station, which is a permitted use under CCZLDO 4.4.200(20). Nothing in the Ordinance prohibits a fire station from having offices, so long as those offices are used in conjunction with the general purposes and function of the fire station. These proposed offices are not a "government building" use merely on account that they will be used by government employees. Rather, they will be used by government personnel that requires them to interact with, and be collocated with,

fire station personnel. Therefore, in this case, the government offices in the SORSC are allowed as accessory uses.

Second, the classrooms and training rooms in the SORSC are allowed as "Accessory Uses" for the reasons explained above. OSCC does not dispute these points. Instead, OSCC relies upon CCZLDO 4.2.600 in support of its contention, a provision that has been amended and no longer addresses uses in the IND zone. The amended IND use list does not prohibit offices and schools as Accessory Uses.

For these two reasons, the Board disagrees with OSCC's contentions and recommends that the County find that the SORSC, including its office and training center components, is permitted by right in the IND zone as an "accessory use" to the permitted Fire Station.

In a previous case that was withdrawn prior to final resolution, various opponents argued that the use should be considered "solid waste disposal" based on the Coos County definition. Staff researched what the definition of solid waste is pursuant to statutory definition used by Department of Environmental Quality ("DEQ"), because this agency would have regulatory authority over that type of use.

ORS 459.005(24) "Solid waste" means all useless or discarded putrescible and nonputrescible materials, including but not limited to garbage, rubbish, refuse, ashes, paper and cardboard, sewage sludge, septic tank and cesspool pumpings or other sludge, useless or discarded commercial, industrial, demolition and construction materials, discarded or abandoned vehicles or parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid materials, dead animals and infectious waste as defined in ORS 459.386. "Solid waste" does not include:

- (a) Hazardous waste as defined in ORS 466.005.**
- (b) Materials used for fertilizer or for other productive purposes or which are salvageable as such materials are used on land in agricultural operations and the growing or harvesting of crops and the raising of animals.**
- (c) Woody biomass that is combusted as a fuel by a facility that has obtained a permit described in ORS 468A.040.**

The county defines solid waste as "storage or disposal of industrial solid waste such as a co-generation facility." CCZLDO 2.1.200. The applicant has also explained the permitting process through DEQ which distinguishes between a solid waste facilities and the use they have requested. In the case, the primary use²⁵ is not storage or disposal of waste and as such the use

²⁵ Virtually all industrial uses create some degree of waste product, but that incidental waste is accounted for within the definition of the use itself. While perhaps a legal fiction of sorts, these incidental uses and activities are considered to be an integral part of the primary use request. As an example, every restaurant has an office where the manager can conduct the administrative functions of the restaurant. That office is not a separate use, nor is it considered an accessory use. Rather, it is an integral part of any restaurant use.

should not be characterized as Solid Waste Disposal. The Project, including the gas processing facility, will be classified as a "Conditionally Exempt Small Quantity Generator" or a "Small Quantity Generator." Under either classification, waste will be shipped off site to an appropriate solid waste disposal facility at regularly scheduled intervals as established by the Resource Conservation and Recovery Act ("RCRA"). Therefore, the Board agrees with the applicant that the appropriate use is "processing."

The applicant has also listed out several accessory uses and components of the uses requested. The ordinance does not specify a separate review for each accessory use but the identified accessory uses are: a road, utility corridor and emergency response facilities as part of the fire station.

As part of the compliance determination the development and use standards along with the special development considerations are required to be reviewed.

SECTION 4.4.230 Development and Use Standards:

1. *Development and use standards apply to all new development and creation of lots or parcels unless it meets the circumstances of § 5.6.130.*
2. *Minimum Lot size:*
 - a. *There is no minimum lots size standard for this zoning.*
 - b. *The dimension requirements must be meet.*
3. *Minimum Street frontage and minimum lot width is 20 feet.*
4. *Front setback is 20 feet.*
5. *Front, side and rear setbacks are 5 feet from abutting properties that are zoned Controlled Development or residential zoning districts.*
6. *Setback exception – Front yard setback requirements of this Ordinance shall not apply in any residential district where the average depth of existing front yards on developed lots within the same zoning district block, but no further than 250 feet from the exterior side lot lines of the lot and fronting on the same side of the street as such lot, is less than the minimum required front yard building setback. In such cases the front yard setback requirement on any such lot shall not be less than the average existing front yard building setback.*
7. *Building height does not have any requirement, except those sites abutting a residential or controlled development zone shall have a max height of 35 feet plus one (1) additional foot in height for each foot of setback exceeding 5 feet (i.e. if the setback is 10 feet, the maximum building height would be 40 feet). However, spires, towers, domes, steeples, flag poles, antennae, chimneys, solar collectors, smokestacks, ventilators or other similar objects may be erected above the prescribed height limitations, provided no usable floor space above the height limits is thereby added. Such over height object shall not be used for advertising of any kind.*
8. *Access and parking is regulated in chapter VII.*

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9. **Riparian Vegetation Protection Setback.** Riparian vegetation within 50 feet of a estuarine wetland, stream, lake or river, as identified on the Coastal Shoreland and Fish and Wildlife habitat inventory maps, shall be maintained except that:
- a. Trees certified as posing an erosion or safety hazard. Property owner is responsible for ensuring compliance with all local, state and federal agencies for the removal of the tree.
 - b. Riparian vegetation may be removed to provide direct access for a water-dependent use if it is a listed permitted within the zoning district;
 - c. Riparian vegetation may be removed in order to allow establishment of authorized structural shoreline stabilization measures;
 - d. Riparian vegetation may be removed to facilitate stream or stream bank clearance projects under a port district, ODFW, BLM, Soil & Water Conservation District, or USFS stream enhancement plan;
 - e. Riparian vegetation may be removed in order to site or properly maintain public utilities and road right-of-ways;
 - f. Riparian vegetation may be removed in conjunction with existing agricultural operations (e.g., to site or maintain irrigation pumps, to limit encroaching brush, to allow harvesting farm crops customarily grown within riparian corridors, etc.) provided that such vegetation removal does not encroach further into the vegetation buffer except as needed to provide an access to the water to site or maintain irrigation pumps; or
 - g. The 50 foot riparian vegetation setback shall not apply in any instance where an existing structure was lawfully established and an addition or alteration to said structure is to be sited not closer to the estuarine wetland, stream, lake, or river than the existing structure and said addition or alteration represents not more than 100% of the size of the existing structure's "footprint".
 - h. Riparian removal within the Coastal Shoreland Boundary will require a conditional use. See Special Development Considerations Coastal Shoreland Boundary.
 - i. The 50' measurement shall be taken from the closest point of the ordinary high water mark to the structure using a right angle from the ordinary high water mark.

Board's Findings: The only development standards that are applicable are access and parking found in Chapter VII and the riparian setbacks in §4.4.230.9. The applicant will comply with the §4.4.230.9. Chapter VII will be reviewed in a different section of this report to cover the entire project.

1. The applicant is not creating a new parcel and the current parcel meets the lot dimensions for development.
2. The proposed development in the Industrial zone is compliant with the development and use standards. Per Section 4.4.230.2.a there is no minimum lot size for the Industrial zone. The dimension requirements are met as described below.
- 3-5. The proposed development in the Industrial zone has more than the minimum 20 feet of street frontage and lot width. The front is setback more than 20 feet from TransPacific Parkway.

The abutting properties are not zoned Controlled Development or residential zoning districts, thus the front, side, and rear setback standards do not apply. See Application, Figures 2 & 10. The application is compliant with the dimension requirements and applicable setback standards.

6. The application does not seek a setback exception.
7. As stated above, the proposed Industrial site does not about a residential or controlled development; thus, building height does not have any requirement.
8. Parking and access will be addressed further on in this recommendation infra. See Section III, II - KK of the application narrative.
9. Impacts to riparian vegetation are consistent with the provisions of LDO Section 4.4.230.9 because the only estuarine wetland on the North Spit identified as a 'major marsh' is Henderson Marsh. Henderson Marsh is not located within the IND zone. There are no streams, lakes or rivers identified on the Coastal Shoreland and Fish & Wildlife habitat inventory maps within the Industrial zone on the North Spit. Coos County has two Fish and Wildlife habitat inventory maps. The Fish and Wildlife habitat inventory maps only identify Henderson Marsh as an inventoried estuarine wetland on the North Spit, which is not within the Industrial zone.

ARTICLE 4.11 SPECIAL DEVELOPMENT CONSIDERATIONS AND OVERLAYS

SECTION 4.11.100 Purpose:

The purpose of this Article is to prescribe special regulations for the use and development of lands situated within resource or hazard areas identified on the Plan Maps for Volume I (Balance of County²⁶). The applicable standards are as follows:

SECTION 4.11.110 Priority of Restrictions:

When the restrictions imposed by the provisions of an overlay or special development consideration pertaining to a property is found to be in conflict with the primary zone the more restrictive provisions shall govern.

SECTION 4.11.120 Goal #5 Conflict Resolution Process:

When in the course of implementing the Coos County Comprehensive Plan it becomes evident that a conflict exists concerning the use of land identified as a Oregon Statewide Planning Goal #5 resource that is otherwise protected pursuant to OAR 660-16-005(1), then any proposed conflicting use may only be allowed after the an Administrative Conditional Use application has been

²⁶ To reiterate a point made earlier, for zoning purposes, the County was divided into three separate areas, and each area is addressed in a separate part of the Comprehensive Plan. There are two estuary plans (Coos Bay and Coquille), and the rest of the land in Coos County is called the "Balance of County" for zoning purposes.

completed based on findings that address the requirements of OAR 660-16-0005(2) and OAR 660-165-0010.

SECTION 4.11.125 Special Development Considerations:

The considerations are map overlays that show areas of concern such as hazards or protected sites. Each development consideration may further restrict a use. Development considerations play a very important role in determining where development should be allowed in the Balance of County zoning. The adopted plan maps and overlay maps have to be examined in order to determine how the inventory applies to the specific site.

1. Mineral & Aggregate Plan Implementation Strategies

The mineral & aggregate maps have inventoried the following:

- Coal Basins
- Areas of Oil & Gas Exploration Leases
- Metal Mines & Prospects (Removed Per Ordinance 91-09-018PL 12-18-91)
- Crushed Rock Quarries
- Sand & Gravel Pits
- Other Aggregate Sites (Ordinance 92-05-008PL 3-7-92)

Purpose Statement:

Coos County shall manage its identified mineral and aggregate resources (except black sand prospects) in their original character until mined, except where conflicting uses are identified during implementation of the Plan, and such uses are justified based on consideration of the economic, social, environmental and energy consequences of the conflicting uses, or where existing uses have been grandfathered. Where no conflicts are identified, agriculture, forest or similar open space zoning shall be used to implement this strategy.

Board's Findings: The application is correct that pursuant to the Coos County Comprehensive Plan ("Plan") Volume 1, Part 1, Section 5.5 and CCZLDO Strategy 1.c.ii, the coal basin is described as commercially unviable and, accordingly, not designated as a Goal 5 resource. Furthermore, the property is not identified as being located in the inventoried having minerals or aggregate on the property. Therefore, there is no criterion to address for the requested activities.

2. Water Resources

Board's Findings: As depicted on the Coos County water resources inventory map, the Industrially zoned area is at the south-eastern perimeter of the mapped approximate extent of the Dunes Aquifer. No residential or commercial development is proposed in this zone and no development is proposed at the dam sites; thus, the application is compliant with the water resources criteria. Since this proposed site is not near a mapped water resource area, this criterion does not apply to this project.

3. *Historical, Cultural, and Archaeological Resources Natural Areas and Wilderness
(Implements Policy 5.7)*

The Historical/Archeological maps have inventoried the following:

- *Historical;*
- *Area of Archaeological Concern;*
- *Botanical; and*
- *Geological Resources.*

Purpose Statement:

Coos County shall manage its historical, cultural and archaeological areas, sites, structures and objects so as to preserve their original resource value. This strategy recognizes that preservation of significant historical, cultural and archaeological resources is necessary to sustain the County's cultural heritage.

Board's Findings: This strategy is a legislative directive to the County to adopt protective regulations and does not apply directly to site specific zoning approval requests such as this.

a. Historical Structures: Coos County shall permit the expansion, enlargement or other modification of identified historical structures or sites provided that such expansion, enlargement or other modification is consistent with the original historical character of the structure or site:

i. This strategy shall be implemented by requiring Planning Director review of site and architectural plans. The proposed project shall be consistent with the original historical character of the site and structure.

ii. This strategy recognizes that enlargement, expansion or modification of historical structures is not inconsistent with Coos County's historic preservation goal. The Planning Director shall approve the alteration or modification if the proposal is found to be compatible with the character of the resource with respect to style, scale, texture and construction materials or it is found to enhance the historical value of the resource. Further, this strategy recognizes that the site and architectural modification may be necessary to preserve, protect or enhance the original historical character of the structure.

iii. If there is evidence to show that the cost of repairs or restoration cost more than the value of the structure then the Planning Commission may authorize the structure to be removed and replaced with something of like value.

iv. Staff shall refer to the Oregon State Historical Preservation Office data for details on locations of historical structures.

Board's Findings: This section is not applicable because the application does not propose expansion, enlargement or other modification of identified historical structures.

b. Areas of Archaeological Concern: Coos County shall continue to refrain from widespread dissemination of site-specific inventory information concerning identified archaeological sites. Rather, Coos County shall manage development in these areas so as to preserve their value as archaeological resources.

1. This strategy shall be implemented by requiring development proposals to be accompanied by documentation that the proposed project would not adversely impact the historical and archaeological values of the project's site. "Sufficient documentation" shall be a letter from a qualified archaeologist/historian and/or a duly authorized representative of a local Indian tribe(s).

Board's Findings: The applicant's development proposal is accompanied by documentation that the proposed project would not adversely impact the historical and archeological values of the project's site. The Tribes have submitted a confidential record that makes generalized statements pertaining to activity in the immediate vicinity of the Project, but that record does not reveal any specific information of documented archeological sites.

This triggers the importance of the "Unanticipated Discovery Plan ("UDP") None of the tribes that commented on this case advanced any specific quarrels with the applicant's UDP.

Because there will be no known adverse impacts and the Applicant will rely upon the procedures in the attached Unanticipated Discovery Plan (See Applicant's Exhibit 20) should any future excavation of the Project site identify archeological resources, the Application is compliant with this criterion.

Coos County has provided notice to both local Tribes with a request for comments. There are no county inventoried historical, archaeological, botanical or geological resources in the area subject to the application. However, this is in an area of interest to the local tribes. For this reason, Staff provided notice to the Tribes. The Tribe submitted extensive comments on January 12, 2016, and February 22, 2016. These comments are addressed elsewhere, in response the CBEMP Policy 18. See page 120, *supra*.

ii. Properties which have been determined to have an "archaeological site" location must comply with the following steps prior to issuance of a "Zoning compliance Letter" for building and/or septic permits.

1) The County Planning Department shall make initial contact with the Tribe(s) for determination of an archaeological site(s). The following information shall be provided by the property owner/agent:

- a) Plot plan showing exact location of excavation, clearing, and development, and where the access to the property is located;***
- b) Township, range, section and tax lot(s) numbers; and***

c) Specific directions to the property.

- 2) The Planning Department will forward the above information including a request for response to the appropriate tribe(s).*
- 3) The Tribe(s) will review the proposal and respond in writing within 30 days to the Planning Department with a copy to the property owner/agent.*
- 4) It is the responsibility of the property owner/agent to contact the Planning Department in order to proceed in obtaining a "Zoning Compliance Letter" (ZCL) or to obtain further instruction on other issues pertaining to their request.*

Board's Findings: According to the Coos County Planning Director, the Project is in an area where notification needs to be provided to the tribes. Although there was an initial problem with timely notice to the Tribes, the County cured this problem and provided notice to the tribes as required. This criteria is satisfied.

iii. In cases where adverse impacts have been identified, then development shall only proceed if appropriate measures are taken to preserve the archaeological value of the site. "Appropriate measures" are deemed to be those, which do not compromise the integrity of remains, such as:

- 1) Paving over the sites;*
- 2) Incorporating cluster-type housing design to avoid the sensitive areas; or*
- 3) Contracting with a qualified archaeologist to remove and re-inter the cultural remains or burial(s) at the developer's expense. If an archaeological site is encountered in the process of development, which previously had been unknown to exist, then, these three appropriate measures shall still apply. Land development activities found to violate the intent of this strategy shall be subject to penalties prescribed by ORS 97.745 (Source: Coos Bay Plan).*

iv. This strategy is based on the recognition that preservation of such archaeologically sensitive areas is not only a community's social responsibility but is also a legal responsibility pursuant to Goal #5 and ORS 97.745. It also recognizes that historical and archaeological sites are non-renewable, cultural resources (Source: Coos Bay Plan).

Board's Findings: Adverse impacts have not been identified. See Applicant's Exhibit 20. Therefore the above criteria are not applicable.

c. Botanical: Coos County shall protect sites of special botanical interest by use of appropriate zoning for the site inventoried on the Botanical Resources Map. Such significant Botanical Areas shall be preserved in their natural character, as consistent with

the zoning established for the site. However, this is not meant to preclude the development of residences adjacent to the Yoakum Point Darlingtonia Bog; as otherwise allowed by the Coos County Comprehensive Plan, residences may be permitted adjacent to the bog provided care is taken during construction of such to ensure that the bog is not disturbed in any way.

This strategy recognizes the value of Significant Botanic Areas, and also that residential development can occur in a compatible way with the Yoakum Point Darlingtonia Bog.

Board's Findings: There are no botanical resources identified on the North Spit. Therefore, this criterion is not applicable.

d. Geological Sites: Coos County shall protect the Geologic Sites inventories on the Geologic Resources Map through appropriate zoning that preserves the sites in their natural character. Appropriate zoning (as designated on the Official Zoning Map) and public ownership of the sites ensures that the sites will be preserved in their natural character. This strategy recognizes the value of inventoried Geologic Sites.

Board's Findings: There are no geological resources identified on the North Spit. Therefore, this criterion is not applicable.

4. Beach and Dunes (Implements Policy 5.10)

The Beaches and Dunes map has inventoried the following:

- **Beaches and Dunes**
 - **Suitable for most uses; few or no constraints (Does not require a review)**
 - **Limited Suitability; special measures required for most development**
 - **Not Suitable for Residential, commercial or Industrial Structures**

Purpose Statement:

Coos County shall base policy decisions for dunes on the boundaries for these areas as identified on the plan map titled "Development Potential within Ocean Shorelands and Dunes" and the boundaries delineates following specific areas "Suitable", "Limited Suitability" and "Not Suitable" areas of development potential.

Board's Findings: The Board reviewed the "Balance of County inventory map" and it does not show the IND portion of the property within the Beach and Dunes. The Board is allowed to rely on official maps to make a finding. *D.S. Parklane Development, Inc. v. Metro*, 165 Or App 1, 22, 994 P2d 1205 (2000); *Residents of Rosemont v. Metro*, 173 Or App 321, 333-34, 21 P3d 1108 (2001); *1000 Friends of Oregon v. Metro*, 174 Or App 406, 26 P3d 151 (2001).

Nonetheless, the applicant has provided a report to address the dunes development suitability, found at the Applicant's Exhibit 6.

The western portion of the Industrial zoning district extends across a Wet Deflation Plain ("WDP") and as such is located within the "Beach and Dune Areas with Limited Development Suitability." See Figure 1 to Applicant's Exhibit 6, Beach and Dunes Development Suitability Analysis (Showing previously approved dune disturbance area"). Proposed uses to be located in the western portion of the Industrial zone include the SORSC, fill, office buildings, the gas processing facility, and the accessory road and utility corridor. As explained in Applicant's Exhibit 6, Beach and Dunes Development Suitability Analysis, the land form mapped as a Beaches and Dune Special Consideration Area, including the interdune areas ("Wet Deflation Plains") identified within the Project, are located above the base flood elevation and not subject to ocean flooding. Thus, the area qualifies as "Limited Development Suitability."

As detailed in Applicant's Exhibit 6, Beach and Dunes Development Suitability Analysis, Sections 3.3, 3.4, and 3.5: (1) development in these areas will have minimal impacts because the site was previously occupied by an industrial use and impacts will be mitigated for, (2) geotechnical engineers will provide soil stabilization, including native vegetation and gravel surfacing to stabilize the surface, (3) the Project will have minimal potential to generate adverse effects on surrounding areas and further, effects will be minimized by erosion control and buffers, and (4) the proposed Project will not cause hazards to life, property, or the natural environment.

For the purpose of this analysis and with respect to subsection (a), "adjacent areas" means properties abutting the Project. Furthermore, although opponents may contend that Policy 5.10 requires consideration of a broad array of potential impacts and health hazards, the County should deny this contention and find that it has previously interpreted this policy to be limited to a review of potential adverse geologic impacts that might occur as a result of the proposed development. LUBA has affirmed this interpretation. *Borton v. Coos County*, 52 Or LUBA 46 (2006).

In Sections 3.3, 3.4, and 3.5 the aforementioned criteria are addressed. Please note, CBEMP Policy 30 has five requirements, while the Special Development Considerations Beach and Dunes Policy only has four. Applicant's Exhibit 6, Beach and Dunes Development Suitability Analysis, is overly comprehensive as it responds to the five Policy 30 requirements but only four are applicable in the Balance of County. Because the application has demonstrated compliance with the four criteria, the Board finds the application to be compliant with the Beach and Dunes Special Development Consideration Policy.

ii. Further, Coos County shall cooperate with affected local, state and federal agencies to protect the groundwater from drawdown, which would lead to loss of stabilizing vegetation, loss of water quality, or intrusion of saltwater into water supplies. Coos County shall cooperate with state and federal agencies in regulating the following actions in the beach and dune areas with limited development potential:

- a) Destruction of desirable vegetation (including inadvertent destruction by moisture loss or root damage);***
- b) The exposure of stable and conditionally stable areas to erosion;***

c) Construction of shore structures which modify current air wave patterns leading to beach erosion; and

d) Any other development actions with potential adverse impacts.

Boards Findings: The applicant explains how the Project will not cause adverse impacts to groundwater supplies in the Applicant's Exhibit 6, Beach and Dunes Development Suitability Analysis by Steven K. Donovan, P.E. SHN Consulting Engineers, dated Sept. 2015. There does not appear to be any evidence submitted to the contrary, and the Donovan report appears to constitute substantial evidence supporting a finding that the groundwater supply in this area will be protected. See finding on Exh. 6, p. 4, 6, 7, 8, 10. Therefore the Board recommends that the County find that the application is consistent with these provisions.

b. Unsuitable: Coos County shall prohibit residential development and commercial and industrial buildings within areas designated as "Beach and Dune Areas Unsuitable for Development". The "Beach and dune Areas Unsuitable for Development" includes: active foredunes; other foredunes which are conditionally stable and that are subject to ocean undercutting or wave overtopping; and interdune areas (deflation plains) that are subject to ocean flooding.

The measures prescribed in this policy are specifically required by Statewide Planning Goal #18 for the above referenced dune forms, and that is important to ensure that development in sensitive beach and dune areas is compatible with or can be made compatible with, the fragile and hazardous conditions common to such areas.

Implementation shall occur through an Administrative Conditional Use process, which shall include submission of a site investigation report by a registered civil engineer or geologist that addresses this subsection. Coos County shall permit other developments in these areas only:

i. When specific findings have been made that consider at least:

a) the type of use proposed and the adverse effects it might have on the site and adjacent areas;

b) the need for temporary and permanent stabilization programs and the planned maintenance of new and existing vegetation;

c) the need for methods for protecting the surrounding area from any adverse effects of the development, and

d) hazards to life, public and private property, and the natural environment, which may be caused by the proposed use, and

ii. When it is demonstrated that the proposed development:

a) is adequately protected from any geologic hazards, wind erosion, undercutting, ocean flooding and storm waves; or is of minimal value; and

b) is designed to minimize adverse environmental effects, and

iii. When breaching of foredunes is contemplated the following specific criteria has to be addressed:

a) the breaching and restoration is consistent with sound principles of conservation, and either

b) the breaching is necessary to replenish sand supply in interdune areas, or

c) the breaching is done on a temporary basis in an emergency (e.g., fire control, cleaning up oil spills, draining farm lands, and alleviating flood hazards).

iv. Coos County shall cooperate with affected local, state and federal agencies to protect the groundwater from drawdown which would lead to loss of stabilizing vegetation, loss of water quality, or intrusion of saltwater into water supplies. Coos County shall cooperate with state and federal agencies in regulating the following actions in the beach and dune areas with limited development potential:

a) Destruction of desirable vegetation (including inadvertent destruction by moisture loss or root damage);

b) The exposure of stable and conditionally stable areas to erosion;

c) Construction of shore structures which modify current air wave patterns leading to beach erosion; and

d) Any other development actions with potential adverse impacts.

Board's Finding: No use is proposed in Beaches and Dune areas unsuitable for development on the County's inventory map. This subsection is not applicable.

5. *Non-Estuarine Shoreland Boundary (implements Balance of County Policy 5.10).*

The Coastal Shoreland Boundary map has inventoried the following:

- Coastal Shoreland Boundary
- Beach Erosion
- Coastal Recreation Areas
- Area of Water-Dependent Uses
- Riparian Vegetation
- Fore Dunes
- Head of Tide
- Steep Bluffs over 50% Slope

- Significant wetland wildlife habitats
- Wetlands under agricultural use
- Areas of Exceptional Scenic Quality and Coastal Headlands
- Headland Erosion

Purpose Statement:

Protection of major marshes (wetlands), habitats, headlands, aesthetics, historical and archaeological sites: Coos County shall provide special protection to major marshes, significant wildlife habitat, coastal headlands, exceptional aesthetic resources, and historic and archaeological sites located within the Coastal Shorelands Boundary of the ocean, coastal lakes and minor estuaries. This strategy shall be implemented through plan designations and ordinance measures that limit uses in these special areas to those uses that are consistent with protection of natural values, such as propagation and selective harvesting of forest products, grazing, harvesting wild crops, and low intensity water-dependent recreation. This strategy recognizes that special protective consideration must be given to key resources in coastal shorelands over and above the protection afforded such resources elsewhere in this plan.

Board's Finding: The industrial area lies outside of the Coastal Shoreland Boundary. Therefore, this criterion does not apply. No portion of the "Balance of County" zones which are a part of the applicant's project are located within the Coastal Shoreland Boundary. The application does not propose any use in a "major marsh," "significant wildlife habitat," "coastal headlands," or "exceptional aesthetic resources." With respect to "archeological sites" there is an inventoried site identified as 9(CS-26) on the Shoreland Values Inventory Map. However, this archeological site is not in the "Balance of County," so it does not need to be considered in this section. Nonetheless, applicant states that it has consulted with the Tribes during the archeological surveys and a plan will be in place for notifying Tribes in case of any inadvertent archeological discoveries. The Board imposes a condition of approval to require the applicant to initiate further consultation with the Tribes.

6. Significant Wildlife Habitat (Implements Balance of County Policy 5.6)

The Fish & Wildlife Habitat Map I (1985 Ordinance 85-08-011L) has inventoried the following: ****

Board's Finding: The proposed project and request for approval does not propose any uses or activities in sensitive big-game, bird habitat or salmonid spawning or rearing areas.

7. Natural Hazards (Implements Balance of County Policy 5.11)

The Natural Hazards map has inventoried the following:

- Wind Erosion/Deposition
- Earth flow & Slump Topography
- Critical Stream Bank Erosion

- *Flash Flooding*
- *Rock fall & Debris and Flow Terrain*

Purpose Statements:

Coos County shall regulate development in known areas potentially subject to natural disasters and hazards, so as to minimize possible risks to life and property. Coos County considers natural disasters and hazards to include stream and ocean flooding, wind hazards, wind erosion and deposition,²⁷ critical stream bank erosion, mass movement (earthflow and slump topography), earthquakes and weak foundation soils.

Hearings Officer's Findings: The only applicable hazard would be the wind erosion/deposition but the applicant is correct that the county has not adopted provision to address this hazard. However, the measures outlined in the beach and dunes report provided by the applicant could be considered protective measures that would minimize any wind erosion. This policy states in regards to earthquake and weak foundation soils that Coos County shall (1) support the State Building Code Division's building code enforcement program so as to provide maximum structural protection necessary to safeguard against seismic hazards (earthquakes); and (2) require that high occupancy and critical use facilities (such as schools and hospitals) to be located in the areas of stable ground conditions. Therefore, this criterion does not apply to this application.

²⁷ These hazards are addressed under policies for "Dunes and Ocean and Lake Shorelands."

Compliance with Overlay Zones

The CCZLDO specifically states that overlay zones only apply to non-estuary zoning districts in Chapter IV. CCZLDO Chapter IV states "[t]his chapter applies to all non-estuary zoning districts." There are two overlay zones in particular that need to be addressed, floodplain overlay zones and the Southwest Oregon Regional Airport ("SORA") floating zone.

1. Floodplain Overlay

Opponents argue that the application violates the requirements of the floodplain overlay zone set forth in CCZLDO 4.11.201. See Ltr. from Courtney Johnson, OSCC, dated Dec 7, 2015, at p. 7. Exhibit 3. Opponents argue that the floodplain overlay is not limited to non-estuary zoning districts. To support their argument, they state "nothing in the Ordinance indicates that the floodplain overlay zone does not apply in other zoning districts." *Id.* at p. 7. Opponents are mistaken. The text of the CCZLDO specifically states that Chapter IV applies to all non-estuary zoning districts (i.e. Industrial, Forest, and EFU zoning districts). As depicted in applicant's maps contained in Exhibit 22 and more particularly in Figure 18 (entitled "Component of Facility Above Special Flood Hazard"), only a limited area of the Project footprint is both within the Industrial zone and subject to CCZLDO 4.11.217, i.e., the floodplain overlay.

Furthermore, CCZLDO 4.1.160 helps clarify that the overlay zones do not apply in estuary zoning districts. CCZLDO 4.1.160 states:

"In the Estuary Plans the development considerations, also referred to as inventoried areas, have been incorporated in to the site specific zoning. In the Balance of County the development considerations were applied as a broad area and the maps have to be examined in order to determine how the inventory applies to the specific site."

This text reinforces that the overlay zones only apply to non-estuary zoning districts because as stated in the text, the Estuary Plans, such as the CBEMP, have already incorporated the development considerations into the site specific zoning.

Under Article 4.11, Special Development Considerations and Overlays, CCZLDO 4.11.100 states:

"The purpose of this Article is to prescribe special regulations for the use and development of lands situated within resource or hazard areas identified on the Plan Maps for Volume I (Balance of County)."

See CCZLDO 4.11.100 (p. IV-228). As noted above, Article 4.11 includes overlays. This text is further evidence that the overlay zones only apply to Balance of County and not the CBEMP or the Coquille River Estuary Management Plan.

OSCC argues that CBEMP Policy 27 contains language that indicates the County's intent to apply flood regulations to areas within the estuary zones. See Ltr. from Courtney Johnson, OSCC, dated December 7, 2015, at p. 7 Exh. 3. However, as both the hearings officer and LUBA have previously noted, the CBEMP essentially establishes site by site zoning, such that the CBEMP Plan Policies only apply to the extent that they are referenced in the General or Special conditions set forth for that particular CBEMP zoning district. For example, in the 10-CS zone, the general conditions specifically contain the following provision: "3. All permitted uses shall be consistent with the respective flood regulations of local governments, as required in Policy #27." This same condition does not appear in the zoning districts on which the applicant wishes to develop, and neither does it apply to the lands that the applicant seeks to use as mitigation sites (i.e, the 3W-NS, 4-CS, 5-DA, 5A-NS, 6-WD, 6-DA, 7-D, 8-WD, 15-RS, and 15-NA) except for the portions that are proposed to be built in the IND, F, and EFU).

The standard for "other development" within Special Flood Hazard Areas is set forth in CCZLDO 4.11.217(4). Because the proposed development in the 7-D zone is limited to fill and a stormwater detainment facility and no structures are proposed to be constructed within the floodplain overlay, CCZLDO 4.11.217(4) is the applicable criterion. The County may authorize a floodplain application if the development does not increase the base flood elevation by more than one foot or create an increase in the flood hazard. The applicant is compliant with this criterion. The applicant's Exhibit 7 is an analysis and certification of impact of fill on the flood hazard of Coos Bay which provides substantial evidence on this issue. Exhibit 7 is authored by a registered engineer, Mr. Steve Donovan, SHN Consulting Engineers & Geologists, Inc. Mr. Donovan states that the fill will displace a volume of water equivalent to an increase in the height of water of the Base Flood Elevation of 0.004 feet, or less than 3/64ths of an inch. Because the fill will not increase the base flood elevation by more than one foot or create an increase in the flood hazard the applicant is compliant with the floodplain overlay standards and the County may approve the floodplain application. This evidence is un rebutted.

Opponents contend that applicant did not provide the requisite materials to make the floodplain certification determination. See Ltr. from Courtney Johnson, OSCC, dated Dec 7, 2015, at p. 7 Exhibit 3. However, the materials OSCC cites are only required for development of *structures* within the floodplain overlay. CCZLDO 4.11.217(1). As the applicants explained in their materials, there are no structures proposed within the floodplain overlay; as such, the opponents are incorrect that additional materials are required.

Opponents also argue that the Project and related facilities are "critical facilities" under CCZLDO 4.11.217. See Ltr. from Courtney Johnson, OSCC, dated December 7, 2015, at p. 7 Exh. 3; McCaffree Letter dated January 12, 2016 at p. 9 Exh. 60. The term "critical facility" is defined as:

CRITICAL FACILITY: means a facility for which even a slight chance of flooding might be too great. Critical facilities include, but are not limited to schools, nursing homes, hospitals, police, fire

and emergency response installations, installations which produce, use or store hazardous materials or hazardous waste.

Even if the opponents are correct in their characterization of the Project and related components as "critical facilities," that fact would not assist them because the site will be filled and elevated to provide mitigation from tsunamis (elevated to approximately 40 feet) to the point where there will not be even a slight chance of flooding. See App. Exhibit 46, page 6-7 and 6-9. The entire point behind the CCZLDO 4.11.217(5) is to recognize that such facilities should be elevated three feet above the Base Flood Elevation ("BFE") or to the height of the 500-year floodplain, whichever is greater." The applicant obviously meets this standard with the 40 foot of proposed fill. Mr. Donovan's floodplain analysis took into account fill placed below Base Flood Elevation within the entire Project footprint. See Applicant's Exhibit 7, Figure 1. To the extent that the opponents seek to have the applicant subject itself to another alternative sites analysis, it is manifestly obvious that no feasible alternative site is available for this facility. In fact, the opponents do not suggest otherwise.

Additionally, no structures are proposed to be constructed in the floodplain overlay. As such, even if considered critical facilities, none would be located within the floodplain overlay, either in estuary or non-estuary zoning districts. This is evidenced in Applicant's Exhibit 7, Figure 1, and Figure 18. In Figure 18, the structures are clearly marked in orange and Figure 18 depicts no structures in the area of fill below the Base Flood Elevation. Thus, CCZLDO 4.11.217(5) does not apply.

In summary, even if the County applied the floodplain overlay to estuary zoning districts the applicant is still compliant with the floodplain overlay standard.

2. **CCZLDO Section 4.11.400 et seq Southwest Oregon Regional Airport ("SORA") Overlay (AKA: North Bend Municipal Airport).**

Section 4.11.400 Southwest Oregon Regional Airport: *The Southwest Oregon Regional Airport is located within the City of North Bend; however, portions of the Approach, Transitional, Conical and the Horizontal Surfaces span into the Coos County's jurisdiction. The City of North Bend has adopted airport standards and Coos County is adopting the portions of those standards that apply to the Approach, Transitional, Horizontal and Conical Surfaces. The provisions listed below apply only to the Southwest Oregon Regional Airport Transitional, Horizontal and Conical Surfaces do not apply to AO zoning districts or airports as identified Sections 4.11.300 through 4.11.460.*

Board's Findings: One of the major points of contention in this case relates to the fact that the proposed LNG gas terminal is located in fairly close proximity to the North Bend Municipal airport. According to the applicant, "portions of the Airport Surfaces Overlay zone cover the Project area on the North Spit, which are within the County's jurisdiction." See App. 57 (citing sources). As noted above, CCZLDO 4.11.400 states, in relevant part, that "[t]he provisions listed below apply only to the Southwest Oregon Regional Airport ["SORA"] Transitional, Horizontal, and Conical Surfaces [and] do not apply to AO zoning districts or airports as identified in

4.11.300 through 4.11.460." An "AO zoning district" refers to those lands that are designated as "Airport Operations." There are no lands zoned AO in the immediate vicinity of this project.

The applicant states that "none of the structures which received Presumed Hazard Notices are in the Industrial zone, as such they are not subject to this Airport overlay." App. 58. OSCC takes issue with the applicant's conclusion in her letter dated January 7, 2015:

The application explains that the applicant is working to resolve those Notices and Oregon Shores disagrees with the applicant's characterization of the overlay zone as applicable only to the IND zoned parcels. Nothing in the text of the zoning ordinance indicates that the other zoned properties such as the water-dependent or aquatic development zoned areas are exempt from the Airport overlay zone. An overlay zone, by definition, applies over and in addition to base zoning. CCZLDO Section 4.11.200 explains "[o]verlay zones may be super-imposed over the primary zoning district and will either add further requirements or replace certain requirements of the underlying zoning district." The Airport Surface Floating zone states that its provisions apply to "the Southwest Oregon Regional Airport Approach, Transitional, Horizontal and Conical Surfaces" not within AO zoning districts or airports. CCZLDO Section 4.11.400. Nothing in that ordinance limits the application of the Airport Floating Zone based on the underlying zoning as estuary or non-estuary. Therefore, all areas within the described surface areas are subject to the airport zone and must be addressed by the applicant.

See letter from attorney Courtney Johnson, OSCC, dated December 7, 2015, at p. 6-7. Exhibit 3. The applicant counters this assertion in its final argument submitted on February 1, 2016, at p. 6-7. The applicant states:

Opponents contend that the [/AS FLOATING ZONE] is not limited to the Industrial zone. As explained in the Floodplain Overlay section (*supra*) the opponents are mistaken because the text of the CCZLDO in Chapter IV, CCZLDO 4.1.160, and CCZLDO 4.11.100 specifically limits the applicability of overlay zones to non-estuary, Balance of County zoning districts.

The applicant notes that CCZLDO's Introduction to Chapter IV specifically states that "[Chapter IV] applies to all non-estuary zoning districts." For this reason, the applicant concludes that the "/AS FLOATING ZONE" only applies to the non-estuary zoning districts pursuant to CCZLDO Chapter IV.

The applicant also argues that CCZLDO 4.1.160 also indicates that the overlay zones do not apply in estuary zoning districts. CCZLDO 4.1.160 states:

"In the Estuary Plans the development considerations, also referred to as inventoried areas, have been incorporated in to the site specific zoning. In the Balance of County the development considerations were applied as a broad area and the maps have to be examined in order to determine how the inventory applies to the specific site."

According to the applicant, this text reinforces that the overlay zones only apply to non-estuary zoning districts because as stated in the text, the Estuary Plans, such as the CBEMP, have already incorporated the development considerations into the site specific zoning. According to the applicant, it follows that the Southwest Oregon Regional Airport (SORA) Overlay only applies to the Industrially-zoned portion of the Project.

While the applicant's points are well taken and reflect sound, albeit highly technical, legal thought, they seem to be taking advantage of a simple drafting oversight as opposed to reflecting conscious thought on the part of the drafters. Staff seems to admit as much, when it states:

The applicant has made statements that according to the purpose statement found in §4.11.100 that this article only applies to non-estuary zones. This may have not been the intent of this provision but the applicant is correct. The airport does apply with the industrial portion of the property. Notice was provided to the OR Dept. of Aviation and comments have not been received. The applicant has provided findings to address the criteria.

See Staff Report at p. 69.

The Board believes that the intent of the drafters is best encapsulated by the following sentence of CCZLDO 4.11.400: "The City of North Bend has adopted airport standards and Coos County is adopting the portions of those standards that apply to the Approach, Transitional, Horizontal and Conical Surfaces." In other words, the legislative intent was to extend the City's airport sub-zones and extend them out over the County land in order to complete those sub-zones. In this regard, the County's legislative intent seems to be more clear than it is with regard to the floodplain overlay zones. Granted, it looks like the County could have done a better job linking the /AS floating zone to the CBEMP zones.

CCZLDO 4.11.310 goes to great lengths to explain the precise nature of the various airport sub-zones, and there would certainly be no policy reason to suggest that these sub-zones would not apply to structures and obstructions located in the CBEMP zones as well as balance of county zones, especially in light of the stated purposes of the overlay zone.²⁸ As OSCC notes,

²⁸ According to CCZLDO 4.11.300: "The purpose of the Airport Surface Floating zone is to protect public health, safety and welfare. It is recognized that obstructions to aviation have potential for endangering the lives and property of users of selected airports, and property of occupancy of land in the airport's vicinity. An obstruction may affect future instrument approach minimums, and obstructions may reduce the area available for the landing, take-

"[o]verlay zones may be super-imposed over the primary zoning district and will either add further requirements or replace certain requirements of the underlying zoning district." The Board believes that this is more specific language that overrides the more general language set forth in CCZLDO the Introduction to Chapter IV as well as CCZLDO 4.1.160, and CCZLDO 4.11.100.²⁹

The approval standards for development within the SORA Overlay include: height limitations, unless an application was submitted to the Federal Aviation Administration (FAA) and other land use compatibility standards (noise, lighting, glare, emissions, landfills, communications, water impoundments, wetlands).

Despite the analysis set forth above, the applicant also sets forth an alternative argument which is more persuasive, and it relates directly to the fact that they submitted an application to the FAA. The applicant states:

Even if the County were to apply the SORA Overlay to all zoning districts, the applicant would still be compliant with the SORA Overlay. The applicant has submitted applications to the FAA for structures in both 6-WD and the Industrial zone, thus the height limitation is not applicable, regardless of zone. Furthermore, the applicant has analyzed all structures with respect to the land use compatibility standards and is compliant with same. For example, the analysis of industrial emissions takes into consideration all components, regardless of zone. In the industrial emissions analysis Mr. Earl Himes, of Black and Veatch, cites Resource Reports 2 and 9 which were submitted to FERC and included an analysis of all FERC jurisdictional facilities which include construction and Project components in 6-WD. For these reasons,

off and maneuvering of aircraft, thus tending to destroy or impair the utility of the airport and the public investment therein.

²⁹ ORS 174.020 states: In the construction of a statute the intention of the legislature is to be pursued if possible; and "when a general and particular provision are inconsistent, the latter is paramount to the former. So a particular intent shall control a general one that is inconsistent with it." See also *Marriage of Perlenfein*, 316 Or 16, 848 P2d 604 (1993) ("When a general and a particular provision on the same subject are inconsistent, this court applies the particular provision. ORS 174.020.") *Mercy Health Promotion, Inc. v. Dept. of Rev.*, 310 Or 123, 130, 795 P2d 1082 (1990) (where one statute addressed a 'very broad class' of situations and another addressed the precise situation at issue in that case, the court applied the more specific statute.); *State v. Guzek*, 322 Or 245, 268, 906 P2d 272 (1995); *State v. Pearson*, 250 Or 54, 58, 440 P2d 229 (1968); *Smith v. Multnomah County Board of Comm'r's*, 318 Or 302, 309, 865 P2d 356 (1994) (citing *Colby v. Larson*, 208 Or 121, 126-27, 297 P2d 1073, 299 P2d 1076 (1956)); *League of Women Voters v. Lane County Bdry Comm'n*, 32 Or App 53, 573 P2d 1255 (1977), *rev den*, 283 Or 503 (1978); *Foster v. City of Astoria*, 16 Or LUBA 879 (1988). A corollary rule establishes that, in such circumstances, the specific statute is considered an exception to the general one. See *Strader v. Grange Mutual Ins. Co.*, 179 Or App 329, 39 P3d 903 (2002); *Smith v. Multnomah County Board of Commissioners*, 318 Or 302, 309, 865 P2d 356 (1994).

even if the SORA Overlay applied to estuary zoning districts,
Applicant is compliant with the SORA Overlay.

The Board agrees with this analysis. Since the intent of the Ordinance is to allow essentially any height of development that receives a blessing from the FAA, the Ordinance essentially places the FAA in the position of being the final arbiter of issues related to airport sub-zone compatibility. At least implicitly, the Ordinance seems to infer that approval of the FAA is required. The Board imposes a condition requiring the applicant to receive final approval from the FAA pertaining to the five structures that the FAA deemed to be presumptive hazards.

SECTION 4.11.405 Purpose

Section 4.11.405 Purpose: The purpose of this overlay zone is to encourage and support the continued operation and vitality of the Southwest Oregon Regional Airport by establishing compatibility and safety standards to promote air navigational safety at such airport and to reduce potential safety hazards for persons living, working or recreating near the airport.

Board's Findings: This purpose statement is not an approval standard. Nonetheless, the proposed Project is compliant with the purpose of the SORA overlay. The applicant states that "the Project will encourage and support the continued operation and vitality of the Airport." According to the applicant, "[it] has worked closely with the Airport, the ODA, and the FAA throughout the design and development of this Project." See application narrative at p. 57. Evidence of this collaboration is found at Applicant's Exhibit 26, and consists of a letter from Ms. Teresa Cook, Executive Director of the Southwest Oregon Regional Airport dated December 22, 2014. As noted in the District's letter:

- "As operator of the Airport, the District has followed the development of the Project carefully to assess whether the Project would compromise the safety or efficiency of the Airport, including the airspace surrounding the Airport necessary for arrivals and departures."
- "The District strongly concurs with that recommendation and believes that the FAA process will assure that the Airport continues to operate safely and efficiently. ...the District is actively participating in the ongoing discussions between the Project sponsor and the FAA regarding the potential impacts on VFR operations in order to assure that the Project does not impair safe operations at the Airport."

See Applicant's Exhibit 26.

Furthermore, the FAA has reviewed 36ea "7460-Notice of Proposed Construction" forms which the applicant submitted to the FAA based upon the Project design. On July 24, 2014, the FAA issued five "Notices of Presumed Hazard" for the two LNG tanks, the two amine towers, and the LNG carrier. The FAA issued 31 determinations of "No Hazard To Air Navigation" for the remaining structures on July 24, 2014.

The five "Presumed hazards" remain unresolved. Nonetheless, according to JCEP, it is working with the FAA and the Airport to resolve the five Presumed Hazard Notices. Based upon the Airport's statements and FAA Determinations, the Board finds that it is feasible for the applicant to obtain a successful resolution of this issue from the FAA. The SORA Airport is fully appraised on potential adverse and favorable impacts, including to airspace and beneficial socioeconomic impacts.

SECTION 4.11.410 Permitted Uses

Section 4.11.410 Permitted Uses: Except as restricted by Sections 4.11.400 through 4.11.460, in a District in which the /AS zone is combined, those uses permitted by the underlying district are permitted outright in the /AS FLOATING ZONE.

Board's Findings: According to the applicant, "no restrictions" prohibit any permitted uses in Sections 4.11.400 through 4.11.460. There is no evidence or argument to the contrary. Therefore, the uses which are permitted in the underlying districts are permitted outright in the "AS" Floating Zone.

SECTION 4.11.415 Conditional Uses

Section 4.11.415 Conditional Uses: Except as restricted by Sections 4.11.400 through 4.11.460, in a District with which the /AS is combined, those uses subject to the provisions of ARTICLE 5.2 (Conditional Uses) may be permitted in the /AS FLOATING ZONE

Board's Findings: The applicant has demonstrated that no restrictions prohibit any conditional uses in Sections 4.11.400 through 4.11.460. There is no evidence or argument to the contrary. Therefore, the uses which are conditional uses in the underlying districts may be permitted in the "AS" Floating Zone.

SECTION 4.11.425 Imaginary Surface and Noise Impact Boundary Delineation

The airport elevation, the airport noise impact boundary, and the location and dimensions of the runway, primary surface, runway protection zone, approach surface, horizontal surface, conical surface and transitional surface is delineated for the airport by the most current, and approved North Bend Municipal Airport master plan and airport layout plan, the airport master plan along with the associated maps and documents are made part of the official zoning map of the city of North Bend and Southwest Oregon Regional Airport Surface (NB/AS) Inventory Map for Coos County. All lands, waters and airspace, or portions thereof, that are located within these boundaries or surfaces shall be subject to the requirements of this overlay zone

Board's Findings: In accordance with CCZLDO 4.11.425, the applicant states that it has used the most current Southwest Oregon Regional Airport Surface master plan and airport layout plan to prepare its Application under review.

Section 4.11.430 Notice of Land Use, Permit Applications and Overlay Zone Boundary or Surface Changes Within Overlay Zone Area:

Except as otherwise provided herein, written notice of applications for land use decisions, including comprehensive plan or zoning amendments, in an area within this overlay zone, shall be provided to the airport sponsor and the Department of Aviation in the same manner as notice is provided to property owners entitled by law to written notice of land use applications found in Article 5.0...

Board's Findings: This is a directive to provide notice of applications for land use decisions, except when certain exceptions apply. None of the listed exceptions apply. The County can find that the applicant has complied with this section because the applicant has provided a copy of this application to the airport sponsor and the Oregon Department of Aviation ("ODA").

SECTION 4.11.435 Height Limitations on Allowed uses in Underlying Zones:

All uses permitted by the underlying zone shall comply with the height limitations in this section.

1. A person may not construct an object or structure that constitutes a physical hazard to air navigation, as determined by the Oregon Department of Aviation in coordination with the governing body with land use jurisdiction over the property.

2. Subsection (1) of this section does not apply:

a. To construction of an object or structure that is utilized by a commercial mobile radio service provider; or

b. If a person received approval or submitted an application for approval from the Federal Aviation Administration or the Energy Facility Siting Council established under ORS 469.450 to construct an object or structure that constitutes a physical hazard to air navigation. A variance application will not be required if such application was made.

Board's Findings: As mentioned above, the applicant has submitted applications and received approval from the Federal Aviation Administration ("FAA"). See Applicant's Exhibit 5. Accordingly, Subsection (2)(b) applies to this application. Conversely, the application is not subject to the height limitations set forth in the CCZLDO. In other words, the applicant need not demonstrate compliance with Subsection (1) because the applicant has selected to a review process administered by the FAA. The FAA reviews the case under a different set of criteria. If the applicant successfully navigates the FAA process, the application will be consistent with the Airport Surfaces overlay zone and will not be subject to the height limitations.

The opponents argue that the applicant has not demonstrated compliance with CCZLDO 4.11.345 *et seq.* For example, in its letter dated December 18, 2015, OSCC provides as follows:

The Staff Report states that the applicant is working with the FAA, apparently concluding that this will resolve compliance with the Airport Surface Floating zone. The purpose of the zone is to "protect public health, safety and welfare." Section 4.11.345 requires that all structures and uses within the zone shall conform to the requirements of the FAA and Federal and State laws regulating structure height, steam or dust, and other hazards to flight, air navigation or public health. Although the application states that the applicant is working with the FAA to resolve the presumed hazard to air traffic posed by the height of the tanks, amine towers, and LNG ships, the application does not demonstrate that the proposal will conform to legal and regulatory requirements. (Emphasis added).

See also Oregon Shores Post-Hearing Testimony dated January 25, 2016, at p. 2 Exhibit 81. (same). OSCC also discusses this issue on page 11 of their letter dated December 18, 2015. OSCC notes that the Oregon Department of Aviation made the following comments on the Draft Environmental Impact Statement:

"[T]he draft EIS identifies that the LNG vessel will cross the approach to runway 4-22 while in transit to and from the terminal. It also recognizes that air service could be disrupted by vessel transit. However, this section did not identify the risk to aircraft when there is not an air traffic controller in the control tower talking to both the pilot and the LNG vessel. The Airport's control tower is not staffed 24 hours a day even though the airport is open 24 hours a day. Without a mitigation plan, it could make it difficult for aircraft to know when an LNG vessel is passing through the channel when the aircraft is in instrument conditions. Although the LNG ship height has not yet been determined by FAA flight procedures to interrupt the ILS approach, there is a high likelihood that the LNG ship height may interrupt the ILS approach.

State of Oregon DEIS Comments, at 7 (Feb. 12, 2015) (Quoted by OSCC in a letter dated December 18, 2015. Exhibit 17.

The Oregon Dept. of Aviation (ODA) recommended that the Commission await the FAA's determination as to whether the proposed structures constitute a potential hazard, because the "FAA's determination constitutes the high-quality and accurate scientific analysis" required by NEPA. Similarly, Coos County's airport overlay zone requires compliance with federal regulations and the county should rely on the FAA's analysis to determine compliance.

In her letter dated January 25, 2016, Courtney Johnson, OSCC, states:

CCZLDO Section 4.11.435 requires that all structures and uses within the zone shall conform to the requirements of the FAA and Federal and State laws regulating structure height, steam or dust, and other hazards to flight, air navigation or public health. The applicant's supplemental exhibits contain no information to support the conclusion that the concerns of the ODA and FAA have been addressed or resolved.

Exhibit 81. In response, the applicant states the following in its final argument:

The applicant has submitted applications for approval from the FAA. Consequently, the height limitations are not applicable. CCZLDO 4.11.435(2)(b). Evidence of the FAA applications is attached as Applicant's Exhibits 5, 39, and 46. Compliance with the land use compatibility standards is demonstrated in the applicant's narrative and the following additional Applicant materials: Figure 15/Airport Overlay, Figure 16/Airport Noise Contours, Exhibit 23/Airport Overlay Plot Plan, and in Exhibit 33/Industrial Emissions Analysis.

The Board agrees with the applicant that the Ordinance hinges the applicability of CCZLDO 4.11.435(1) on whether the applicant has "submitted an application for approval" to "construct an object or structure that constitutes a physical hazard to air navigation" to the FAA or EFSC. CCZLDO 4.11.435(2)(b) may be inartfully worded, but it is not ambiguous. This provision does seem to rely on an unstated assumption that if the FAA or PSEC were to deny such an application, that the denial is binding on the applicant in lieu of compliance with CCZLDO 4.11.435(1). In any event, for purposes of this decision, CCZLDO 4.11.435(1) does not apply.

Having said that, OSCC's point is well taken when it states:

ODA recommended that the Commission await the FAA's determination as to whether the proposed structures constitute a potential hazard, because the "FAA's determination constitutes the high-quality and accurate scientific analysis" required by NEPA. Similarly, Coos County's airport overlay zone requires compliance with federal regulations and the county should rely on the FAA's analysis to determine compliance.

Because the applicant choose to cast its lot with the FAA, the applicant must demonstrate to the County that it has satisfied the FAA. A condition of approval to this effect shall be added to this approval.

In any event, the Board believes it is feasible for the applicant to gain FAA approval. The Board has reviewed the applicant's materials discussed above and it appears the applicant's

evidence of submission of documentation to the FAA is in order. The Board also finds the December 22, 2014 letter from Teresa Cook, Executive Director of the Southwest Oregon Regional Airport to FERC to be insightful. *See Applicant's Exhibit 26.* In this letter, Ms. Cook states that Coos County Airport District retained the services of nationally recognized experts in airport law to independently assess whether the JCEP project would have adverse impacts on the airport. In light of that analysis, Ms. Cook informed FERC that "the District believes that the FAA process will address and resolve any impacts of the Project and the Airport and will allow the Project to proceed as proposed without having an adverse effect on Airport operations or safety." This evidence is highly credible, because the District is the stakeholder which has the most to lose if improper development is allowed in its approach surfaces. SORA also appears to be an otherwise neutral party. For these reasons, any countervailing evidence submitted by the opponents is deemed to be not credible.

One other issue requires discussion. The opponents describe what they call the "Amine Tower Height Inconsistency." *See e.g., Letter from Katy Eymann dated December 18, 2015, at p. 3.* The opponents point out that the "FAA filing show a structure height for Amine towers of 135." The application, the opponents note, lists the structure height of these towers at 188 ft. AMSL. *See Application Exhibit 5, p. 1 (p. 253 in electronic version).* In a subsequent document submitted by the applicant (App. Exh. 46) the Arime towers show up as having a height of 121 AMSL. At the end of the day, it really does not matter, because the applicant correctly relies on the fact that it has sought and obtained a "No hazard" determination from the FAA. The Board is comfortable concluding that these technical issues will undoubtedly be resolved by the FAA, particularly in light of the fact that the Coos County Airport District is acting in a watchdog role to make sure that its issues are addressed.

Ms. McCaffree engages in a lengthy discussion of the Oregon Airport Planning Rule, ORS 836.025; 836.530. *See McCaffree Letter dated January 12, 2016 at p. 55-6.* The OAPR is not an approval standard for a CUP. She also cites to ORS 836.835 *et. seq.*, but this statutory provision is implemented by CCZLDO 4.11.435(1), and is not an independent approval standard.

Ms. McCaffree appears to argue that the CCCP Plan Policy 5.10 is triggered by the pipeline, which she asserts is "40 feet up in the air." *See Exhibit 60, at p. 20-21.* However, the premise of her argument is incorrect: the pipe is not going to be located 40 feet up "in the air." That would make no sense. The 40 foot is being measured from the airport flightline. Since the applicant proposes to place 46 feet of fill on the site to bring it up out of the tsunami zone, the pipe will also be located at an elevation of 40 feet. *See Applicant's Exhibit 1, at p. 2-27.*

Mr. John Clarke submitted a letter dated December 14, 2015 where he cites to provisions of the North Bend City Ordinance Chapter 18.56, as well as provisions from the Roseburg Land Use and Development Ordinance. Exh. 6. These Ordinance provision are not approval standards for a land use permit located in Coos County, and therefore are not relevant to this proceeding. Mr. Clarke also provides excerpts of the Coos County Transportation System Plan. The Board reviewed these provisions and again finds no approval standards applicable to the permits sought by the applicant. The Board believes that Mr. Clarke is trying to show via the Roseburg photos that the city of Roseburg complies with height restrictions applicable to

airports. To the extent that there is an argument contained therein, however, it is simply not sufficiently developed to provide fair notice to the County or the applicant of the nature of the complaint. Mr. Clarke also provides various "Notice of Presumed Hazard" documents pertaining to the JCEP project. These issues have been addressed above.

**SECTION 4.11.445 LAND USE COMPATIBILITY
REQUIREMENTS:**

Applications for land use or building permits for properties within the boundaries of this overlay zone shall comply with the requirements of this section as provided herein:

1. Noise. *Within airport noise impact boundaries, land uses shall be established consistent with the levels identified in OAR 660, Division 13, Exhibit 5. A declaration of anticipated noise levels shall be attached to any subdivision or partition approval or other land use approval or building permit affecting land within airport noise impact boundaries. In areas where the noise level is anticipated to be at or above 55 Ldn, prior to issuance of a building permit for construction of a noise sensitive land use (real property normally used for sleeping or as a school, church, hospital, public library or similar use), the permit applicant shall be required to demonstrate that a noise abatement strategy will be incorporated into the building design that will achieve an indoor noise level equal to or less than 55 Ldn.*

2. Outdoor Lighting. *No new or expanded industrial, commercial or recreational use shall project lighting directly onto an existing runway or taxiway or into existing airport approach surfaces except where necessary for safe and convenient air travel. Lighting for these uses shall incorporate shielding in their designs to reflect light away from airport approach surfaces. No use shall imitate airport lighting or impede the ability of pilots to distinguish between airport lighting and other lighting.*

3. Glare. *No glare producing material, including but not limited to unpainted metal or reflective glass, shall be used on the exterior of structures located within an approach surface or on nearby lands where glare could impede a pilot's vision.*

4. Industrial Emissions. *No new industrial, mining or similar use, or expansion of an existing industrial, mining or similar use, shall, as part of its regular operations, cause emissions of smoke, dust or steam that could obscure visibility within airport approach surfaces, except upon demonstration, supported by substantial evidence, that mitigation measures imposed as approval conditions will reduce the potential for safety risk or incompatibility with airport operations to an insignificant level. The review authority shall impose such conditions as necessary to ensure that the use does not obscure visibility.*

*** * * * ***

The applicant addresses the potential for "thermal plumes" to interfere with airport operations via a Thermal Plume Study authored by TRC Environmental Corp, July 2013. Applicant's Exhibit 27. The Thermal Plume Study notes that the FAA has identified thermal

plumes as a potential flight hazard, and that pilots should avoid flight in the vicinity of these plumes. *Id.* at 1-3. The study concludes that 'the airspace directly above the South Dunes Station there exists a possibility of exceeding the [Australian Civil Aviation Safety Authority's] thresholds such that pilots should avoid flight in the vicinity of those plumes.' *Id.* at 1-10.

John Clarke submitted a letter on January 20, 2016 in which he discusses the "Thermal Plume Study" prepared by TRC Environmental Corp, July 2013. Exhibit 80. Mr. Clarke does not relate this testimony to a specific approval criterion, but does point out that "now local ordinances prohibit dust and steam." It seems likely that Mr. Clarke is intending to relate his testimony to CCZLDO 4.11.445(4). The Board does not interpret this provision creating an absolute prohibition on dust and steam.

Mr. Clarke makes four points in his letter. First, he notes that the location of the two thermal oxidizer stacks is not shown on site plan maps. For purposes of the thermal plume study, the location of the oxidizer stacks is not critical, because the "total volumetric flow rate from the two thermal oxidizers is 4% of the total flow rate from the five combustion turbines." Exhibit 27, at p. 1-4.

The last three points are simply a recognition of points made in the study, but do not contain any argument. For example, Mr. Clarke points out that the heights of the stacks is 165 ASL, so $6.25 \times D = 62.5$ feet, for a total height of 227.5 of plume influence. He points out that the "plume radius would be 200 ft from the stack center line." Lastly, he points out the conclusion of the study, which is set forth above. To the extent that Mr. Clarke is attempting to make a legal argument, it is not readily apparent what that argument is. Mr. Clarke's letter provides no basis for denial – the legal standard is about obscuring visibility, but the study is about thermal plumes which would potentially affect the stability of aircraft that pass over them.

The applicant addresses any general concern over thermal plumes via a letter from Earl Himes, Jr, P.E., Black & Veatch, dated January 11, 2016. See Applicant's Exhibit 33. Mr. Himes goes into detail on the issue and concludes that "it is my professional opinion that the Jordan Cove Project, if operated and constructed consistent with measures detailed in this letter, will not adversely affect airport approach surfaces." Mr. Himes' expert testimony constitutes substantial evidence and is more credible than any evidence to the contrary. The Board conditions the approval on the applicant complying with the mitigation measures suggested in the Himes letter.

Uses and activities in Exclusive Farm Use (EFU) Zone

Exclusive Farm Use

Purpose and Intent: The purpose of the EFU district is to preserve the integrity and encourage the conservation of agricultural lands within Coos County and thereby comply with the provisions of ORS 215 and OAR 660, Division 33 to minimize conflicts between agricultural practices and non-farm uses by limiting any development to uses distinguished as dependent upon or accessory to supporting agricultural or forestry production and which qualify such farm lands for special tax relief pursuant to the provisions of Oregon Revised Statutes. This zone is also for the cultivation and marketing of specialty crops, horticultural crops and other intensive farm uses.

Section 4.6.200 Development and Use Permitted:

The following uses and their accessory uses are permitted outright in the Exclusive Farm Use zone and the Forest/Mixed Use overlays subject to applicable siting and development standards set forth in Sections 4.6.240.

1. Non-residential Uses

g. Drainage, tide-gating, fill, mitigation, non-structural shoreland stabilization, dredge material disposal and restoration.

Section 4.6.240 Development and Use Standards:

Development Standards All dwellings and structures approved shall be sited in accordance with this section.

Board's Findings: The applicant proposes restoration and mitigation, which are permitted uses in the EFU zone. The development standards only apply to dwelling and structures. This property does have special development considerations and overlays that do apply and are required to be addressed. This is a permitted use that is reviewable through a compliance determination. The compliance determination allows staff to review the proposal to ensure applicable development criteria will be met. This review will also determine if the property is currently in compliance which it is. The special development consideration and overlays are addressed below. The review of the special development consideration and overlays is listed below with a finding of applicability.

1. Mineral & Aggregate Plan Implementation Strategies

The mineral & aggregate maps have inventoried the following:

- Coal Basins***
- Areas of Oil & Gas Exploration Leases***
- Metal Mines & Prospects (Removed Per Ordinance 91-09-018PL 12-18-91)***
- Crushed Rock Quarries***

- Sand & Gravel Pits
- Other Aggregate Sites (Ordinance 92-05-008PL 3-7-92)

Purpose Statement:

Coos County shall manage its identified mineral and aggregate resources (except black sand prospects) in their original character until mined, except where conflicting uses are identified during implementation of the Plan, and such uses are justified based on consideration of the economic, social, environmental and energy consequences of the conflicting uses, or where existing uses have been grandfathered. Where no conflicts are identified, agriculture, forest or similar open space zoning shall be used to implement this strategy.

Board's Findings: The applicant is correct that pursuant to the Coos County Comprehensive Plan ("Plan") Volume 1, Part 1, Section 5.5 and CCZLDO Strategy 1.c.ii, the coal basin is described as commercially unviable and, accordingly, not designated as a Goal 5 resource. Furthermore, the Plan and the CCZLDO state that permitted uses shall not be considered conflicting with coal resources within a given zone. Therefore, there is no criteria to address for the requested activities.

2. Water Resources

Board's Findings: This proposed site is not near a mapped water resource area. Therefore, this criteria does not apply to this project.

3. Historical, Cultural, and Archaeological Resources Natural Areas and Wilderness

The Historical/Archeological maps have inventoried the following:

- Historical;
- Area of Archaeological Concern;
- Botanical; and
- Geological Resources.

Purpose Statement:

Coos County shall manage its historical, cultural and archaeological areas, sites, structures and objects so as to preserve their original resource value. This strategy recognizes that preservation of significant historical, cultural and archaeological resources is necessary to sustain the County's cultural heritage.

b. Areas of Archaeological Concern: Coos County shall continue to refrain from widespread dissemination of site-specific inventory information concerning identified archaeological sites. Rather, Coos County shall manage development in these areas so as to preserve their value as archaeological resources.

i. This strategy shall be implemented by requiring development proposals to be accompanied by documentation that the proposed project would not adversely impact the historical and archaeological values of the project's site. "Sufficient documentation" shall be a letter from a qualified archaeologist/historian and/or a duly authorized representative of a local Indian tribe(s).

Board's Findings: Coos County has provided notice to both local Tribes as a request for comments. There are no county inventoried historical, archaeological, botanical or geological resources but this is in an area of interest to the local tribes. This is why notice was provided with a chance for comment. The Tribes did not identify any adverse impacts on the record in this location. Therefore, the Board finds that no further action is required to ensure compliance with this section for the EFU-zoned portion of the site.

4. Beach and Dunes (Policy 5.10)

The Beaches and Dunes map has inventoried the following:

- **Beaches and Dunes**
 - o **Suitable for most uses; few or no constraints (Does not require a review)**
 - o **Limited Suitability; special measures required for most development**
 - o **Not Suitable for Residential, commercial or Industrial Structures**

Purpose Statement:

Coos County shall base policy decisions for dunes on the boundaries for these areas as identified on the plan map titled "Development Potential within Ocean Shorelands and Dunes" and the boundaries delineates following specific areas "Suitable", "Limited Suitability" and "Not Suitable" areas of development potential.

Board's Finding: There are no inventoried beach and dune areas on this property.

5. Non-Estuarine Shoreland Boundary

The Coastal Shoreland Boundary map has inventoried the following:

- **Coastal Shoreland Boundary**
- **Beach Erosion**
- **Coastal Recreation Areas**
- **Area of Water-Dependent Uses**
- **Riparian Vegetation**
- **Fore Dunes**
- **Head of Tide**
- **Steep Bluffs over 50% Slope**
- **Significant wetland wildlife habitats**
- **Wetlands under agricultural use**

- Areas of Exceptional Scenic Quality and Coastal Headlands
- Headland Erosion

Purpose Statement:

Protection of major marshes (wetlands), habitats, headlands, aesthetics, historical and archaeological sites: Coos County shall provide special protection to major marshes, significant wildlife habitat, coastal headlands, exceptional aesthetic resources, and historic and archaeological sites located within the Coastal Shorelands Boundary of the ocean, coastal lakes and minor estuaries. This strategy shall be implemented through plan designations and ordinance measures that limit uses in these special areas to those uses that are consistent with protection of natural values, such as propagation and selective harvesting of forest products, grazing, harvesting wild crops, and low intensity water-dependent recreation. This strategy recognizes that special protective consideration must be given to key resources in coastal shorelands over and above the protection afforded such resources elsewhere in this plan.

Board's Findings: There is no mapped Coastal Shoreland Boundary that applies to the Exclusive Farm Use portion of the property. Therefore, this criterion does not apply.

6. Significant Wildlife Habitat (Balance of County Policy 5.6)

Board's Finding: The proposed Project and request for approval does not propose any uses or activities in sensitive big-game, bird habitat or salmonid spawning or rearing areas.

7. Natural Hazards (Balance of County Policy 5.11)

The Natural Hazards map has inventoried the following:

- Wind Erosion/Deposition
- Earth flow & Slump Topography
- Critical Stream Bank Erosion
- Flash Flooding
- Rock fall & Debris and Flow Terrain

Purpose Statements:

Coos County shall regulate development in known areas potentially subject to natural disasters and hazards, so as to minimize possible risks to life and property. Coos County considers natural disasters and hazards to include stream and ocean flooding, wind hazards, wind erosion and deposition, ³⁰critical stream bank erosion, mass movement (earthflow and slump topography), earthquakes and weak foundation soils.

³⁰ These hazards are addressed under policies for "Dunes and Ocean and Lake Shorelands."

Board's Findings: This area is not is a mapped hazard area. This policy states in regards to earthquake and weak foundation soils that Coos County shall (1) support the State Building Ordinance Division's building ordinance enforcement program so as to provide maximum structural protection necessary to safeguard against seismic hazards (earthquakes); and (2) require that high occupancy and critical use facilities (such as schools and hospitals) to be located in the areas of stable ground conditions. Therefore, this criterion does not apply to this request.

SECTION 4.11.217 Development Within Special Flood Hazard Areas

Section 4.11.217 Procedural Requirements for Development Within Special Food Hazard Areas:
The following procedure and application requirements shall pertain to the following types of development:

Board's Finding: This property is being restored for natural uses, which do not pose a risk if flooding were to occur. The floodplain overlay is indicated by the layer "FEMA DFIRMs" and shows as a light blue outline with blue dots. The Project is proposing mitigation and restoration with no measurable impacts. There are no structures proposed on this property.

Uses and activities in Forest/Mixed Use (FMU) Zone

Forest (F)

Purpose and Intent: *The purpose of the Forest zone is to conserve and protect forest land for forest uses. Some of the areas covered by the "F" zone are exclusive forest lands, while other areas include a combination of mixed farm and forest uses.*

Forest Mixed Use (FMU)

Mixed Farm-Forest Areas ("MU" areas) include land which is currently or potentially in farm-forest use. Typically such lands are those with soil, aspect, topographic features and present ground cover that are best suited to a combination of forest and grazing uses. The areas generally occupy land on the periphery of large corporate and agency holdings and tend to form a buffer between more remote uplands and populated valleys. In addition, these "mixed use" areas contain ownership of smaller size than in prime forest areas. Some are generally marginal in terms of forest productivity, such as areas close to the ocean.

If land is in a zone that allows both farm and forest uses, a dwelling may be sited based on the predominate use of the tract on January 1, 1993.

If a use is only allowed in the mixed use zone it will be explained in the text. Otherwise the uses listed are allowed in both the Forest and Forest Mixed Use zones.

Section 4.6.100 Development and Use Permitted:

The following uses and their accessory uses are permitted subject to applicable development standards for Forest and Forest Mixed Use zone.

1. Non Residential Uses:

e. Fish and wildlife habitat management.

Board's Findings: The proposed use in the Forest zone is fish and wildlife habitat management at the North Bank Site, also known as Parcel S. The North Bank site is located approximately 20 miles south of the Project, northeast of Bandon, Oregon in Coos County. Approximately 71.2 acres of Forest zoned habitat will be used for fish and wildlife habitat management. The use qualifies as wildlife habitat management because the proposed passive preservation of existing industrial forest land and active vegetation management of the forest will achieve a more natural and diverse mature forest condition. These activities are fish and wildlife habitat management.

Pursuant to Section 4.6.100.e, fish and wildlife habitat management is a permitted use. Because the use is a permitted use the Planning Director can find and issue a compliance determination that this use is permitted in the Forest zone.

The use requested is permitted in the primary zoning district. The development standards only apply to dwelling and structures. This property does have special development considerations and overlays that do apply and are required to be addressed. This is a permitted use that is reviewable through a compliance determination. The compliance determination allows a ministerial review of the proposal to ensure applicable development criteria will be met. This review will also determine if the property is currently in compliance which it is. The Balance of County Plan Maps has been reviewed to determine if any special development consideration and overlays apply. The review of the special development consideration and overlays is listed below with a finding of applicability.

Mineral & Aggregate Plan Implementation Strategies

The mineral & aggregate maps have inventoried the following:

- Coal Basins
- Areas of Oil & Gas Exploration Leases
- Metal Mines & Prospects (Removed Per Ordinance 91-09-018PL 12-18-91)
- Crushed Rock Quarries
- Sand & Gravel Pits
- Other Aggregate Sites (Ordinance 92-05-008PL 3-7-92)

Purpose Statement:

Coos County shall manage its identified mineral and aggregate resources (except black sand prospects) in their original character until mined, except where conflicting uses are identified during implementation of the Plan, and such uses are justified based on consideration of the economic, social, environmental and energy consequences of the conflicting uses, or where existing uses have been grandfathered. Where no conflicts are identified, agriculture, forest or similar open space zoning shall be used to implement this strategy.

Board's Findings: The property is not identified as being located in the inventoried having minerals or aggregate on the property. Therefore, there is no criterion to address for the requested activities.

As depicted on the Coos County Mineral, Aggregate, and Energy Resources inventory map, the only identified mineral or aggregate resources within the Industrial, EFU, or Forest zoned areas included in this application is a coal basin located in the Industrial zone. The applicant states that "[u]nder the provisions of the Coos County Comprehensive Plan ("Plan") Volume 1, Part 1, Section 5.5 and CCZLDO Strategy 1.c.ii, the coal basin is described as commercially unviable and, accordingly, not designated as a Goal 5 resource. The applicant appears to be correct that the coal basin is described as commercially unviable and, accordingly, not designated as a Goal 5 resource.

Furthermore, the Plan and the CCZLDO state that permitted uses shall not be considered conflicting with coal resources within a given zone. Because the only designated resource is

commercially unviable and the Plan and CCZLDO direct that permitted uses are not conflicting and non-exploratory mining operations are not being proposed, the request for approval is consistent with the mineral and aggregate plan implementation strategies.

2. *Water Resources*

Board's Findings: This proposed site is not near a mapped water resource area. Therefore, this criteria does not apply to this project.

3. *Historical, Cultural, and Archaeological Resources Natural Areas and Wilderness*

The Historical/Archeological maps have inventoried the following:

- *Historical;*
- *Area of Archaeological Concern;*
- *Botanical; and*
- *Geological Resources.*

Purpose Statement:

Coos County shall manage its historical, cultural and archaeological areas, sites, structures and objects so as to preserve their original resource value. This strategy recognizes that preservation of significant historical, cultural and archaeological resources is necessary to sustain the County's cultural heritage.

ii. Properties which have been determined to have an "archaeological site" location must comply with the following steps prior to issuance of a "Zoning compliance Letter" for building and/or septic permits.

1) The County Planning Department shall make initial contact with the Tribe(s) for determination of an archaeological site(s). The following information shall be provided by the property owner/agent:

- a) Plot plan showing exact location of excavation, clearing, and development, and where the access to the property is located;*
- b) Township, range, section and tax lot(s) numbers; and*
- c) Specific directions to the property.*

2) The Planning Department will forward the above information including a request for response to the appropriate tribe(s).

3) The Tribe(s) will review the proposal and respond in writing within 30 days to the Planning Department with a copy to the property owner/agent.

4) It is the responsibility of the property owner/agent to contact the Planning Department in order to proceed in obtaining a "Zoning Compliance Letter"

(ZCL) or to obtain further instruction on other issues pertaining to their request.

Board's Findings: Coos County has provided notice to both local Tribes as a request for comments, as required by this provision. The Tribes have not identified, on the record, any areas of archaeological concern on the Forest-zoned portion of the subject property. Accordingly, the Board finds that there is no substantial evidence in the whole record to support imposing "appropriate measures" on the proposed Forest zone development.

4. Beach and Dunes (Policy 5.10)

The Beaches and Dunes map has inventoried the following:

- **Beaches and Dunes**
 - **Suitable for most uses; few or no constraints (Does not require a review)**
 - **Limited Suitability; special measures required for most development**
 - **Not Suitable for Residential, commercial or Industrial Structures**

Purpose Statement:

Coos County shall base policy decisions for dunes on the boundaries for these areas as identified on the plan map titled "Development Potential within Ocean Shorelands and Dunes" and the boundaries delineates following specific areas "Suitable", "Limited Suitability" and "Not Suitable" areas of development potential.

(Criteria Omitted)

Board's Finding: This property is not in an inventoried "Beach and Dunes" area. Therefore, this criterion does not apply.

5. Non-Estuarine Shoreland Boundary

The Coastal Shoreland Boundary map has inventoried the following:

- **Coastal Shoreland Boundary**
- **Beach Erosion**
- **Coastal Recreation Areas**
- **Area of Water-Dependent Uses**
- **Riparian Vegetation**
- **Fore Dunes**
- **Head of Tide**
- **Steep Bluffs over 50% Slope**
- **Significant wetland wildlife habitats**
- **Wetlands under agricultural use**
- **Areas of Exceptional Scenic Quality and Coastal Headlands**

- **Headland Erosion**

Purpose Statement:

Protection of major marshes (wetlands), habitats, headlands, aesthetics, historical and archaeological sites: Coos County shall provide special protection to major marshes, significant wildlife habitat, coastal headlands, exceptional aesthetic resources, and historic and archaeological sites located within the Coastal Shorelands Boundary of the ocean, coastal lakes and minor estuaries. This strategy shall be implemented through plan designations and ordinance measures that limit uses in these special areas to those uses that are consistent with protection of natural values, such as propagation and selective harvesting of forest products, grazing, harvesting wild crops, and low intensity water-dependent recreation. This strategy recognizes that special protective consideration must be given to key resources in coastal shorelands over and above the protection afforded such resources elsewhere in this plan.

Board's Findings: There is no mapped Coastal Shoreland Boundary that applies to the Forest Mixed Use portion of the property. Therefore, this criterion does not apply.

6. Significant Wildlife Habitat (Balance of County Policy 5.6)

Board's Findings: The proposed Project and request for approval does not propose any uses or activities in sensitive big-game, bird habitat or salmonid spawning or rearing areas.

7. Natural Hazards (Balance of County Policy 5.11)

The Natural Hazards map has inventoried the following:

- **Wind Erosion/Deposition**
- **Earth flow & Slump Topography**
- **Critical Stream Bank Erosion**
- **Flash Flooding**
- **Rock fall & Debris and Flow Terrain**

Purpose Statements:

Coos County shall regulate development in known areas potentially subject to natural disasters and hazards, so as to minimize possible risks to life and property. Coos County considers natural disasters and hazards to include stream and ocean flooding, wind hazards, wind erosion and deposition,³¹ critical stream bank erosion, mass movement (earthflow and slump topography), earthquakes and weak foundation soils.

Board's Findings: This area is not is a mapped hazard area. This policy states in regards to earthquake and weak foundation soils that Coos County shall (1) support the State Building

³¹ These hazards are addressed under policies for "Dunes and Ocean and Lake Shorelands."

Ordinance Division's building Ordinance enforcement program so as to provide maximum structural protection necessary to safeguard against seismic hazards (earthquakes); and (2) require that high occupancy and critical use facilities (such as schools and hospitals) to be located in the areas of stable ground conditions. Therefore, this criterion does not apply to this request.

§4.11.217 Development within Special Flood Hazard Areas

Section 4.11.217 Procedural Requirements for Development Within Special Flood Hazard Areas:
The following procedure and application requirements shall pertain to the following types of development:

Board's Finding: The proposal does not include an area located in the floodplain. Therefore, this section does not apply.

Chapter VII – Streets and Roads

This section covers the access and parking requirements that apply to the application.

SECTION 7.1.250 materials Required for an application:

A traffic plan (item 1) will be required for all rezones, recreational vehicle parks, campgrounds, mobile home parks, land divisions, industrial developments, commercial developments and high intensity development plans. The Roadmaster in consultation with the Planning Director will have discretion to waive items 2 through 4 based on the findings that the increase in development is diminimus to the existing development.

1. **Traffic Plan - A parking/traffic plan shall be submitted to address all of the following:**
 - a. Property boundaries;
 - b. Location of all structures on the subject property;
 - c. Required parking spaces;
 - d. Current utilities and proposed utilities;
 - e. Roadmaster may require drawings and specs from the Oregon Standards Specification Manual (OSSC) (current edition);
 - f. The location and design of bicycle and pedestrian facilities shall be indicated on the site plan if applicable;
 - g. Pedestrian access and circulation will be required if applicable. Internal pedestrian circulation shall be provided in new commercial, office, and multi-family residential developments through the clustering of buildings, construction of walkways, landscaping, accessways, or similar techniques;
 - h. All plans (industrial and commercial) shall clearly show how the internal pedestrian and bicycle facilities of the site connect with external existing or planned facilities or systems;
 - i. Location of existing and proposed access point(s) on both sides of the road where applicable;
 - j. Distances to neighboring constructed access points, median openings (where applicable), traffic signals (where applicable), intersections, and other transportation features on both sides of the property;
 - k. Number and direction of lanes to be constructed on the road plus striping plans;
 - l. All planned transportation features (such as sidewalks, bikeways, auxillary lanes, signals, etc.); and
 - m. Parking and internal circulation plans including walkways and bikeways, in UGB's and UUC's.
2. **Traffic Study completed by a registered traffic engineer.**
3. **Access Analysis completed by a registered traffic engineer**
4. **Sight Distance Certification from a registered traffic engineer.**

Board's Findings: The applicant has included a traffic plan (Figures 1-9*), a traffic study (Exhibit 15*), a parking plan assessment (Exhibit 18*). The applicant stated that the traffic study includes an access analysis and sight distance certification. The Coos County Roadmaster (hereinafter "Roadmaster") has reviewed the parking plans and the applicant has provided the letter within its application. Applicant's Exhibit 8. The Board finds that the application includes the materials required by this provision.

SECTION 7.1.300 Circumstances Requiring Road Improvements:
Extent of Required Road Improvements:

Public and private road and street improvements may be required by this ordinance when new development is proposed. The road standards are found in Article 7.2. The County Roadmaster has the authority to require road improvements to meet the road standards and requirements of local fire and ambulance districts.

If and when public or private road improvements are required, then such improvements will be required to extend to the nearest intersection of an open road.

If the proposed action may affect a state transportation facility, notice shall be given to the Oregon Department of Transportation (ODOT). ODOT conditions of approval shall be incorporated into the permit conditions of approval, and ODOT shall be notified if the conditions of approval are changed.

Roads and Streets within an Urban Growth Boundary (UGB) or Urban Unincorporated Community (UUC) shall comply with the standards in Section 7.2, Table 7.2B at the minimum. When the development is proposed in a city's UGB that city shall be consulted with as they may have higher requirements.

Board's Findings: The County Roadmaster has reviewed the proposed public and private road improvements and made a determination regarding the adequacy of applicant's proposed improvements. Applicant's Exhibit 8. Coos County staff notified Oregon Department of Transportation ("ODOT") of the application. See Staff Report at 90. ODOT Region 3 Access Management Engineer H. Ronald Hughes, PE, submitted a letter into the record that agreed in principle with the assumptions and conclusions of the TIA Update dated November 2015, subject to implementation of identified mitigation measures and the additional requirement to conduct manual flagging of Trans Pacific Parkway during oversize truck deliveries. The Board finds that, subject to conditions requiring compliance with the TIA Update and ODOT's requested mitigation, the application is consistent with this provision.

SECTION 7.1.375 PROVISIONS for improvements to existing transportation facilities:

* Can be found in the applicant's submittal.

If there is an increase in development the County Roadmaster in consultation with the Planning Director, will review existing transportation data to determine whether the proposed development will have impacts on the transportation system. It is the responsibility of the applicant to provide enough detailed information for the County to make a determination. If the County cannot properly evaluate a proposed development's impacts without a more detailed study, a transportation impact study (TIS) will be required to evaluate the adequacy of the transportation system to serve the proposed development and determine proportionate mitigation of impacts. If a TIS is required, the County will provide the applicant with a checklist to be used when preparing the TIS.

1. If the County finds that the development proposal impacts the transportation facilities, then the County may deny, approve, or approve with appropriate conditions development proposals in order to minimize impacts and protect transportation facilities in the following circumstances:
 - a. Where the existing transportation system will be impacted by the proposed development, dedication of land for streets, transit facilities, sidewalks, bikeways, paths, or accessways may be required to ensure that the transportation system is adequate to handle the additional burden caused by the proposed use;
 - b. Where the existing transportation system is shown to be burdened by the proposed use, improvements such as paving, curbing, installation or contribution to traffic signals, traffic channelization, construction of sidewalks, bikeways, accessways, paths, or streets that serve the proposed use may be required; or
 - c. The County may require the development to grant a cross-over access easement(s) to adjacent parcel(s) to address access spacing standards on arterials and collector roadways or site-specific safety concerns. Construction of shared access may be required at the time of development if feasible, given existing adjacent land use. The access easement must be established by deed.
2. Rough Proportionality Determination. Improvements to mitigate impacts identified in the TIS shall be provided in rough proportion to the transportation impacts of the proposed development.
 - a. Net new trips - The estimated number of new trips that will be created by the proposed development within the study area.
 - b. Planning period trips - The estimated number of total trips within the study area within the planning period identified in the TSP.
 - c. Existing trips - The estimated number of existing trips within the study area at the time of TIS preparation.
 - d. Estimated construction cost - The estimated total cost of construction of identified improvements in the TSP.
 - e. The TIS shall include information regarding how the proportional share of improvements was calculated, using the ratio of development trips to growth trips and the anticipated cost of the full Coos County Transportation System Plan. The calculation is provided below:

$$\text{Proportionate Share Contribution} = [\text{Net New Trips} / (\text{Planning Period Trips} - \text{Existing Trips})] \times \text{Estimated Construction Cost}$$

Board's Findings: The applicant requests that the Roadmaster and Planning Director review the existing transportation data the applicant has included determining impacts on the transportation system. The applicant has included detailed information, including a TIA Update dated November 2015 in its application. Staff has been working with the Roadmaster on this project. The Board believes it is feasible for the applicant to arrive at technical solutions and mitigation to any problem identified by the Roadmaster. The Board further finds that the application satisfies this section, subject to imposing conditions requiring completion of the mitigation measures identified in the TIA Update dated November 2015, identified by ODOT in its letter dated December 15, 2015, and identified by the Roadmaster in his letters dated January 11, 2016 and February 26, 2016.

SECTION 7.1.425 Access Connection and Driveway Design:

Requirements in this section shall apply to new driveway and access connections intersections with a County Road. When access is needed to a lot or parcel, if the legal status of a lot or parcel has not been determined, the spacing standards in this section shall apply to all contiguous land in an ownership. Any access connection and driveways that involves access to the State Transportation System shall be reviewed by the Oregon Department of Transportation for conformance with state access management standards and other applicable state standards, before the application is accepted by the County. All access measures ODOT deems necessary shall be made a condition of approval.

1. Shared access connections will be provided for adjacent properties whenever possible.
2. Driveway access will be established to minor collector or local roadways where possible rather than to arterials or major collectors.
3. Driveway approaches must be designed and located to provide an existing vehicle with an unobstructed view. Construction of driveways along acceleration or deceleration lanes and tapers shall be avoided due to the potential for vehicular weaving conflicts.
4. Driveway and access connections on County Roads shall be located where they do not create undue interference or hazard to the free movement of highway and pedestrian traffic. Locations on sharp curves, steep grades, areas of restricted sight distance or at points that interfere with the placement and proper functioning of signs, lighting, guardrail, or other traffic control devices shall not be permitted.
5. Tables 7.2A and 7.2B shall be used in determining spacing between approaches onto County Roads.
6. The application and use of traffic signals shall be guided by the principles, methods and warrants outlined in the Uniform Traffic Control Devices Manual.
Sight distance standards shall follow the standards set forth in the AASHTO Geometric Design for Streets and Highways.

All new development is required to have a driveway confirmation completed. Driveways for the purpose of serving a single family residence shall comply with figure 7.1.425. An application must

be completed prior to obtaining a zoning compliance letter from the Coos County Planning Department.

In the event that a driveway cannot be constructed prior to applying for development permits, a bond may be issued using the requirements of Article 7.6.100(2).

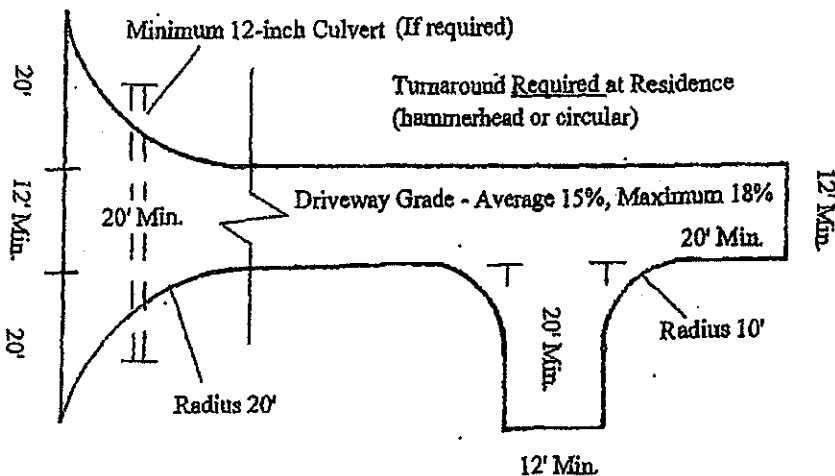
DRIVEWAY STANDARDS DRAWING – SINGLE RESIDENCE

Sight Distance Requirements (at the approach entrance)

- Speed less than 35 mph – 100' both directions
- Speed greater than 35mph – 150' both directions

All Weather Surface – minimum 4 – inches aggregate base or as required by Roadmaster.

Figure 7.1.425



Construct appropriate ditches to prevent water runoff from discharging from the land onto a public road under county jurisdiction. Pursuant to ORS 368.256 the creation of a road hazard prohibited.

If driveway is over 1,000 ft., a pullout is required every 600 ft.

If a driveway cannot meet the maximum 18% grade then a legal agreement may be signed and recorded at the County Clerk's office releasing the County from any liability from such driveway development. This document must be referenced on the property deed to allow future purchasers know that the driveway does meet standard. A sign shall be placed at the bottom of the driveway to warn any users of the driveway that it is not built to standard. Proof must be filed with the Planning and Road Department that the documents have been filed and a sign has been placed. The form

located on the following page must be completed, signed and recorded prior to any land use authorizations.

Board's Findings: This application includes a request for a driveway confirmation. A driveway application form is attached as "Application 3." Access connections and driveway designs are included in Figures 1 - 9. The County Roadmaster has reviewed and approved the Project's proposed points of access to TransPacific Parkway. Further, this application includes a request for use approval in the CBEMP 8-WD zoning district for the modifications to the Jordan Cove Road outside of existing right-of-way at the intersection of TransPacific Parkway. These improvements will facilitate the eastern access to the site. No party questions the feasibility of this aspect of the project. The Board finds that the application satisfies the requirements of this provision.

SECTION 7.5.100 General Provisions:

Off-street parking and loading facilities as defined shall be subject to the general regulations and requirements of this Ordinance as well as the following provisions:

- 1. Increase:** An increase in parking spaces may be required to correspond to any enlargement or addition to any building or use.
- 2. Change in Use:** When a building or open land use changes in use, the parking requirements shall be changed to reflect the requirements of the new building or use if a greater number of spaces are required.
- 3. Use:** Parking facilities shall be used for automotive and bicycle parking only. No sales, dead storage, repair work, dismantling, or servicing of any kind shall be permitted.
- 4. Fractional Requirements:** Fractional requirements shall require one additional space.
- 5. Staff Determination:** Parking space requirements for a use not specifically mentioned shall be the same as for a use which has similar traffic-generating characteristics as determined by the Planning Director.

Board's Findings: The applicant has requested that staff determine that the Project, except for the SORSC, are most similar with the traffic-generating characteristics of the "storage warehouse, manufacturing establishment, or trucking freight terminal" use described in CCZLDO Section 7.5.175. The applicant has requested that staff determine that there are no uses similar to the SORSC described in CCZLDO Section 7.5.175 and that the County Roadmaster will need to establish the required parking for the SORSC based upon its anticipated use as a fire station and related training facility, which is different from a traditional volunteer fire station. The Roadmaster has reviewed this request and made determinations regarding the parking standard as a 'storage warehouse' and made findings for parking at the SORSC. The Roadmaster's findings are attached as applicant's Exhibit 8. This criterion is satisfied.

SECTION 7.5.150 Parking Area Design:

1. **Ingress and Egress:** *In any zoning district, driveways or access ways providing ingress and egress for private/public parking areas or garages and parking spaces shall be permitted, together with any appropriate traffic control devices in any required yard or setback area.*

Board's Findings: The applicant has included two figures with the application, labeled as Figures 2 and 6, wherein the applicant has indicated the areas of ingress and egress to the public and private parking areas. These figures include the appropriate traffic control devices in the form of stripping and signage.

2. **Minimum Standards for Parking:** *All public or private parking areas and parking spaces shall be designed and laid out to conform to the minimum standards as specified in the Parking Table and Diagram. All parking lot designs shall be reviewed and approved by the County Roadmaster.*

Board's Findings: CCZLDO Section 7.5.175 sets forth the required number of parking spaces for the proposed use. For industrial use, one (1) parking space per employee and one (1) bicycle parking space is required for storage warehouse, manufacturing establishments or trucking freight terminals, the use category that is most similar to the proposed use. JCEP anticipates employing approximately 90 employees at the Project (not including the SDPP and SORSC). Thus, the minimum parking required for the non-excluded Project components is 90 spaces. As set forth in the illustrations and calculations in Figure 3 and Figure 4, JCEP is proposing more than 90 vehicle parking spaces on the site.

The SDPP is not part of this land use request. Thus, the County is not required to make findings regarding parking for this component for the Project. The SORSC requires 112 vehicle parking spaces based upon the calculations set forth in Note 3 on Figure 3 and Figure 4. See also Letter from Frank Whipple, Amergent Techs dated November 14, 2014. Applicant's Exhibit 18 (discussing parking for SORSC site). Thus, JCEP is required to provide 202 vehicle parking spaces on the site. As set forth in the illustrations and calculations in Figure 3 and Figure 4, JCEP is proposing more than 202 vehicle parking spaces on the site. In fact, the applicant is proposing approximately 540 parking spaces.

Figure 3 and Figure 4 also demonstrate that JCEP has provided bicycle parking spaces in excess of the County's minimum standards. The Roadmaster has reviewed and approved the parking lot designs. See Exhibit 8. This criterion is satisfied.

The applicant has met the minimum standards for parking.

3. **Service Drive:** *Groups of three or more parking spaces, except those in conjunction with single-family or two-family dwelling structures on a single lot, shall be served by a service drive so that no backward movement, or other maneuvering of a vehicle within a public right-of-way, other than an alley, will be required. Service drives shall be designed and constructed to facilitate the flow of traffic, provide maximum safety for ingress and egress and maximum safety of pedestrians.*

Board's Findings: Figures 3 and 4, included in the submitted application, indicates each parking lot will be provided with a service drive to allow ingress and egress for vehicles and pedestrian walkways to authorized access locations. The applicant states that the use of these service drives will not require backward movement, or other maneuvering of a vehicle within the public right-of-way. The parking that will be provided without service drives is internal to the site and not subject to this criterion.

- 4. Lighting:** *Any lights provided to illuminate any public or private parking area shall be so arranged as to reflect the light away from any abutting or adjacent residential district or use.*

Board's Findings: The applicant states that the LNG Facility Project does not abut and is not adjacent to a residential district or use. The Board concurs with this finding.

- 5. Landscaping:** *For every 10 required parking spaces, 16 square feet of landscaping will be required. Each 16 square foot area should include one tree and three one gallon shrubs or living ground cover.*

Board's Findings: The applicant has shown that is feasible to meet the landscaping requirements. See Application Narrative at p. 75 and Applicant's Figure 5.

- 6. Sign standards:** *All signs must comply with the current manual on uniform traffic control devices.*

Board's Findings: The applicant supplied a design with the specifications of the signs it will use, and agrees to comply with the current manual on uniform traffic control devices. See Application Narrative at p. 75 and Applicant's Figure 6. The applicant meets the applicable access, driveway, parking and road standards.

Application Extensions

The applicant has requested four (4) application extensions:

- Upland LNG Terminal (ACU-13-22);
- Port Slip and Access Waterway (ACU-13-23);
- Fill in 6-WD (ACU-12-12); and Fill in IND; and
- 7-D (ACU-12-16/ACU-12-17/ACU-12-18).

None of these extensions are in a resource zone. The criteria for an extension are set forth below.

SECTION 5.2.600 EXPIRATION AND EXTENSION OF CONDITIONAL USES

Any conditional use not initiated within the time frame set forth in subsection (3) of this section may be granted an extension provided that an applicant has made a request and provided the

appropriate fee for an extension prior to the expiration of the conditional use permit approval. Such request shall be considered an Administrative Action and shall be submitted to the Director.

2. Extensions on all non-resource zoned property shall be governed by the following.

- a. The Director shall grant an extension of up to two (2) years so long as the use is still listed as a conditional use under current zoning regulations.
- b. If use or development under the permit has not begun within two (2) years of the date of approval and an extension has not been requested prior to the expiration of the conditional use then that conditional use is deemed to be invalid and a new application is required.
- c. If an extension is granted, the conditional use will remain valid for the additional two years from the date of the original expiration.

Hearing's Officer Finding: All extension requests were received prior to the expiration date, the uses have not changed and the development under the permit has not begun within two years of the date of approval.

Project Impacts.

Traffic Impacts.

The Project will not have adverse traffic impacts. As support for this conclusion, the Board relies upon evidence from three sources.

First, the Board relies upon the expert testimony and work product of applicant's transportation engineer, Josh Anderson of DEA. Mr. Anderson prepared a Transportation Impact Analysis Update dated November 2015 ("TIA Update"), which analyzed the transportation impacts of the Project during peak construction activities at eight different study intersections. See TIA Update in Applicant's Exhibit 32. The TIA Update is based upon current Project plans and updated traffic counts. In the TIA Update, Mr. Anderson concluded that, subject to implementing the following mitigation measures, traffic operations at the study intersections would be consistent with applicable performance standards (including the modified volume-to-capacity targets identified in the Oregon Department of Transportation ("ODOT") letter dated December 15, 2015) and CCZLDO 7.1.375:

- Construction of a dedicated eastbound left-turn lane at US 101/Trans Pacific Parkway (about 600 feet long)
- Construction of a dedicated southbound left-turn lane at US 101/East Bay Drive (about 150 feet long)
- Construction of a dedicated southbound left-turn lane at US 101/Ferry Road (about 120 feet long) and temporary signalization of this intersection
- Two staggered work shifts with both start and end times that distribute the commute trips throughout a 90 minute arrival and departure period
- Transportation Demand Management Measures (bussing of the majority of the workforce)

Second, the Board relies upon testimony from County Roadmaster John Rowe, who concluded that the Project's proposed access points and transportation mitigation measures would be consistent with the CCZLDO, subject to a condition requiring additional evidence regarding projected impacts to road structure:

- "(1) Subject to implementation of the recommended measures identified in the TIS, the applicant will mitigate the project's impacts to transportation system operations as required by CCZLDO 7.1.375.
- "(2) Access points between the project site and TransPacific Parkway have been sited to allow for unobstructed sight distance lines that will meet AASHTO standards, as required by CCZLDO 7.1.425.
- "(3) I recommend a condition of approval requiring applicant to submit an engineering and cost analysis of the project on the existing road structure within the study area. The analysis will be submitted as an addendum to the TIS at least 90 days prior to the commencement of construction."

See Roadmaster letter dated February³² 26, 2016.

Third, the Board relies upon the letter from ODOT Region 3 Access Management Engineer H. Ronald Hughes, PE, who agreed in principle with the assumptions and conclusions of the TIA Update, subject to implementation of identified mitigation measures and the additional requirement to conduct manual flagging of Trans Pacific Parkway during oversize truck deliveries. See Applicant's Exhibit 34. ODOT also determined that the TIA Update's use of different volume to capacity ratio target values for two intersections analyzed in the TIA Update would be acceptable. *Id.*

OSCC contends that the applicant has not addressed traffic impacts from park and ride lots. OSCC is mistaken. See TIA Update, p. 19 (explaining assumptions of trip impacts from park and ride lots).

Further, although Ms. McCaffree presented two memos from a transportation engineer into the record, these memos addressed an outdated traffic impact analysis for only a portion of the Project (workforce housing) in another jurisdiction (City of North Bend). Mr. Anderson responded to these memos and explained that many of the concerns expressed in these memos were invalidated by the TIA Update. See Josh Anderson memorandum dated January 25, 2016 in Applicant's Exhibit 78. Mr. Anderson's memorandum also rebuts the remaining contentions that were not invalidated by the TIA Update.

Additional testimony from the public regarding traffic impacts was generalized and speculative. As a result, this additional testimony did not undermine the expert testimony of Mr. Anderson, Mr. Rowe, and Mr. Hughes.

For these reasons, the Board finds that the Project complies with all applicable CCZLDO provisions regarding transportation impacts, subject to the following conditions: (1) requiring completion of the recommended mitigation measures identified by the TIA Update and ODOT; and (2) requiring compliance with the Roadmaster's requirement regarding road structure.

Wildlife Impacts.

a. Snowy Plover.

Various opponents argue that the application fails to adequately protect snowy plover habitat. See letter from Jared M. Margolis, staff attorney for the Center for Biological Diversity, dated January 13, 2016. Exhibit 70. The primary objection appears to be that the applicants have not included a Snowy Plover Mitigation Plan in the application. Mr. Margolis argues that a "mitigation plan is required to show that any activity in the shorelands district will not result in a net loss of snowy plover habitat." Exhibit 70, at p. 3. He further argues that the applicant's proposed activities on Parcel W have the potential to cause disturbance for snowy plover habitat.

³² The letter is dated "February 26, 2016." The listed month is in error and this letter should be dated January 26, 2016.

Specifically, he argues that "the issue of vehicle and machinery for vegetation management can result in a loss of habitat through disturbance." *Id.*

General Condition 5 of CBEMP Management Unit 3-WD requires the following:

"All permitted uses and activities must be consistent with a Snowy Plover mitigation plan; see Management Objective."

The Management Objective of CBEMP Management Unit 3-WD requires, in relevant part, that there be "no net loss" of Snowy Plover habitat:

"* * * Any area of disturbed snowy plover habitat shall be replaced elsewhere on the North Spit (see Districts #1CS and #2CS) such that: (1) sites created as habitat are made available before or concurrently with alteration of existing habitat; and (2) there is no net loss of habitat."

CCZLDO 3.2.240. A portion of applicant's restoration activities on Parcel W are located in CBEMP Management Unit 3-WD. The applicant's restoration activities are consistent with the General Condition and Management Objective because applicant is not proposing any activities in the 3-WD portion of Parcel W that will impact snowy plover habitat. As support for this conclusion, the Board relies upon the memorandum from Applicant's consultant, David Evans & Associates ("DEA"). See Applicant's Exhibit 72.

The DEA memorandum explains that the 3-WD-zoned portion of Parcel W is not located in an open sandy area and thus is not likely to be a location for snowy plover habitat. *Id.* at pages 4-5. Additionally, even the open sandy areas of Parcel W (outside of 3-WD) are not considered to be snowy plover habitat based upon the reports from the Oregon Biodiversity Information Center. *Id.* Moreover, applicant's activities in the area zoned 3-WD are limited to using an existing roadway for access to other parts of Parcel W and removal of invasive growth and are not likely to impact snowy plover habitat, even if it existed in the area. *Id.*

The Board further notes that the Project Biological Assessment prepared by FERC concluded the Project is not likely to adversely affect western snowy plover and its habitat. See Biological Assessment at p. 3-97. Applicant's Exhibit 36. This is due to the fact that the construction noise would not exceed ambient levels and because the Applicant is engaging in best management practices, education and outreach, and providing funding for management programs and a new Wildlife Services position. See Applicant's Exhibit 36 at pp. 3-94 through 3-97. This Biological Assessment is largely un rebutted and constitutes substantial evidence pertaining to the western snowy plover.

Opponents did not offer any site-specific analyses that undermined this testimony. The Board found the testimony offered by the Center for Biological Diversity to be speculative and unsubstantiated. The Board finds that the Project complies with the Management Objective and General Condition 5 of CBEMP Management Unit 3-WD.

Oysters/Dungeness Crabs.

The Project is not expected to adversely affect oysters and Dungeness crabs in Coos Bay for the reasons explained in response to CBEMP Policy 5 above. Although opponents express concerns to the contrary, they do not present site-specific studies of their own nor do they adequately call into question the evidence presented by Applicant. Compare Letter from Dr. Sylvia Yamada, PhD., dated Dec. 18, 2015, Exhibit 14, with Applicant's Exhibit 80 (excerpt of the FERC Biological Assessment).

In her letter in opposition to the project, Dr. Yamada argues that both the construction-related dredging and the maintenance dredging that will occur in support of the project will harm crabs. She further notes that one study showed that 45% and 85% of Dungeness crabs died during a simulated dredging operation that occurred in 1978. The problem with this testimony is that it essentially would apply to *any* dredging operation. In other words, Dr. Yamada is essentially arguing that no dredging should be allowed in Coos Bay. However, the CBEMP allows certain types of dredging, and therefore Dr. Yamada's argument is really nothing more than a collateral attack on the CBEMP. Accordingly, there is no basis to sustain opponents' contentions on this issue.

Coho Salmon.

The Project is not expected to adversely affect Oregon Coast coho salmon in Coos Bay. As support for this conclusion, the Board relies upon an excerpt of the FERC Biological Assessment, which concluded that there would be no substantial adverse effect to coho salmon in Coos Bay resulting from construction of the Project or passage and docking of LNG vessels. *See* Applicant's Exhibit 80. FERC reached the conclusion that there would be no adverse effects to coho salmon during the construction phase for the following reasons:

- Removal of sediment along the shoreline during construction would occur behind a berm and would have no turbidity or other effects on the marine environment.
- Dredging outside of the bermed area would have short-term, localized effects that would occur during periods of low levels of young salmon and would cause adult fish to avoid the area.

Id. at p. 3-500 through 3-502. FERC reached the conclusion that there would be no adverse effects to coho salmon due to turbidity caused by passage and docking of LNG because modeling showed low turbidity impacts, which were short-term and localized in nature. *Id.* at p. 3-502 through 3-503.

Opponents express concerns to the contrary. *See, e.g.,* Letter from OSCC dated December 18, 2015, at p. 8. However, they do not present site-specific studies of their own nor do they adequately call into question the evidence from FERC presented by Applicant. Accordingly, there is no basis to sustain opponents' contentions on this issue.

Impacts to Adjacent CBEMP Zones.

Opponents contend that fill and mitigation in the 7-D zone and at the West Jordan Cove Site will affect the adjacent 7-NA zoning district. *See e.g.*, Letter from Katy Bymann dated December 18, 2015, at p. 2 (arguing, incorrectly, that the applicant's map on page 407 shows that the applicant intends to place fill in the 7-NA aquatic zone). *See also* Letter from Jody McCaffree dated January 12, 2016, at p. 13-14. The standards for the placement of fill and mitigation, and compliance with same, have been thoroughly addressed in the applicant's narrative. *See* Application Narrative at pp. 12, 83-86, 88-89, 93-96.

There is one aspect of the opponents' argument that does warrant further discussion: The management objective for the 7-D zone specially allows the continuation and expansion of "existing" non-water dependent / water related industrial uses so long as those industrial uses do not "adversely impact" the 7-NA zone:

This shoreland district, which borders a natural aquatic area, shall be managed for industrial use. Continuation of and expansion of existing non-water-dependent/non-water-related industrial uses shall be allowed provided that this use does not adversely impact Natural Aquatic District #7. In addition, development shall not conflict with state and federal requirements for the wetlands located in the northwest portion of this district.

There are no "existing" uses in the 7-D zone, so this second sentence of the management objective ceases to have any relevance. The mill that was located on the site has closed and the site is now vacant.

In addition, the opponents' allegation that fill and mitigation in 7-D will impact the 7-NA zone are completely unfounded as no evidence is cited in support of this statement. Nonetheless, the applicant requested that experts at David Evans and Associates (DEA) address this issue. As explained by DEA in Applicant's Exhibit 72, p. 6-7, excavation and embankment activities will be avoided in 7-NA. DEA notes that "It is not reasonable to assume that this site will flush large amounts of sediment into Zone 7-NA that would cause detrimental effects to Jordan Cove or Coos Bay because this level of harm is not observed at other disturbed areas in the bay." Applicant's Exhibit 72 constitutes substantial evidence on the issue, and is un rebutted by any scientific analysis of similar quality.

With respect to the West Jordan Cove site, much of the work will be completed with a berm dividing 7-D and 7-NA, then once the berm is removed, the mitigation has been designed to support a salt marsh community, rather than a silt-based mudflat. The salt marsh community will naturally help retain and stabilize sediment. In addition, shoreline stabilization measures will be incorporated to prevent erosion. Applicant's Exh. 72.

Regarding fill in the 7-D zone, the applicant is required to minimize adverse effects to adjacent resources via the NPDES 1200-C permit, the ODSL Removal-Fill permit, the USACE

404 permit, and the NMFS Biological Opinion. The Applicant describes how it intends to prevent harm to the adjacent 7-NA zone in Applicant's Exhibit 72, at p. 6. Therein, the applicant states that it anticipates only localized, temporary sedimentation impacts. Finally, initial studies have not indicated that shoreline stabilization is necessary in zone 7-D along the Mill site embankment. However, should slope stabilization be determined necessary during the final design, the applicant states that it would incorporate slope stabilization measures to address this issue.

For these reasons and because the opponents have cited no evidence in support of their argument, the County can find that there will be no negative impacts to the 7-NA zone. In fact, the West Jordan Cove site is part of the Compensatory Wetland Mitigation plan, Applicant's Exhibit 11, and is designed to provide valuable salt marsh community which is intended to benefit the ecosystem, including the 7-NA zone.

The opponents also contend that the Project impacts the 7-D zone and discusses prior approvals related to fill. In response, the applicant clarified that the applications under review do not rely on any prior approval. This application requests approval to place fill in the 7-D zones. As such any issues related to prior approvals or conditions are irrelevant.

Use of Contaminated Soils.

Opponents raise an issue regarding contaminated soils and storm water runoff. See McCaffree Letter dated January 12, 2016, at p. 14-15. The opponents make little attempt to correlate their issue to any specific applicable review criterion.

The soils on site have been tested, evaluated, and a DEQ approved work plan is in place for the management of contaminated soils. Applicant's Exhibit 29 contains evidence of the applicant's DEQ Approved Work Plan, which contains a detailed analysis of the contaminated soils on-site, authored by a certified engineering geologist, Mr. George Freitag, and a letter from Bill Mason at DEQ approving the work plan.

Furthermore, Applicant's Exhibit 31, SHN's Report and Solid Waste Letter of Authorization contains additional analysis of soils onsite and a discussion of the Test Pile and Ground Improvement Program. While the Test Pile program already occurred, it is useful because it demonstrates that the applicant can and has managed the excavation and temporary storage of low-level impacted ash/soil at Ingram Yard. Also included in Applicant's Exhibit 31 is a Phase II Environmental Site Assessment, conducted by Mr. Freitag, GRI, with additional soils analysis. Thus, contrary to opponents' unsubstantiated allegations, the Board finds that the applicant's extensive soils analysis constitutes substantial evidence.

With respect to storm water, JCEP manages and operates existing storm water pollution control facilities in accordance with State and Federal requirements as authorized by JCEP's solid waste permit, NPDES permit, and storm water management plan. This is detailed in Applicant's Exhibit 79, a letter from the Director, Regulatory Affairs, Mr. Bill Fowler.

The soils existing on site today have the opportunity to infiltrate into Coos Bay. Approval of this Project will enable the contaminated soils to be disposed of in an appropriate manner and prevent the potential for infiltration into Coos Bay.

Opponents have also raised issues about contaminated soils and flood hazards at the Kentucky mitigation site. See Letter from OSCC dated December 18, 2015, at p. 9. The applicant has undertaken extensive analysis and addressed these issues. See Applicant's Exhibits 48 - 59. The results of the soil studies conclude that chemical analysis of samples did not detect any contaminant above applicable screening levels and that the material is suitable for its intended use in the wetland mitigation site without restriction, with one exception: the results of Addendum 3 (Applicant's Exhibit 55) found mercury above Clean Fill screening criteria in the golf course irrigation pond. According to the applicant, it plans to remove these sediments to an off-site disposal facility. A condition of approval is imposed to address that issue.

Regarding flood hazards at Kentucky, Applicant's Exhibit 48 is a memorandum from Sean Sullivan, David Evans & Associates ("DEA"), which explains that WEST Consultants, Inc. ("WEST") concluded that "by providing additional capacity to allow flow to leave Kentucky Slough, the new tidegates will also have a benefit on flood control." Exhibit 48, at p. 6. See also Applicant's Exhibit 56 (WEST Hydraulic Evaluation Report).

Other Issues Raised by the Parties.

Federal Preemption (Relationship between the Coastal Zone Management Act and the Natural Gas Act).

One point of continued academic interest surrounds the potential for federal preemption of the Coastal Zone Management Act.

Under Section 307(c) of the Coastal Zone Management Act, an applicant must certify that the proposed activity in a designated coastal zone complies with the enforceable policies of the affected state's coastal zone management program. This applies to all Federal permits and authorizations, including FERC and the U.S. Army Corps of Engineers. If the state does not concur³³ with the certification, FERC approval to construct may not generally be granted. Having said that, the State's CZMA role is very limited. The Commission's only responsibility under the CZMA is to withhold construction authorization for a project until the state finds that the project is consistent with the state's NOAA-approved coastal zone management plan.

³³ DLCD is the state of Oregon's designated coastal management agency and is responsible for reviewing projects for consistency with the OCMP and issuing coastal management decisions. DLCD's reviews involve consultation with local governments, state agencies, federal agencies, and other interested parties in determining project consistency with the OCMP. DLCD's federal consistency decisions are called "coastal concurrences" [approvals] and "coastal objections" [denials]. Objections can be based on an inconsistency with coastal program policies or a lack of sufficient information to determine consistency. In the event of a formal DLCD objection, federal permits, licenses and financial assistance grants cannot be issued, and direct federal activities cannot proceed unless compliance with the OCMP is specifically prohibited by other federal law.

In addition, there is also an appeals process established with the CZMA. On appeal, the Secretary of Commerce may determine that there are overriding national security interests that justify approval of the project over the state's objection. And herein lies the heart of the preemption issue: under Section 307(c)(3)(A), the CZMA provides that the Secretary must override a state's objection to a proposed project that requires a federal license or permit if the project is "necessary in the interest of national security." 16 U.S.C. § 1456(c)(3)(A). A project is not "necessary in the interest of national security" unless a "national security interest would be significantly impaired were the activity not permitted to go forward as proposed." 15 C.F.R. § 930.122. It is unclear to the Board if this "national security interest" exception presents a difficult hurdle for an applicant. On the one hand, it seems that all matters related to energy production and international trade present issues of national security, but it is less clear whether the "significant impairment" standard is met in a case such as this. The recent FERC denial strongly suggests that the national security interest would not be so impaired, but the questions remains an open one.

Ms. McCaffree included some analysis written by an Oregon land use attorney. See Attachment 4 to Exhibit 60. Unfortunately, that analysis does not even attempt to engage in the preemption analysis addressed above.

Pacific Connector Gas Pipeline ("PCGP").

Various opponents made arguments which relate to the "PCGP" i.e. the gas pipeline associated with the JCEP project. However, the PCGP is outside the scope of this application. The PCGP is a separate entity and has been reviewed and approved by the Board of County Commissioners in County File No. HBCU-10-01/REM-11-01, County Order No. 12-03-018PL. These Applications are limited to JCEP's proposed Project, associated components, and related mitigation. Therefore, any issues related to the PCGP are irrelevant to the applications under review.

In a related note, opponents have raised concern regarding land use approval for the stretch of pipe from the PCGP metering station at the Mill Site extending west to the LNG facility at Ingram Yard. To be clear, the Applications include a request for approval of this stretch of pipeline. This section of the pipeline is owned and operated by JCEP on land owned by JCEP. The pipeline would run from the metering station west through the road and utility corridor. Applicant's initial narrative addresses all applicable zones and criteria. The Board finds that this component of the Project is compliant with all criteria for the reasons set forth in applicant's narrative, which are incorporated herein by reference. See Application Narrative at p. 7.

Statewide Planning Goals.

Various opponents raise compliance with the Statewide Planning Goals, especially Goal 7. Attorney Katy Eymann's letter dated January 26, 2016 is representative of this argument. Exhibit 83.

Pursuant to ORS 197.175(2)(d), each county shall "make land use decision and limited land use decisions in compliance with the acknowledged plan and land use regulations." The Statewide Planning Goals are necessarily met if a county's land use decision comports with acknowledged plan and implementing ordinances. See *Byrd v. Stringer*, 295 Or 311 (1983). The *Byrd* case warrants detailed analysis and is discussed in detail below.

In March 1981, LCDC acknowledged Polk County's comprehensive plan and land use regulations to be in compliance with Goal 3. The county's Farm/Forest zone allowed a farm dwelling subject only to a finding that the dwelling is in conjunction with "farm use," i.e. in conjunction with the current employment of land for the purpose of obtaining a profit from raising crops or livestock. The applicants sought a building permit for a farm dwelling on a one-acre lot, on which the applicants profitably raised rabbits and grew raspberries. The county approved the dwelling. LUBA reversed, concluding that approval was inconsistent with Goal 3, which required that farm parcel sizes ensure the continuation of the existing commercial agricultural enterprise in the area. LUBA concluded that a one-acre farm, no matter how profitable its rabbit warrens, was not a "commercial" enterprise.

The Court of Appeals reversed LUBA, concluding that LCDC, in acknowledging the Farm/Forest zone, had rejected 1000 Friends' challenge to the Farm/Forest zone, in which it argued that to comply with Goal 3 the Farm/Forest zone must allow dwellings only on parcels large enough to ensure the continuation of the commercial agricultural enterprise in the area. Because the LCDC acknowledgment order had rejected that challenge and expressly approved the Farm/Forest zone without consideration of parcel size, no such consideration was required. The basic holding of *Byrd* was re-affirmed in *Foland v. Jackson County*, 311 Or 167, 180, 807 P2d 801 (1991). Goal 8 does not apply as approval standards to a destination resort siting pursuant to a refinement process that was acknowledged to comply with Goal 8. However, several statutes and cases limit *Byrd's* holding.

- *Ludwick v. Yamhill County*, 72 Or App 224, 696 P3d 536 (1985). The goals apply to amendments to acknowledged comprehensive plan and land use regulations. ORS 197.175(2)(e).
- *Kenagy v. Benton County*, 115 Or App 131, 838 P3d 1076 (1992). While the statewide planning goals do not apply directly to decisions under acknowledged comprehensive plan provisions and land use regulations, statutes do.
- *Friends of Neabeack Hill v. City of Philomath*, 139 Or App 39, 911 P2d 350 (1996). An argument that an acknowledged plan policy is contrary to the goal it implements cannot be advanced under ORS 197.829(1)(d) if the argument necessarily depends on the thesis that the unambiguous terms of the plan policy are contrary to the goal.

- *Central Oregon Landwatch v. Deschutes County*, 52 Or LUBA 582, 599-600 (2006). If the terms of a local Ordinance provision implementing a goal are ambiguous, and that ambiguity can be interpreted consistently with the applicable goals and rules, ORS 197.829(1)(d) dictates that the county cannot instead choose an interpretation that is contrary to the applicable goals and rules.

Pursuant to ORS 197.646(3), post-acknowledgment goal or rule amendments apply directly to land use decisions until a local government amends its comprehensive plan or land use ordinance to be consistent with the post-acknowledgment goal or rule amendments. No party argues that this situation is present in this case.

Ms. McCaffree cites to Statewide Planning Goal 12 and appears to argue that this Goal applies in this case. See McCaffree Letter dated January 12, 2016 at p. 54. Her arguments are difficult to follow and appear to be a “cut and paste” job from various other materials that have been haphazardly jumbled together at the last minute. Ms. McCaffree attempts to make up for this by using copious underlining, bold text, and italics, but these stylistic accents are distracting.³⁴ In any event, her Goal 12 arguments are not sufficiently developed to enable review.

The opponents do not explain why Statewide Planning Goal 7 is applicable to a quasi-judicial land use application in a county with an acknowledged comprehensive plan and land use ordinances. See e.g., Letter from Katy Eymann dated December 18, 2015, at p. 2. Coos County recently adopted the Goal 7 Natural Hazard Map” but that map goes into effect on July 30, 2016. As a result, it does not apply to this application. This map could become relevant if the applicant needs extensions in the future.

For an interesting history of Oregon’s experience with Statewide Planning Goal 7 and post-disaster / hazard mitigation planning, see Steven R. Schell, *NIMBYs, Stakeholders, and Legitimate Expectations—A View of 40 Years of Changes in Oregon’s Land Use Regulation*, THE URBAN LAWYER, Vol. 46, No. 1 Winter 2014, at p. 112. Therein, Mr. Schell notes that Statewide Goal 7 has historically gotten “relatively short shrift” by local governments and land use practitioners. See also Edward J. Sullivan, *Remarks to University of Oregon’s Symposium Marking the Twenty-Fifth Anniversary of S.B. 100*, 77 OREGON LAW REVIEW 3, 1998. However, there may be renewed interest in Goal 7 as a result of Congress adopting a mitigation planning requirement as a modification to the Federal Disaster Relief Act (i.e., the Disaster Mitigation Act). Mr. Schell states:

Notwithstanding statewide planning Goal 7’s lack of initial impact and little use, in 2000, Congress adopted a mitigation planning requirement, as a modification to the Federal Disaster Relief Act (i.e., the Disaster Mitigation Act). FEMA has launched

³⁴ The hearings officer requests writers are careful not to use too many different fonts and font effects. A light touch is all one needs. Too many fonts, too many effects, or too much color only frustrates the reader. Try to keep things simple: Don’t use more than two on a page, don’t apply bold and italic and underline (all at once), don’t apply color to long passages of text, don’t use different font sizes, and choose a font that suits the subject matter.

an effective effort to encourage states and local communities to focus on the aftermath of natural disasters and plan accordingly. The motivation for local governments is an increase in the maximum percentages the federal government will pay to local governments for hazard mitigation measures in the event of a disaster if they have mitigation plans in place. Thus, at the time of declaration of the disaster, with a local plan in place, the federal government will pay up to 75% of the mitigation costs. Another incentive is also present, that of the ability of states to administer mitigation grants provided there are in place prior to the catastrophe sufficient, approved mitigation plans with criteria for making mitigation decisions.

While there is little guidance provided by the DLCD, help for local disaster response planners is provided by FEMA and the American Planning Association. As a result of the federal act, Oregon has undertaken mitigation planning. The resources are administered through the DLCD. After giving some lip service to statewide planning Goal 7, Oregon's state hazard mitigation plan recognizes that primary guidance comes from federal regulations, which first were adopted in 2002 to implement the Disaster Mitigation Act's requirements. Oregon's coastal counties have served as focal points for multi-jurisdictional hazard plans for lands inside and outside the cities in the counties. Notwithstanding the current lack of local comprehensive plan and zoning updating, which was originally anticipated by the periodic review process, the federal requirements require an update every three years for the state's enhanced hazard mitigation plan, and every five years for the local plans.

Disaster planning is being compelled, not by the goal process or activities of LCDC, but rather by the FEMA process and the monies made available by Congress for planning. Oregon's Congressman Blumenauer had been assisting through amendments to prevent repetitive replacements in exposed areas by providing limits on the flood insurance process. While Oregon is not a leader in this process, by responding to the carrot of funding, it is planning for the subduction earthquake and resulting tsunami damage and will be planning for the impacts of climate change on the Oregon coast.

The Oregon Structural Specialty Ordinance ("OSSC") Does Not Provide Approval Standards Applicable to Land Use Actions.

Various opponents cite to ORS 455.446 to 455.449 and argue that the LNG terminal and associated uses should be denied because of alleged failures to meet various mandates set forth in that statute. However, ORS Chapter 455 does not provide approval standards applicable to land use proceedings. The OSSC informs landowners as to the required standards the construction of buildings and structures. It does not inform the analysis of whether a land use that consists of various building or structure should be permitted or denied. As the applicant has previously noted, ORS Chapter 455 is titled: "Building Ordinance." Building ordinances are a separate issue from land use approvals, and building ordinance requirements do not, and cannot, drive land use approvals. In fact, the opposite is true: zoning ordinances determine what types of uses and structures can be constructed at any given location, and building ordinances inform the landowner to what minimum standard those allowed structures can be built. For example, ORS 455.447 authorizes the Oregon Department of Consumer and Business Affairs, after consultation with the Seismic Safety Policy Advisory Commission and DOGAMI, to adopt rules to amend the state building ordinance to establish requirements regarding seismic geologic hazards for certain types of facilities; it also requires developers of such facilities to consult with DOGAMI on mitigation methods if the facility is in an identified tsunami inundation zone. It is *not* implemented through the local government's comprehensive plan and land use ordinances.

Greenhouse Gas ("GHG") Emissions and Climate Change.

Various opponents argue that the project should be denied because it "is contrary to State, National, and International goals to reduce greenhouse gas emissions." *See e.g., Exhibit 41; 57.*

There are no applicable review criteria in the CCZLDO which require consideration of issues related to greenhouse gas emissions ("GHG") emissions or climate change. Furthermore, according to the applicant, DEQ issued an Air Contaminate Discharge Permit to JCEP, Permit No. 06-0118-ST-01 on June 16, 2015. *See Final Argument dated February 1, 2016, at p. 23. Exhibit 87.* According to the applicant, "This permit authorizes construction of the Project, thereby indicating that DEQ found that the Project would be able to meet air emissions limits and standards." There is no evidence to the contrary. Thus, any issues related to GHG emissions or climate change are irrelevant.

Rogue Climate argues that this project is inconsistent with ORS 468A.205. This statute states:

§ 468A.205 Policy

• greenhouse gas emissions reduction goals

(1) The Legislative Assembly declares that it is the policy of this state to reduce greenhouse gas emissions in Oregon pursuant to the following greenhouse gas emissions reduction goals:

(a) By 2010, arrest the growth of Oregon's greenhouse gas emissions and begin to reduce greenhouse gas emissions.

(b) By 2020, achieve greenhouse gas levels that are 10 percent below 1990 levels.

(c) By 2050, achieve greenhouse gas levels that are at least 75 percent below 1990 levels.

(2) The Legislative Assembly declares that it is the policy of this state for state and local governments, businesses, nonprofit organizations and individual residents to prepare for the effects of global warming and by doing so, prevent and reduce the social, economic and environmental effects of global warming.

(3) This section does not create any additional regulatory authority for an agency of the executive department as defined in ORS 174.112 (Executive department defined). [2007 c.907 §2]

This statute is not an approval standard for a land use permit, and it is unclear what, if any, purpose is served by this statute.

Earthquake/Tsunami Risk / Statewide Planning Goal 7.

Various opponents raise issues surrounding the risk of damage by earthquakes and Tsunamis. A letter from Dennis Netter dated December 30, 2015 is representative of this argument. Exhibit 41. *See also* Exhibit 83.

There are no review criteria related to tsunamis in the CCZLDO and the only criterion related to earthquakes is Special Development Considerations, Natural Hazards, Section 4.11.125(7) which only applies in the Industrial zone.³⁵ However, the County's Natural Hazards map does not include earthquakes on the inventory list. CCZLDO 4.11.125(7). Furthermore, with respect to earthquakes Section 4.11.125(7)(c) provides no standard or review criteria for the applicant to demonstrate compliance with. Section 4.11.125(7)(c) is a directive to the County to (1) support the State Building Ordinance Division's enforcement program and (2) require that high occupancy and critical use facilities (such as schools and hospitals) be located in areas of stable ground conditions.³⁶ Since (1) is a directive to the County, it is not applicable to the Applications. Regarding (2), Applicant is not proposing high occupancy or critical use facilities. Therefore, both (1) and (2) are irrelevant because they are not applicable review criteria.

³⁵ Pursuant to CCZLDO Section 4.11.125, "[d]evelopment considerations play a very important role in determining where development should be allowed in the Balance of County zoning." By the CCZLDO's specific terms, it limits the applicability of the Special Development Considerations to the Balance of County zones, which in this case include the Industrial and EFU zones.

³⁶ Exhibit 13 is a site-specific exemption from Mr. Shane Sumption, Oregon Building Codes Division, allowing the siting of the fire station because it requires a "strategic location" due to the four-minute response time required by the National Fire Protection Association. See Exhibit 17, MOU between JCEP and the State of Oregon, Section V.1.a. for the four-minute requirement. Further Mr. Sumption suggests that once filled, the site would be removed from the requirements of construction in a tsunami inundation zone.

Although the Applicant is not proposing high occupancy or critical use facilities, the ground in the Project footprint will be stabilized. While neither the Statewide Planning Goals nor CCZLDO define 'stable ground conditions,' Applicant plans to avoid or minimize adverse effects to the resources or risk to the Project from geologic hazards via ground improvements or other mitigations. See Applicant's Exhibit 43, page 6-5. A thorough site-specific seismic hazard analysis for JCEP was conducted by registered engineers at Geotechnical Resources, Inc. in Applicant's Exhibits 38 and 43. The purpose of the study was to evaluate the potential seismic hazards and develop seismic design criteria for the Project to aid engineers designing the Project. Based upon the detailed hazards analysis, the applicant is proposing methods to stabilize the ground and protect the site: such as densifying the upper portion of the gas conditioning facility to prevent liquefaction, removing Cell 3 prior to construction of Project facilities to address biogenic gas, designing the Project at elevations that exceed the design-level tsunami (a 2,475 year event with a factor of safety of 1.3). App. Exhibit 43, page 6-9. In sum, the results of the geotechnical investigations indicate that subsurface conditions at the site are suitable for the Project facilities, provided that adequate site preparation and foundation design and construction methods are implemented. The Project facilities will be designed to account for the liquefaction, subsidence, and tsunami hazards. App. Exhibit 43, page 6-8.

Finally, JCEP has agreed to retain a Board of Consultants who will review the final design and perform construction quality inspections for the Project. JCEP will supply information to the Board of Consultants prior to initial site preparation, prior to commencing final design, prior to construction, and prior to commissioning. App. Exhibit 43, page 6-10.

Collectively these measures will ensure that the Project is built in accordance with applicable building requirements for earthquakes and tsunamis.

Fracking.

At the public hearing, various opponents provided testimony setting forth their opposition to fracking. Issues related to fracking are irrelevant to these Applications because Applicant is not requesting approval for hydraulic fracturing. Applicant is not proposing any fracking on the North Spit. Therefore, any issues related to fracking are irrelevant and are properly dismissed.

Eminent Domain.

Opponents mention their opposition to the use of eminent domain to "build facilities that will benefit no one but foreign or out of state corporate shareholders." See Exhibit 58. Issues related to eminent domain are irrelevant to these Applications because no properties are proposed to be condemned as part of the Project. Applicant owns the land upon which the LNG facility is proposed to be constructed.

NEPA Does Not Apply.

It seems that in every application related to the LNG Terminal and gas pipeline, opponents raise the issue of NEPA compliance. The NEPA process and the state-mandated,

County-implemented land use process are operating on separate tracks, and appear to have little, if any, intersection. LUBA has held that in cases where a NEPA process must be undertaken in conjunction with a local land use process, that the NEPA process need not precede the land use process. *Standard Ins. Co.*, 16 Or LUBA at 724. In *Standard Ins. Co.*, LUBA recognized that even after an EIS is prepared, that local comprehensive plans are "subject to future change." *Id.* LUBA acknowledged the possibility that the adoption of a plan amendment or a series of amendments might result in the need to prepare a supplementary EIS. *Id.* (citing *Comm. for Nuclear Responsibility v. Seaborg*, 463 F. 2d 783, (D.C. Cir. 1971)). Nonetheless, LUBA noted that "there is no requirement that a new EIS precede such plan amendments."

Purpose Statements Are Not Approval Standards.

Various persons stated that the public hearing that the application must comply with CCZLDO 1.1.200(2). According to these individuals, this Ordinance provision requires the County to find that the application is in the public's best interest and that it promote and protect the convenience and general welfare of the citizens of Coos County. However, CCZLDO 1.1.200(2) is a general purpose statement for the zoning Ordinance and states general objectives only. It does not purport to apply as an independent approval standard to any specific land use application. *Bennett v. City of Dallas*, 17 Or LUBA 450, 456, *aff'd* 96 Or App 645 (1989); *Stotter v. City of Eugene*, 18 Or LUBA 135, 157 (1989).

For example, in her email dated January 11, 2016, Sarah Robertson tries to apply certain purpose statements that appear in the Planning Department mission statement, which apparently can be found on the County's website. Exhibit 47. Such mission statements are not approval criteria.

Generally, land use purpose statements express goals and objectives the local government hopes to achieve via the implementing ordinance. In these circumstances, the purpose statement is not a mandatory approval criterion. *Renaissance Development v. City of Lake Oswego*, 45 Or LUBA 312, 323 (2003).

There are two exceptions to this general rule. First, the text of the purpose statement may elevate the purpose statement beyond simply being descriptive or aspirational. *See Freeland v. City of Bend*, 45 Or LUBA 125 (2003) (where purpose statement expressly required that decision-makers "consider" certain impacts, the decision must address issues the parties raise as to those impacts).

Second, the approval criteria requires compliance with the purpose statement. *See Crowley v. City of Bandon*, 43 Or LUBA 79 (2002) (zoning district purpose statement is a separate mandatory approval criterion when the listed approval criteria require that development must promote "the purpose of the zone"). *See also Rowan v. Clackamas County*, 19 Or LUBA 163 (1990) (where zoning Ordinance expressly required that conditional uses not conflict with the purpose statement of the applicable zoning district, the county was required to make a finding regarding this issue).

CCZLDO 1.1.200 is the purpose statement and reads as follows:

It is the purpose of this Ordinance to implement the Coos County Comprehensive Plan by:

1. Promoting the orderly growth of Coos County,
2. Protecting and enhancing the environment,
3. Conserving and stabilizing the value of property,
4. Reducing excessive traffic congestion,
5. Preventing overcrowding of land by establishing standards for proper density,
6. Providing adequate open space for light and air,
7. Conserving natural resources,
8. Encouraging the most appropriate use of land,
9. Preventing water and air pollution,
10. Facilitating fire and police protection,
11. Providing for community facilities,
12. Promoting and protecting the public health, safety, convenience and general welfare.

Although opponents have referenced CCZLDO 1.1.200 as an approval criterion applicable to the Applications, opponents are mistaken in the applicability. As the quoted text demonstrates, CCZLDO 1.1.200 is a generally-worded statement with broad, sweeping, aspirational statements that lacks any objective standard by which to measure an application against. CCZLDO 1.1.200 merely states that the purpose is to implement the Comprehensive Plan. Unlike the purpose statement in *Freeland*, CCZLDO 1.1.200 does not require that the County take a specific action or even consider the listed objectives. Further, unlike the purpose statements at issue in *Crowley* and *Rowan*, no criterion in the CCZLDO requires compliance with CCZLDO 1.1.200.

Implementation of the purpose statement in CCZLDO 1.1.200 can be compared and contrasted to the specific implementation of the CBEMP's Management Objectives. Like the purpose statement in CCZLDO 1.1.200, the Management Objectives also provide "general policy guidance." CCZLDO 3.2.150(5)(a). However, unlike CCZLDO 1.1.200, the text of CCZLDO 3.2.150 specifically makes the Management Objective part of the review for a proposed use. CCZLDO 3.2.150 provides directions on how to use Article 3, with directions to "follow the steps below." CCZLDO 3.2.150(5)(a), or step 5, requires review of the district's Management Objective. From this contrast between CCZLDO 1.1.200 and 3.2.150, it is clear that where the Ordinance drafters intended general policy to be an applicable review criterion they knew how to implement it and in fact implemented it.

Finally, even if the County applies CCZLDO 1.1.200 to the Applications, there is no basis to grant opponents' contentions that the Project is not consistent with the purpose statements objective of "promoting and protecting the public health, safety, convenience and general welfare." As evidenced in the CCZLDO, the County has determined that industrial and port-facilities uses are allowed in the 6-WD zone and that industrial uses are allowed on the North

Spit, subject to approval criteria. Opponents' proposed interpretation of CCZLDO 1.1.200 ignores the zoning districts implemented via County legislation and objectives 1 - 11 of the purpose statement. For example the Project squarely meets objective 1, "promoting the orderly growth of Coos County" as the Project will provide unprecedented growth opportunities for the County. Evidence of such growth is documented in Exhibit 24, ECONorthwest's Economic Impact Analysis for the Project, which found:

- The total expenditure on the Project would be \$5.354 billion of which \$4.494 billion would go into the direct construction of the pipeline and terminal facilities. That represents the Project's direct economic output. Through downstream impacts, total economic output in Oregon and Washington would be \$6.641 billion as a result.
- In terms of gross domestic product, which is the overall net value added to the economy due to the construction, Oregon and Washington would experience a total increase of \$1.738 billion between 2014 and 2017. Of this, \$739 million would occur directly at the construction sites while nearly one billion dollars more would result from non- direct effects that would stimulate additional spending and employment in the economy.
- In the average year from 2014 to 2017, Project construction activities would employ 1,768 workers receiving \$182.6 million in compensation. The economic stimulus provided by the construction would cause employment and labor earnings to rise elsewhere in the Oregon and Washington economies. The total annual employment impact is estimated to be 5,137 additional jobs earnings \$330.0 million in labor income.

For these reasons, the purpose statement is irrelevant because it is not an applicable review criterion and even if considered, the Project is consistent with CCZLDO 1.1.200.

Enforceability of Conditions of Approvals.

Ms. Stacey McLaughlin raises an interesting point in her letter dated January 12, 2016. She writes:

"RPA conditions are notoriously hard to enforce. Many conditions that look great on paper stay on paper and are never actually implemented. I fear this is the case with the insane mitigation measures proposed by Jordan Cove. Jordan cove is employing "bait and switch" scenarios for the impacts to properties that are subject to the Public Trust. Will you be falling for it."

The hearings officer discussed the general issue of enforcing conditions in his Recommendation in File No. HBCU 13-04:

Moreover, even if the point is well taken that Williams caused contamination to a creek in Colorado, it does not necessarily provide a basis to deny the land use application. In a land use case, the decision-maker cannot simply assume that the applicant will fail to live up to its promises. A decision-maker cannot simply speculate that the applicant will fail to maintain his equipment or that it will not follow federal safety and inspection requirements, particularly based on anecdotal evidence of past events, often associated with unrelated actors. *See Champion v. City of Portland*, 28 Or LUBA 618 (1995) ("Illegal acts, such as those alleged by petitioner, might provide the basis for an Ordinance enforcement proceeding. However, petitioner fails to show that the alleged illegal activity by the applicants is relevant to any legal standard applicable to the approvals granted by the city in the decision challenged in this appeal."); *Canfield v. Lane County*, 16 Or LUBA 951, 961 (1988) ("Petitioner's view that the conditions will be violated is speculation. We do not believe the county is obliged to assume future violations of the condition."). *Gann v. City of Portland*, 12 Or LUBA 1, 6 (1984).

The case of *Stephens v. Multnomah County*, 10 Or LUBA 147 (1984) provides a good example of how LUBA views this type of "prior violations" testimony. The applicant in *Stephens* was a business that rented out portable toilets. The applicant was seeking a permit to store empty Port-a-Johns on a site. Opponents cited the company's prior history of DEQ violations as a reason for denial. LUBA responded as follows:

Petitioner also alleges evidence should have been considered that DEQ had charged the applicant with violation of DEQ regulations at other places regarding handling of waste. Petitioner asserts that evidence is relevant to show DEQ regulations will not be followed in the future by the applicant. In land use permit applications, evidence of prior land use violations is not generally considered as grounds for a denial, at least where there are no specific standards authorizing denial for such reasons. *See generally* 3 Anderson, *American Law of Zoning*, Section 19.24 (1977). Such evidence of prior violation does not show there will be repeated violations nor is it proper to punish the applicant for previous acts if an enforcement agency has already done so. *Pokoik v Silsdorf*, 390 NYS2d, 49, 358 NE2d 874 (1976). Such evidence of DEQ enforcement actions, particularly at other locations, was properly excluded by the Board. In a footnote, LUBA provided dicta setting forth an exception to the general rule:

We do not mean to hold evidence of prior violations should be disregarded in all cases. Where such evidence shows impossibility of performance as distinguished from propensity to not perform, there may be a basis for consideration. (Emphasis added).

Thus, if a pipeline company has a track record of non-compliance with applicable law, those facts can be relevant in some circumstances. But the opponents here have not provided sufficient evidence to convince the hearings officer that impossibility of performance is likely in this case. The testimony related to prior acts by Williams falls far short of what would be required to prove impossibility of performance.

* * * * *

Furthermore, a land use approval is not a guarantee of success of a project. Nor it is a guarantee that no environmental harm will be done during the course of construction. At best, a land use approval process can simply verify that an applicant has both a "plan" as well as a set of contingencies to deal with potential problems. During the land use process, Coos County can verify that those plan are both feasible and likely to succeed. However, as Coos County learned from a past pipeline case, having a plan is not always enough. Problems can occur during construction, and it is only with vigilance, monitoring, supervision, and oversight can the County put itself in a good position to ensure both the success of the project and compliance with promises the applicant has made.

Nonetheless, the Board disagrees with the unstated premise behind Ms. McGlaughlin's argument, which is that the LNG Terminal should be denied if the conditions of approval are difficult to enforce. Oregon law prohibits that sort of analysis, as explained above. *Champion v. City of Portland*, 28 Or LUBA 618 (1995); *Canfield v. Lane County*, 16 Or LUBA 951, 961 (1988); *Gann v. City of Portland*, 12 Or LUBA 1, 6 (1984). Conditions of approval are common, and it is hard to imagine how any development could move forward without them. If and how conditions are enforced is beyond the scope of this proceeding.

Landslides.

Ms. McCaffree dedicates a significant amount of effort discussing the potential for landslides. See McCaffree Letter dated January 12, 2016 at p. 26-8. Ms. McCaffree makes no attempt to relate her testimony on this topic to any specific approval criterion. Her main point is that "Oregon coastal soils are unsuitable for the [JCEP] terminal and pipeline construction." Her evidence consists of photos of roads in mountainous/hilly terrain that have suffered from mass wasting events. This material seemed, at least in part, to be recycled from past submittals, and is geared mainly towards the pipeline. Of course, the pipeline is not at issue in this case. In any event, the Board does not see how this testimony bears any relationship to the terminal site, which is flat and therefore not subject to mass wasting events. This evidence therefore provides no basis for a remand.

Coos County Comprehensive Plan Section 5.11.

Ms. McCaffree asserts that the proposal violates Plan Policy 5.11, Implementation Strategies 1, 5, 6, and 7. See Letter from Jody McCaffree dated January 12, 2016, at p. 61-61. Implementation Strategy 1 is a directive to the County to enact "special protective measures through zoning and other implementing devices, designed to mitigate risks to life and property." It is unclear whether the county has completed this directive, but it is clear that the strategy cannot be directly applied to a permit. Strategy 1 expressly states that it is not an approval standard:

This strategy shall be implemented by enacting special protective measures through zoning and other implementing devices, designed to minimize risks to life and property.

Implementation Strategy 5 is a directive to the County, and is implemented by County staff making "consistency statements" required by Federal permits. The Board is not entirely sure what that means, but it is clear that it is not applicable to a local quasi-judicial land use proceeding. It is not an approval standard because it is not worded in mandatory fashion.

Implementation Strategy 6 does potentially apply in the permitting context, but it only applies to "known areas potentially subject to mass movement (earth flow / Slump topography / rock fall / debris flow)." The Natural Hazards inventory map does not indicate earth flow, slump topography, rock fall, or debris flow in the portion of the Industrial, Forest, or EFU zones subject to this application.

Implementation Strategy 7 is, once again, a legislative directive to the County to enact special protective measures consistent with this strategy and does not apply to site-specific requests for zoning approval such as this one. The County's inventory map of natural hazards indicates a "wind hazard" on or near a portion of the industrial zone. This strategy clearly states that the County shall regulate development in known areas subject to natural hazards by enacting special protective measures through zoning and implementing devices. It does not appear that the County has enacted any special protective measures regarding "wind hazards." Strategy 7 applies to critical facilities. As discussed elsewhere in this Recommendation, the proposed use is not a critical facility. In any event, Strategy 7 expressly states that it is not an approval standard

because it is implemented through implementing ordinance provisions. See CCZLDO 4.11.125(7). Furthermore, the portion of the subject property in the Industrial zone has been developed and used for heavy industrial use for decades and is not subject to wind erosion. Furthermore, the Project will require compliance with sediment and erosion control plans which will serve to minimize wind erosion. This strategy is satisfied.

Coos County Comprehensive Plan Section 5.12.

Ms. McCaffree argued that the applicant did not address CCCP Policy §5.12. See McCaffree Letter dated January 12, 2016 at p. 26-8. CCCP Policy §5.12 requires the County to “comply with state, air, water quality and noise source standards that are established by law.” This policy is a directive to Coos County and is not an approval standard for a permit.

Although her argument is not well developed, it appears that Ms. McCaffree is arguing that Statewide Planning Goal 6 is an “air standard” that is “established by law, and therefore, the County must apply Statewide Planning Goal 6 to this CUP application.

The problem with this argument is that LUBA has held that Statewide Planning Goal 6 only applies to comprehensive plan and zoning map amendments. At that time, a local government is obligated under Goal 6 to demonstrate that it is reasonable to expect that the proposed uses that will be allowed with a zone via the PAPA or zone change will be able to comply with applicable state and federal environmental standards. *Marcott Holdings, Inc. v. City of Tigard*, 30 Or LUBA 101, 114 (1995); *Salem Golf Club v. City of Salem*, 28 Or LUBA 561, 583 (1995). In those situations, Goal 6 is not satisfied by findings stating only that the proposed use will be required through conditions to comply with applicable environmental standards. *Eckis v. Linn County*, 19 Or LUBA 15, 35 (1990). Goal 6 does not require a local government to demonstrate that its decision will not cause any adverse environmental impact on individual properties. *Salem Golf Club v. City of Salem*, 28 Or LUBA 1561 (1995). See also *Jil Ranch Enterprises v. Wallowa County*, ___ Or LUBA ___ (LUBA No. 83-108, 1984).

Coos County Comprehensive Plan Section 5.19.

Ms. McCaffree cites to CCCP Policy §5.19 and appears to argue that this Policy and implementation strategies are approval standards. See McCaffree Letter dated January 12, 2016 at p. 49-53.

LUBA has often held that some plan policies in the comprehensive plan will constitute mandatory approval criteria applicable to individual land use decisions, depending on their context and how they are worded. See *Stephan v. Yamhill County*, 21 Or LUBA 19 (1991), *Von Lubken v. Hood River County*, 19 Or LUBA 404 (1990). For example, where a comprehensive plan provision is worded in mandatory language – such as when the word “shall” is used – and is applicable to the type of land use request being sought, then LUBA will find the standard to be a mandatory approval standard. Compare *Axon v. City of Lake Oswego*, 20 Or LUBA 108 (1990) (“Comp plan policy that states that “services shall be available or committed prior to approval of development” is a mandatory approval standard); *Save our Skyline v. City of Bend*, 48 Or LUBA

192, 209-10 (2004); *Friends of Hood River Waterfront v. City of Hood River*, 67 Or LUBA 179 (2013); *Friends of Hood River Waterfront v. City of Hood River*, 68 Or LUBA 459, *rev'd in part on other grounds*, 263 Ore. App. 80 (2014). Conversely, use of aspirational language such as "encourage" "promote," or statements to the effect that certain things are "desirable" will generally not be found to be mandatory approval standards. *Id.*; *Neuschwander v. City of Ashland*, 20 Or LUBA 144 (1990); *Citizens for Responsible Growth v. City of Seaside*, 23 Or LUBA 100 (1992), *aff'd w/o op.* 114 Or App 233 (1993); *Benjamin v. City of Ashland*, 20 Or LUBA 265 (1990).

The two Plan Implementation strategies cited by Ms. McCaffree contain directives to the County and are not applicable to a conditional use permit. Moreover, in the case of Policy 5.19 Implementation strategy 1, the language "strive to provide and encourage" is not interpreted as being a mandatory approval standard.

Old Outdated Reports / Mitigation Inadequate, etc.

Ms. McCaffree makes a number of arguments on pages 75-76 of her letter dated January 12, 2016. These arguments are poorly written, difficult to follow, and no attempt is made to relate these arguments to an approval criterion. These arguments are presented as a shotgun blast, and little thought is made to develop the argument or otherwise support it with evidence. These arguments are not simply sufficiently developed to allow review. *Deschutes Development v. Deschutes County*, 5 Or LUBA 218 (1982).

CCZLDO 4.11.120.

Ms. McCaffree cites to CCZLDO 4.11.120 and appears to argue that this Policy and implementation strategies are approval standards. See McCaffree Letter dated January 12, 2016 at p. 76. She argues that the map entitled "Coos County Shoreland Values Requiring Mandatory Protection" shows an archeological site that requires protection. She argues that "any dynamic compaction or vibro compaction to the site could essentially destroy any and all archeological and cultural resources that may be buried on the site." Ms. McCaffree's analysis calls for multiple layers of speculation, and is rejected.

192, 209-10 (2004); *Friends of Hood River Waterfront v. City of Hood River*, 67 Or LUBA 179 (2013); *Friends of Hood River Waterfront v. City of Hood River*, 68 Or LUBA 459, *rev'd in part on other grounds*, 263 Ore. App. 80 (2014). Conversely, use of aspirational language such as "encourage" "promote," or statements to the effect that certain things are "desirable" will generally not be found to be mandatory approval standards. *Id.*; *Neuschwander v. City of Ashland*, 20 Or LUBA 144 (1990); *Citizens for Responsible Growth v. City of Seaside*, 23 Or LUBA 100 (1992), *aff'd w/o op.* 114 Or App 233 (1993); *Benjamin v. City of Ashland*, 20 Or LUBA 265 (1990).

The two Plan Implementation strategies cited by Ms. McCaffree contain directives to the County and are not applicable to a conditional use permit. Moreover, in the case of Policy 5.19 Implementation strategy I, the language "strive to provide and encourage" is not interpreted as being a mandatory approval standard.

Old Outdated Reports / Mitigation Inadequate, etc.

Ms. McCaffree makes a number of arguments on pages 75-76 of her letter dated January 12, 2016. These arguments are poorly written, difficult to follow, and no attempt is made to relate these arguments to an approval criterion. These arguments are presented as a shotgun blast, and little thought is made to develop the argument or otherwise support it with evidence. These arguments are not simply sufficiently developed to allow review. *Deschutes Development v. Deschutes County*, 5 Or LUBA 218 (1982).

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IV. CONCLUSION AND RECOMMENDATION

For the above stated reasons, the Board concludes that the applicant has met its burden of proof to demonstrate that it has satisfied all applicable approval standards and criteria, or that those standards or criteria can be satisfied through the imposition of conditions of approval.

Conditions of Approval

CCZLDO 5.0.350 authorizes reasonable conditions of approval. The Board has set forth those conditions below.

A. Public Trust Doctrine.

1. The applicant's use of Coos Bay shall be limited to approximately 100 LNG transport tankers per year. Smaller vessels such as barges, tug boats, or other cargo ships that do not require a security zone do not count for purposes of this condition.

B. Environmental.

1. The applicant shall obtain any and all necessary state and federal permits, included required permits from USACE, DSL, and DEQ, among others.
2. Fill and removal activities in Coos Bay shall be conducted between October 1 and February 15, unless otherwise modified by the Oregon Department of Fish and Wildlife.
3. Contaminated sediments from the golf course irrigation pond shall be removed to an off-site disposal facility.

C. Transportation Impacts.

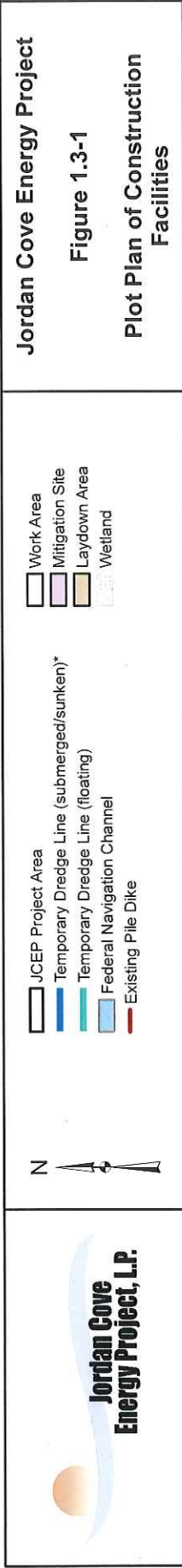
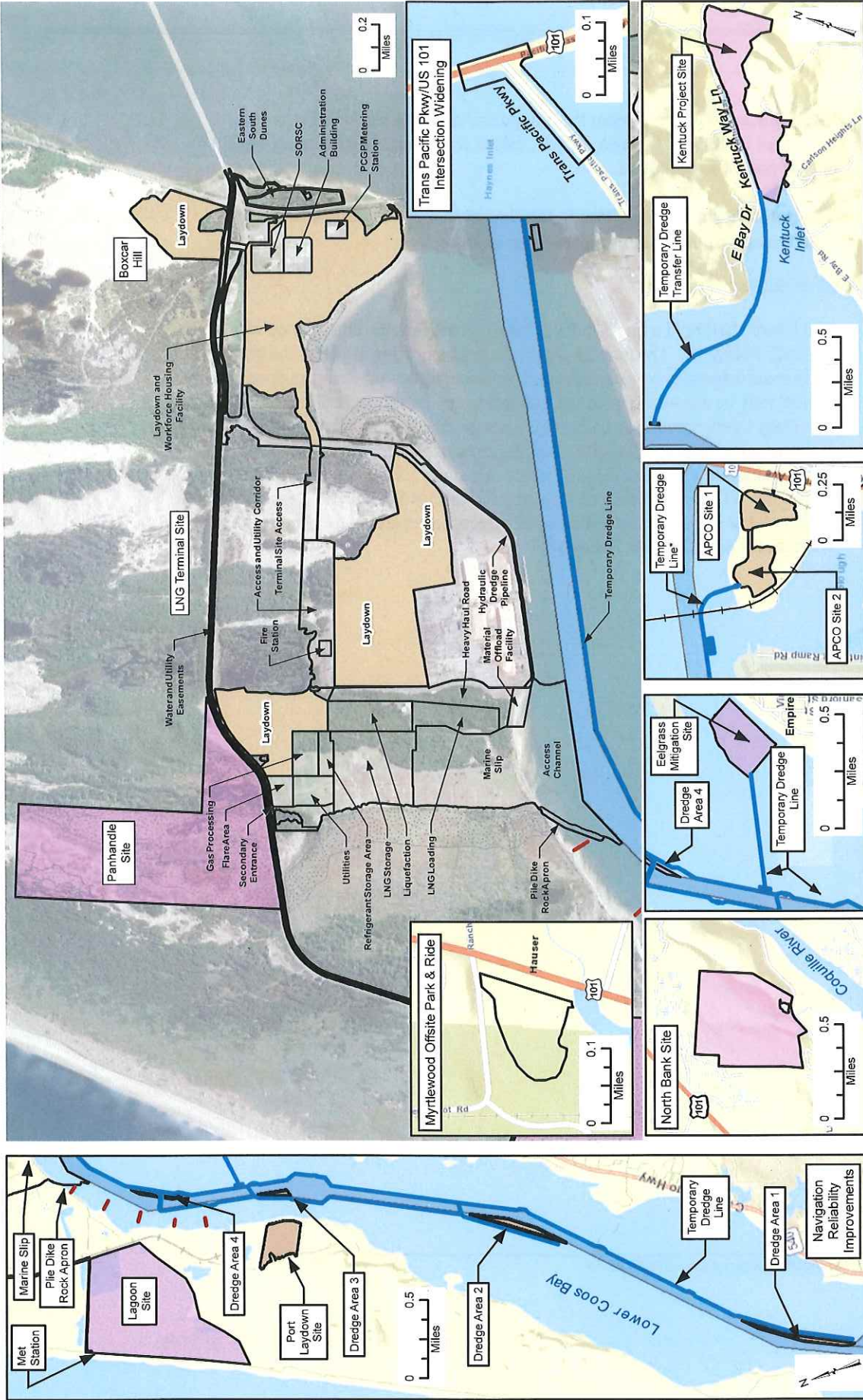
1. The applicant shall complete the recommended mitigation measures identified by the TIA Update dated November 2015.
2. The applicant shall complete the recommended mitigation measures identified by ODOT in its letter dated December 15, 2015.
3. The applicant shall comply with the Roadmaster's requirement regarding road structure, as set forth in his letters dated January 11, 2016 and February 26, 2016.

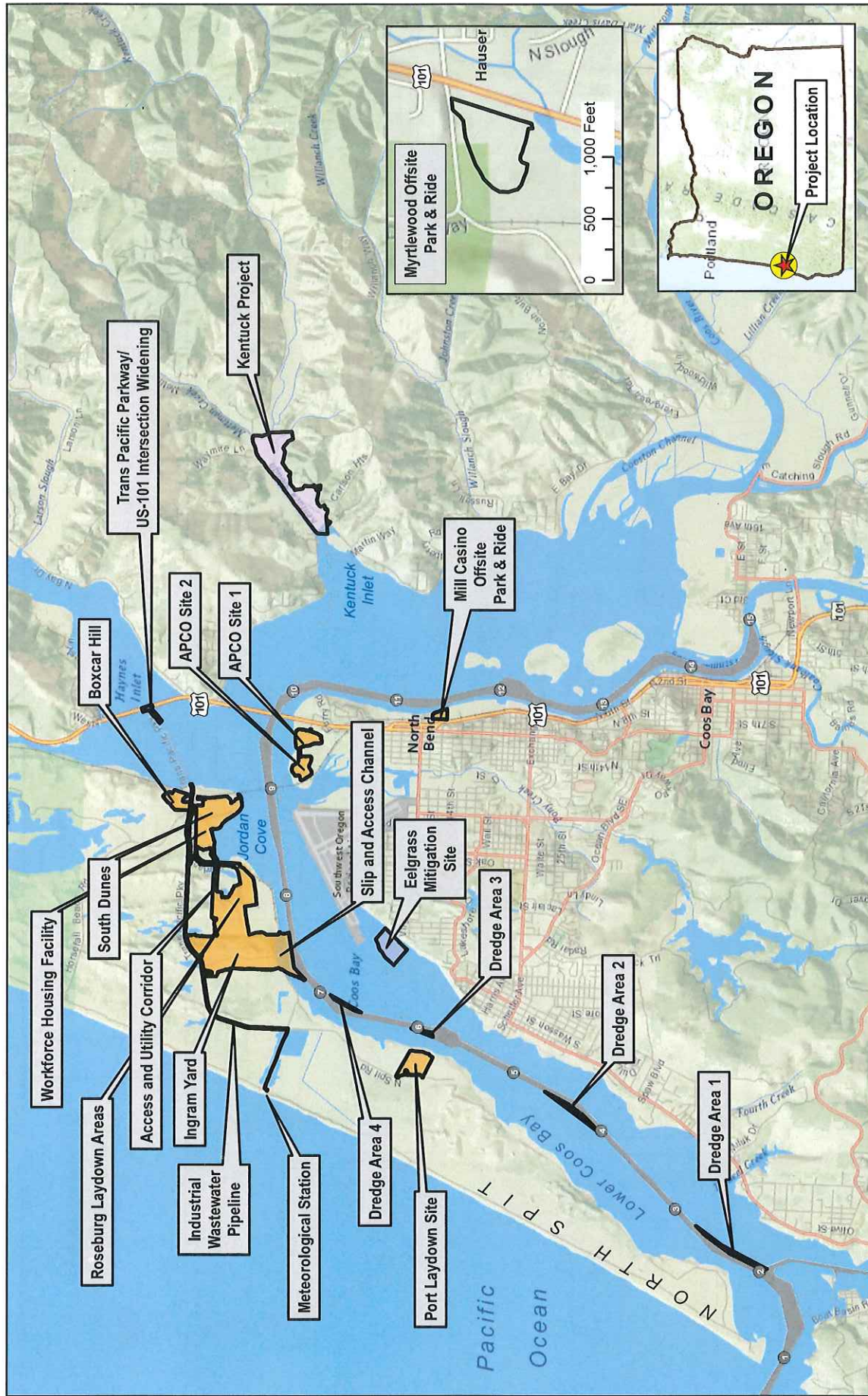
D. Airport Overlay Zone

1. The applicant shall implement the mitigation measures set forth in the letter submitted by Mr. Earl Himes, Jr, P.E., Black & Veatch, dated January 11, 2016. See Applicant's Exhibit 33.
2. The applicant shall demonstrate to the County that it has satisfied the requirements of the FAA as it pertains to SORA.

E. Cultural Resources.

1. The Board shall hold a quasi-judicial hearing to determine compliance with CBEMP Policy 18. The hearing shall be a public hearing at which the governing body shall determine by preponderance of the evidence whether the development project may be allowed to proceed, subject to any modifications deemed necessary by the governing body to protect the cultural, historical, and archaeological values of the site. For purposes of this condition, the public hearing shall be subject to the provisions of section 5.7.300 of the CCZLDO with the Board of Commissioners serving as the Hearings Body. The Board's decision in that matter shall constitute the Board's decision regarding the Applications' consistency with CBEMP Policy 18.

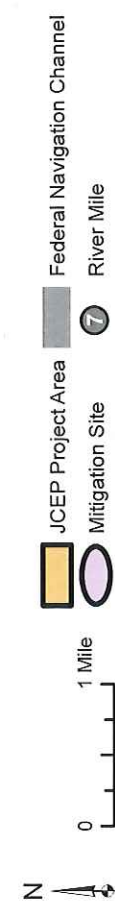




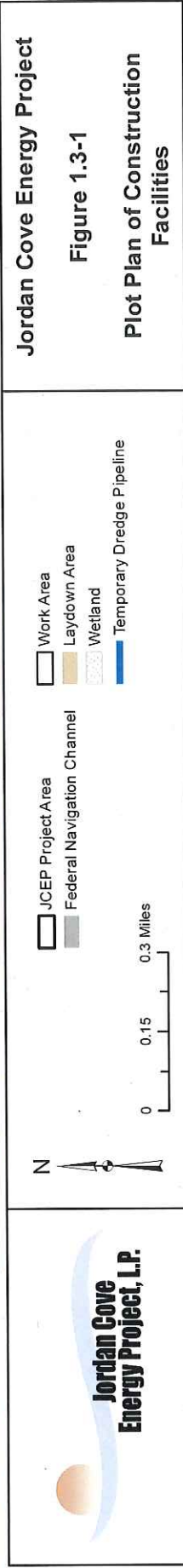
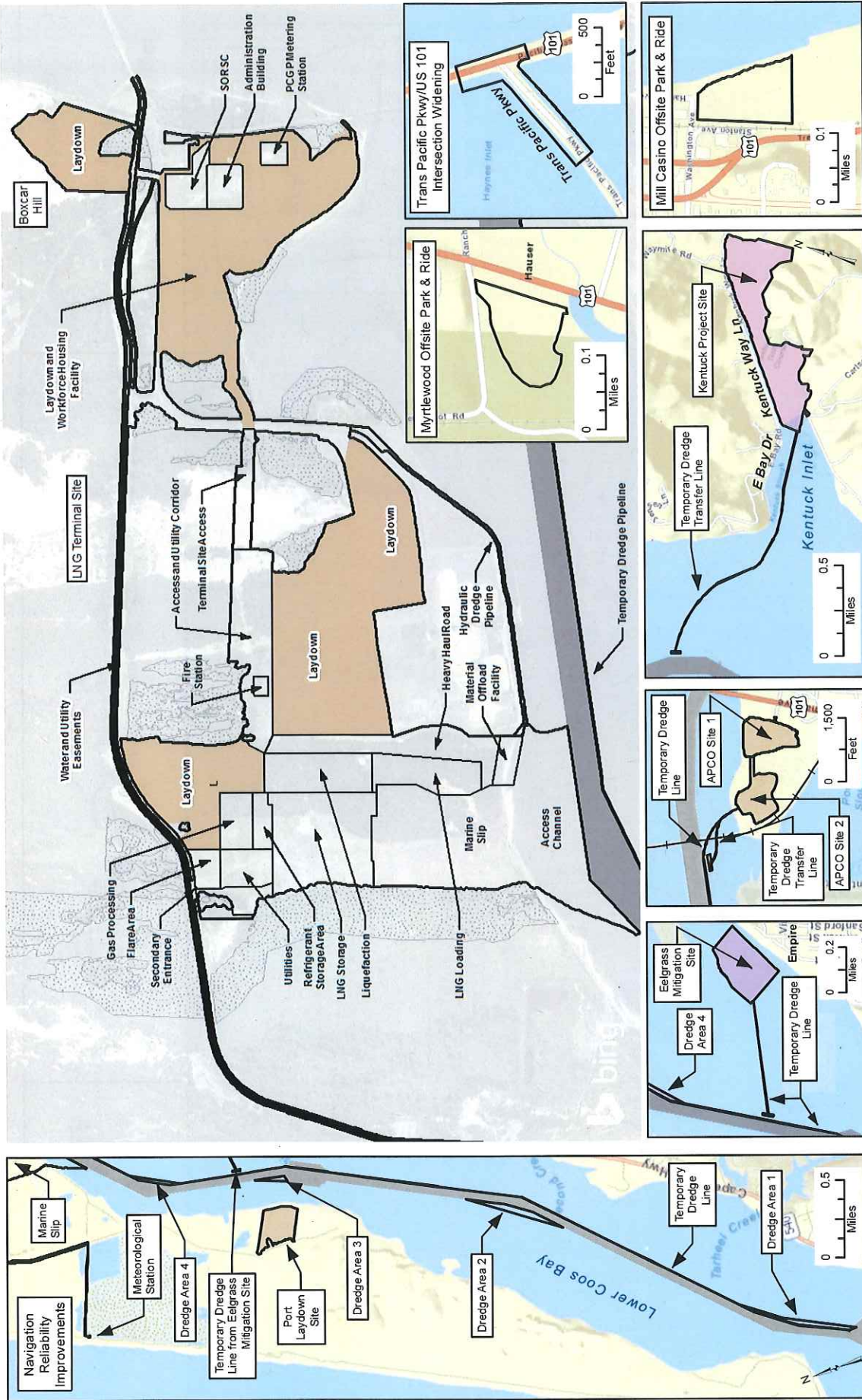
Jordan Cove Energy Project

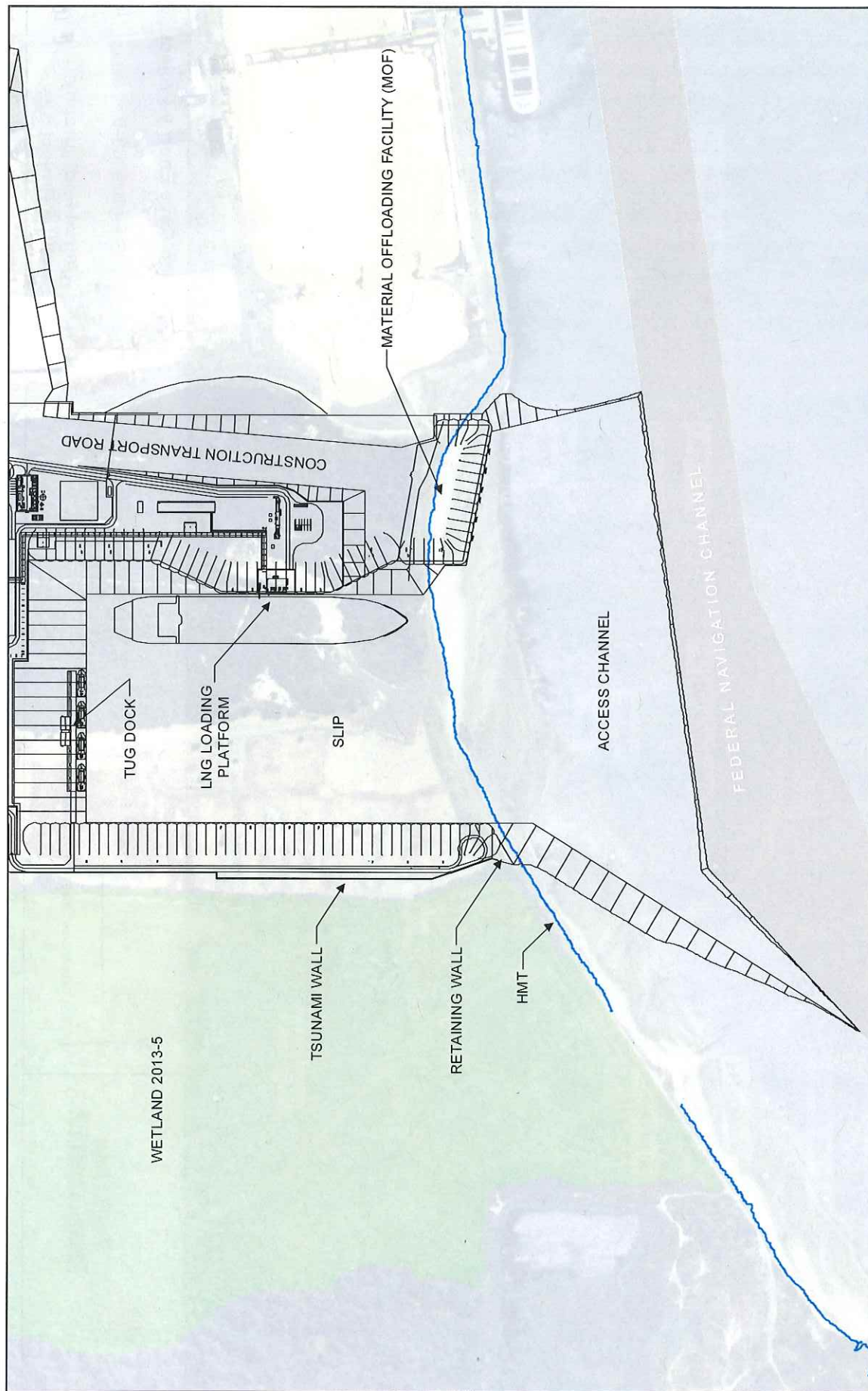
Figure 1.1-1

Project Location Map






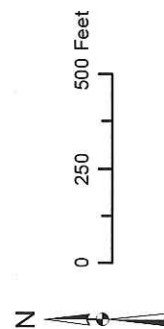
**Jordan Cove
Energy Project, L.P.**

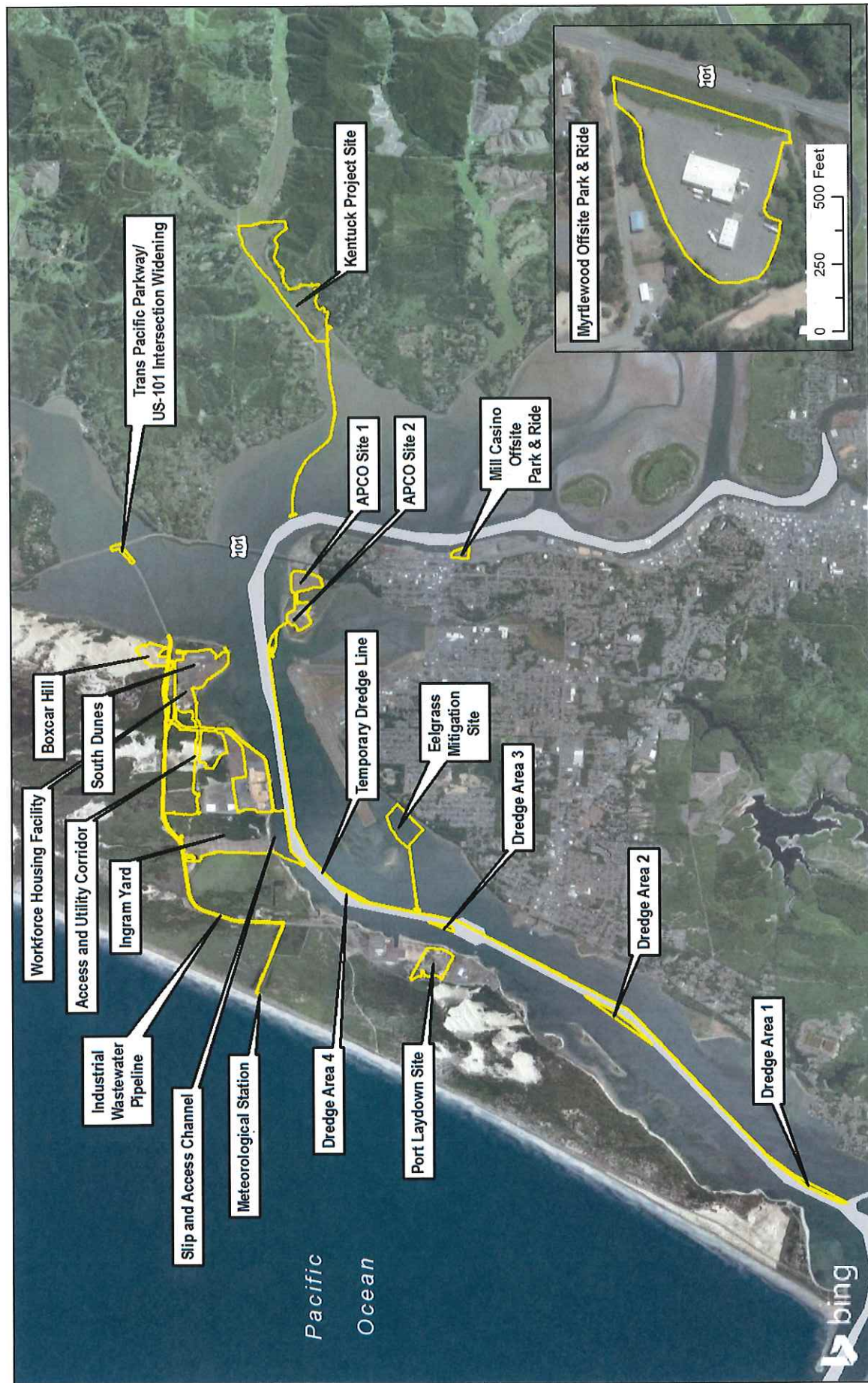




Jordan Cove Energy Project
Figure 1.3-5
Plot Plan of Marine Facilities

 Federal Navigation Channel
 Highest Measured Tide (HMT) (10.26 ft NAVD88)
 Delineated Wetland

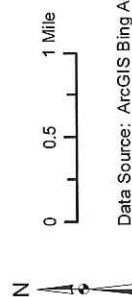
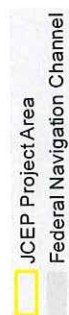




Jordan Cove Energy Project

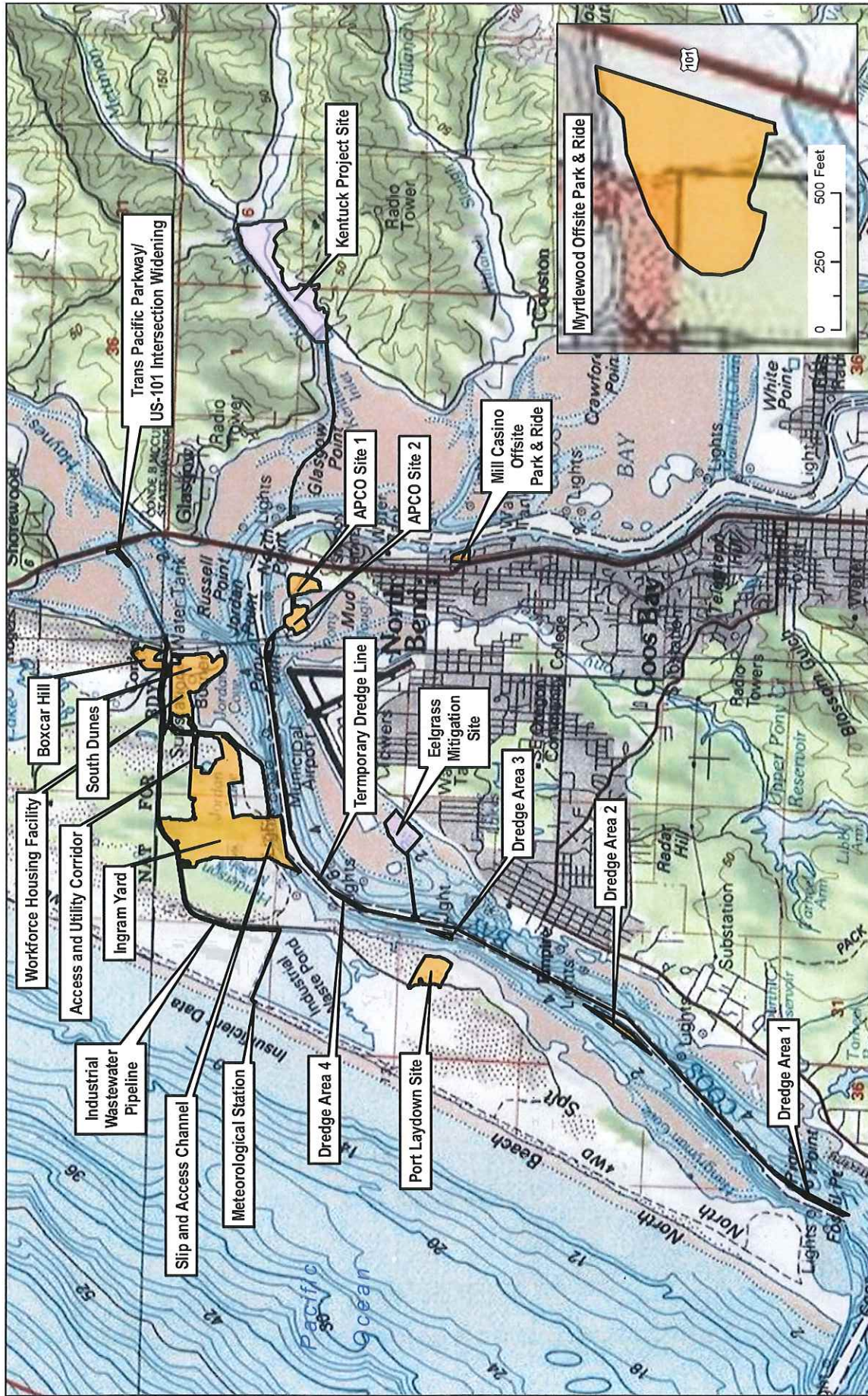
Figure 1.3-9

Aerial Photography
of the Project Site



Data Source: ArcGIS Bing Aerial Imagery



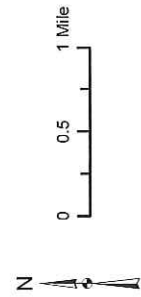


Jordan Cove Energy Project

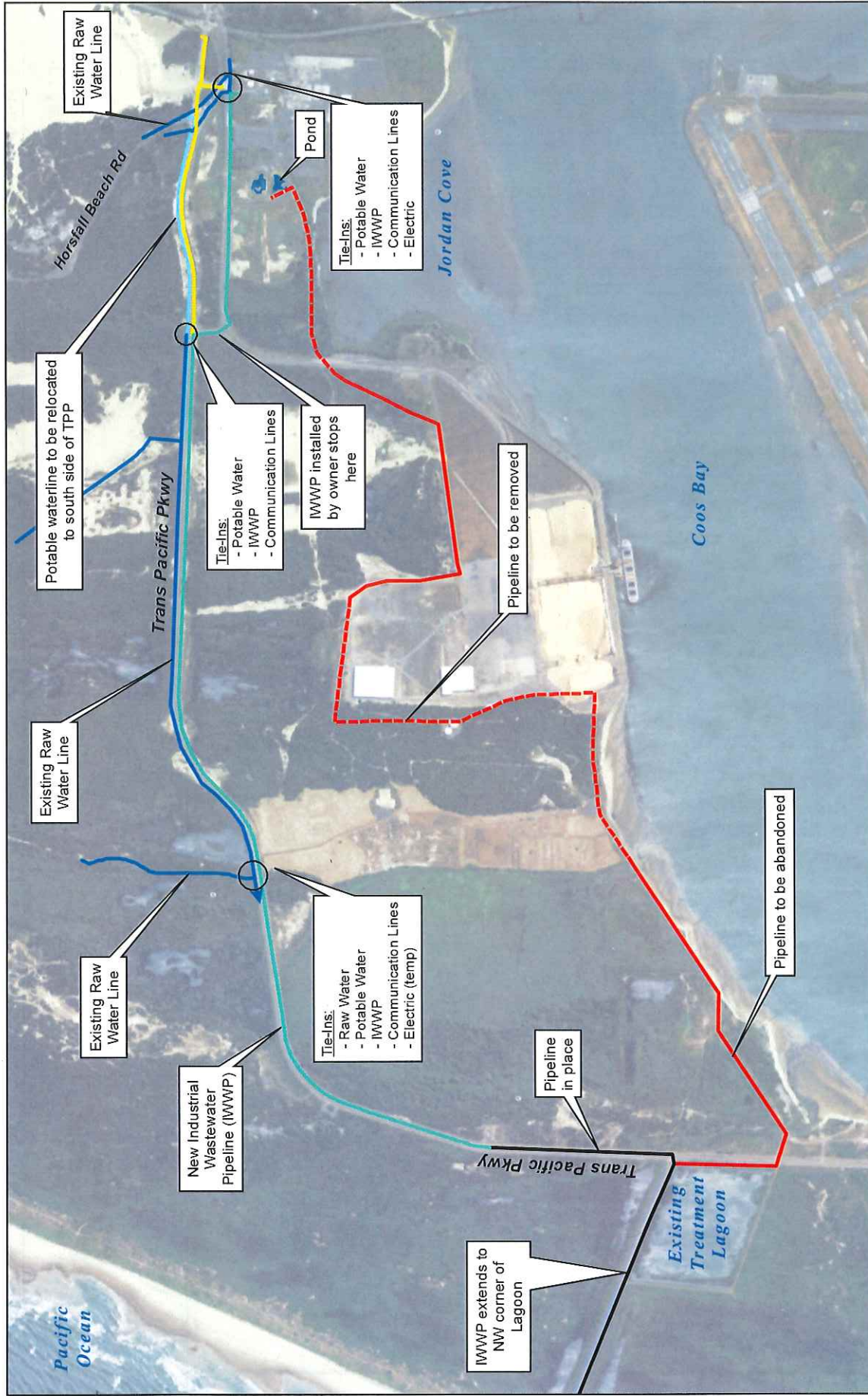
Figure 1.3-10

USGS Topographic Map
of the Project Site

JCEP Project Area
Mitigation Site



Jordan Cove
Energy Project, L.P.



Jordan Cove Energy Project

Figure 1.4-1

Industrial Wastewater Pipeline, Water Pipelines Relocation and Utility Tie-Ins

Exhibit 3

Page 2 of 2

Legend:

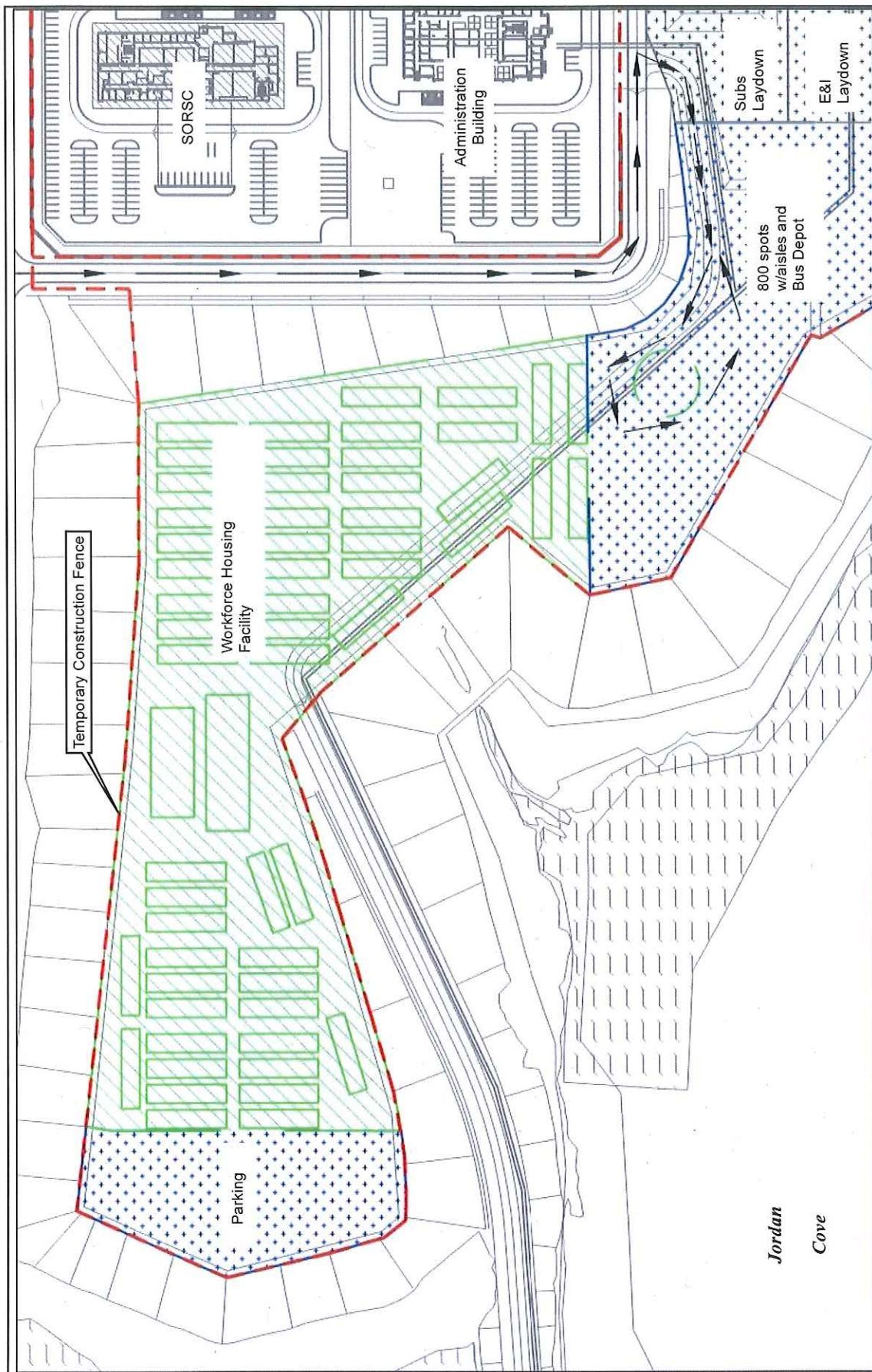
- New Industrial Wastewater Pipeline (IWWP)
- Existing Potable Water Line
- Relocated Potable Water Line
- Existing IWWP
- Pipeline to be Removed
- Existing Raw Water Line
- Pipeline to be Abandoned

Scale:

0 0.1 0.2 Miles

North Arrow:

N

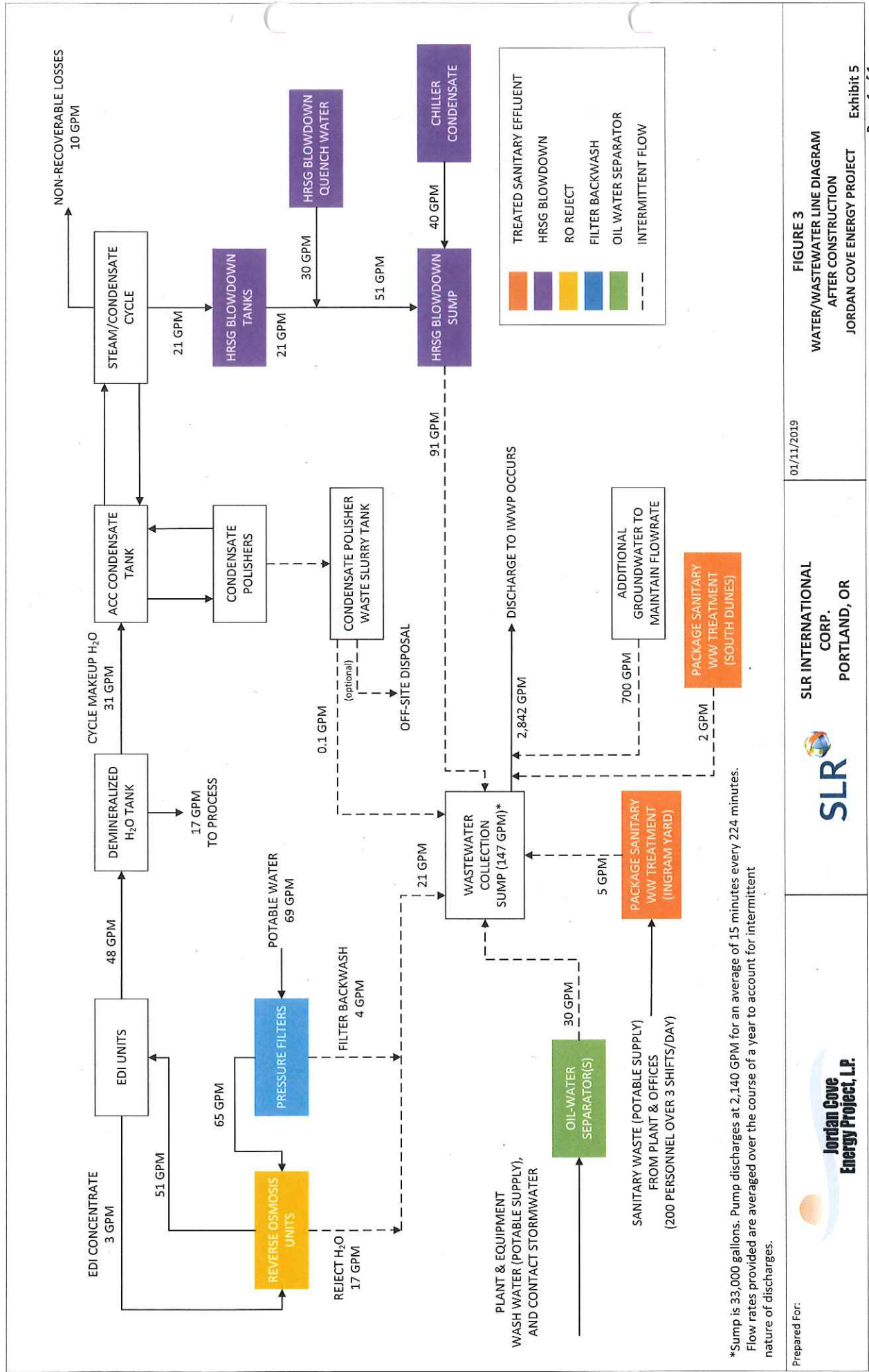


- Workforce Housing
- Temporary Construction Fence
- Parking
- Laydown Area

Jordan Cove Energy Project

Figure 1.5-8

Worker's Camp Layout



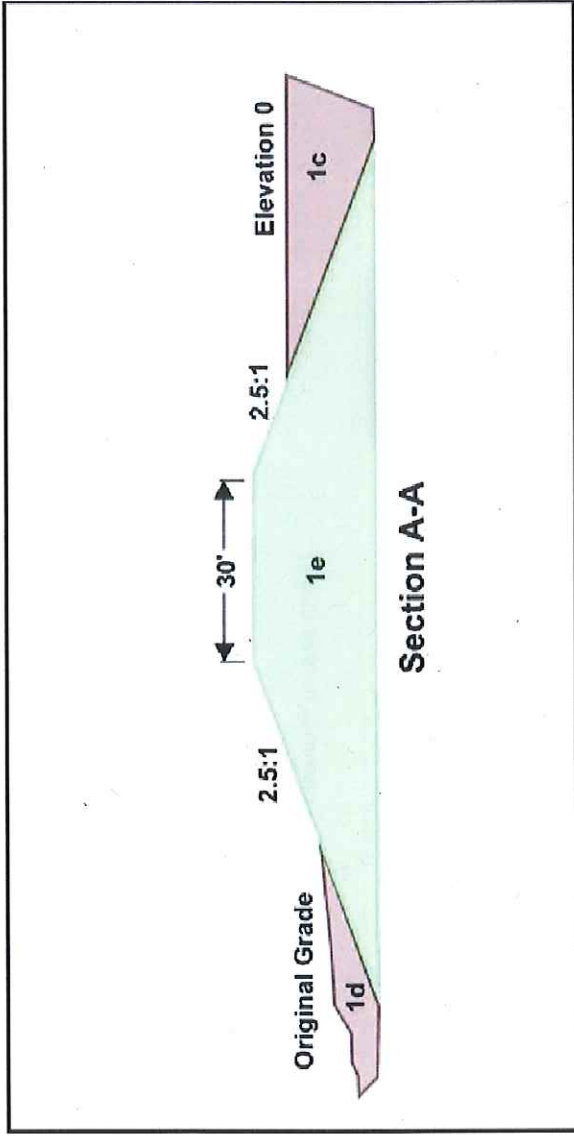
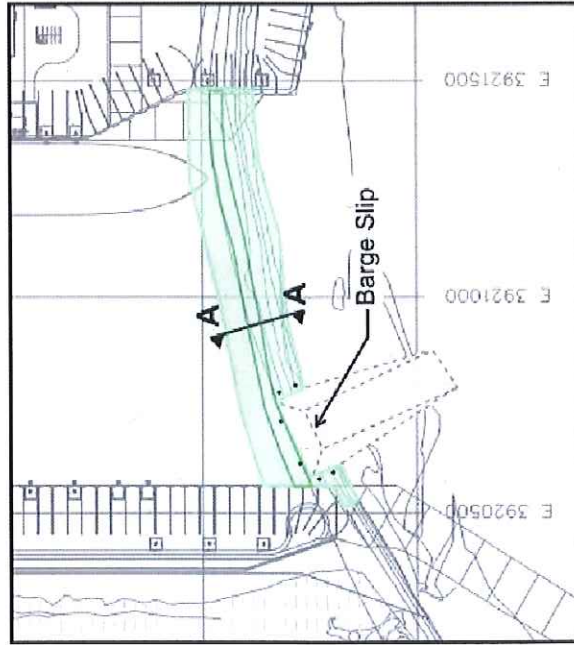
Prepared For:



SLR INTERNATIONAL
CORP.
PORTLAND, OR

01/11/2019

FIGURE 3
WATER/WASTEWATER LINE DIAGRAM
AFTER CONSTRUCTION
JORDAN COVE ENERGY PROJECT



NOT TO SCALE

Jordan Cove Energy Project

Figure 1.5-2
Conceptual Layout of Slip
Construction Berm

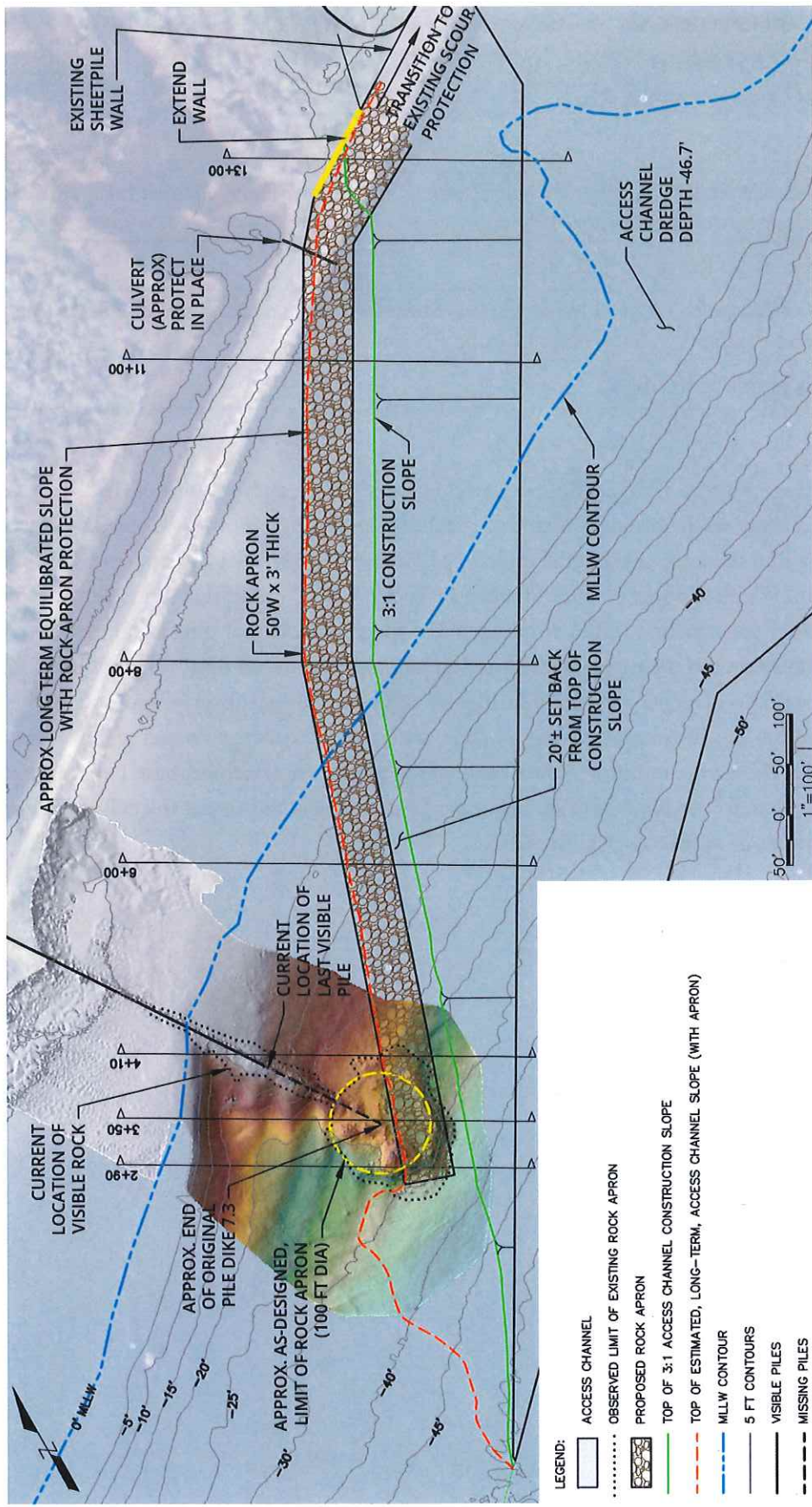


Figure 6-1. Proposed Rock Apron Plan View



HISTORICAL
RESEARCH
ASSOCIATES, INC.

To:	Natalie Eades, Manager, Environment, Jordan Cove Energy Project, LP and Pacific Connector Gas Pipeline, LP
From:	Emily K. Ragsdale, MA, RPA
Subject:	CS-26 Archaeological Investigations Summary, Jordan Cove Liquefied Natural Gas Terminal and Pacific Connector Gas Pipeline Project
Date:	November 16, 2018

Jordan Cove Energy Project, LP (JCEP) contracted Historical Research Associates, Inc. (HRA) to conduct a survey on Jordan Point to determine if archaeological site CS-26 shown on the Coos Bay Shoreland Values map is present within the area of potential effects (APE) for the proposed Jordan Cove Liquefied Natural Gas Terminal and Pacific Connector Gas Pipeline Project (Project) and if this reported resource would be impacted by project construction. HRA conducted site-specific background research, reviewed the results of excavations completed with the mapped site location, and, in September of 2018, completed a pedestrian survey. HRA found no evidence of CS-26 during the survey or in the subsurface investigations. If the site exists, it is not within the Project APE. As such, it is not expected that the Project will have any adverse impacts to CS-26. Therefore, in our best professional judgment, we conclude, based upon the information reviewed to date, that no modifications are necessary to the Project to protect the cultural, historical, and archaeological values of archaeological site CS-26.



HISTORICAL
RESEARCH
ASSOCIATES, INC.

Emily K. Ragsdale

Senior Archaeologist

SUMMARY OF EXPERIENCE

Ms. Ragsdale is the Portland HRA office's lead archaeologist and is responsible for project implementation and supervision. She acts as project manager, principal investigator, and/or quality control on a wide variety of projects. Ms. Ragsdale's experience includes prehistoric and historic archaeological research, survey, evaluation, and data recovery; archaeological monitoring, monitoring plans, and inadvertent discovery plans; agency and tribal consultation; GIS data management; Historic Properties Management Plans (HPMPs); and National Register of Historic Places (NRHP) eligibility documentation and recommendations. Ms. Ragsdale has worked for HRA for 12 years and has authored, prepared, and/or edited over one hundred technical reports.

EDUCATION

MA, Anthropology, 2005, Northern Arizona University
BA, Anthropology, 2001, University of Nevada

PROFESSIONAL REGISTRATION AND CERTIFICATIONS

Register of Professional Archaeologists, since 2006

PROFESSIONAL AFFILIATIONS

Society for American Archaeology, since 2003
Association of Oregon Archaeologists, since 2015
Association of Washington Archaeologists, since 2015

RELEVANT EXPERIENCE – CULTURAL RESOURCES MANAGEMENT

Pacific Connector Natural Gas Pipeline, Southern Oregon

04/2006 - ongoing

Since 2013, Ms. Ragsdale has acted as the Project Manager for a 232-mile proposed natural gas pipeline that crosses Coos, Douglas, Jackson, and Klamath Counties in southwestern Oregon.

Ms. Ragsdale manages the budget and provides project oversight and quality control on deliverables. Prior to this time she worked on the project in the capacity as Project Archaeologist, directing field crews, securing permits, coordinating with tribes and agencies, and authoring reports.

BPA John Day-Big Eddy No. 1 Re-Conductoring Project Cultural Resource Monitoring, Sherman and Wasco Counties ***09/2017 - ongoing***

Senior Archaeologist for archaeological monitoring of the construction of Bonneville Power Administration's re-conductoring project. The project involved monitoring and coordination of construction crews in order to ensure cultural resources were not impacted during construction activities.

Site Treatment and Monitoring at Frain Ranch ***06/2017 - ongoing***

Senior Archaeologist for a project to assist PacifiCorp with the management and resolution of damage caused by vandalism to features at a precontact archaeological site. Ms. Ragsdale and team conducted background research, secured a permit, completed a field visit to assess the damage, produced a list of potential treatment plans for the site, assisted in coordination with the State Historic Preservation Office, worked with a subcontractor to completed 3D artifact modeling, and conducted monitoring of the site treatment.

Cultural Resource Investigations for the John Day-Big Eddy Re-Conductoring Project, Wasco and Sherman Counties, Oregon. ***11/2016 - ongoing***

Senior Archaeologist for cultural resource investigations for Bonneville Power Administration's re-conductoring project. Investigations included background research, field survey, and evaluation of historic aboveground structures. The HRA team also conducted archaeological testing and evaluation of one site in the area of potential effects and made recommendations regarding project effects.

Cultural Resources Inventory for the Swan Lake North Pumped Storage Project, Klamath County, Oregon ***01/2015 - ongoing***

Senior Archaeologist for the 2015-2017 cultural resource investigations for the pumped storage project in support of a permit application with the Federal Energy Regulatory Commission. During the 2015 studies, Ms. Ragsdale and team completed additional background research, conducted a survey of the pumped storage facilities, worked with Dr. Douglas Deur to complete ethnographic studies, and produced a report. The report included a recommended area of potential effects, a discussion of potential project effects to resources that could be eligible for the National Register of Historic Places, and a Historic Properties Management Plan. In 2017, HRA completed National Register of Historic Places evaluations and/or project effects assessments for 22 archaeological and architectural resources. The project required coordination with multiple agencies, including the Bureau of Land Management, the Klamath Tribes, the Oregon Department of State Lands, and the Bureau of Reclamation.

Historic Properties Management Plan Implementation for the North Umpqua Hydroelectric Project (FERC Project No. P-1927), Douglas County, Oregon ***08/2013 - ongoing***

Senior Archaeologist for ongoing support to the PacifiCorp Cultural Resource Coordinator. Under Ms. Ragsdale's supervision, HRA's work has included conducting background and document research; providing desktop archaeological and historic above ground reviews for fast-track operations and maintenance activities; developing research designs and studies following the guidelines of the National Historic Preservation Act, the State Historic

Preservation Office, the United States Forest Service, and the Bureau of Land Management; facilitating consultation with the agencies and tribes; conveying and advising on regulatory legislation and agency policies; providing PacifiCorp staff training; obtaining survey and excavation permits; completing pedestrian and subsurface field surveys to identify cultural resources; communicating and working with tribal monitors; conducting archaeological excavations to provide determinations of eligibility and determinations of project effects to historic properties; developing monitoring plans and completing construction monitoring; providing emergency monitoring services; collecting, analyzing, managing, and producing GIS data; providing GIS-based maps and GIS support; collecting, processing, analyzing, and curating archaeological samples and artifacts; and writing and producing survey, excavation, monitoring, and evaluation reports. Ms. Ragsdale also assisted in developing a revised HPMP for the project, which included attending stakeholder meetings, presenting recommendations for revisions, negotiating with agencies, revising and developing an Area of Potential Effect, and planning strategically for future HPMP implementation in terms of reviewing PacifiCorp activities for potential effects to historic properties, executing the annual monitoring program, and completing determinations of eligibility.

Cultural Resource Services for the Access Road Upgrades Project, Multiple Counties, Oregon and Washington **02/2016 - 08/2018**

Senior Archaeologist for investigations conducted in nine districts for Bonneville Power Administration's access road project. HRA worked on the North Team and drafted consultation letters, reviewed background records, completed field surveys, and produced 14 separate reports. Work was closely coordinated with BPA cultural staff and involved two SHPOs and multiple public land managers.

Cultural Resource Investigation for the Olympia-Grand Coulee No. 1 Insulator Replacement Project, Phase II and III, Kittitas and King Counties, Washington **12/2016 - 5/2018**

Senior Archaeologist for investigations for a Bonneville Power Administration project to replace insulators on 277 structures along a 60-mile stretch of transmission line. Ms. Ragsdale and team conducted literature review, secured permits with the United States Forest Service, surveyed 383 acres, identified 17 resources, and authored a report that included National Register of Historic Places evaluations (or preliminary evaluations) and project effects assessments.

Cultural Resource Investigations for the Kingsley Reservoir Project, Hood River County, Oregon **04/2017 - 01/2018**

Senior Archaeologist for a project entailing raising the height of the Upper Green Point dam and subsequently expanding the breadth of the reservoir. Ms. Ragsdale oversaw archaeological investigations, including permitting, survey, and reporting. She also coordinated with HRA's architectural history staff to evaluate the dam and assess project effects to historic-era resources.

Cultural Resource Investigations for the Fox Creek Mid-Reach 10 Habitat Restoration Project, Grant County, Oregon. **07/2017 - 11/2017**

Senior Archaeologist for cultural resource investigations for a project of the Bonneville Power Administration and the Confederated Tribes of the Warm Springs Reservation to restore natural riverine function and habitat complexity in Fox Creek, a tributary of the North Fork of the John Day River. Ms. Ragsdale and team completed background research, field survey, and technical reporting.

***Cultural Resource Inventory for the La Pine to State Park Transmission Line Project,
Deschutes County, Oregon*** **03/2016 - 07/2017**

Senior Archaeologist for cultural resource investigations for a new 8.88 mile long transmission line proposed by Midstate Electric Cooperative. The project is in central Oregon and runs parallel to the Bonneville Power Administration's Pilot Butte-La Pine No. 1 Transmission Line. HRA conducted background research, drafted research designs, obtained permits (from the Oregon State Historic Preservation Office, Bureau of Land Management, and United States Forest Service), completed survey and Phase II testing field investigations, conducted laboratory analysis, and drafted a report of the findings.

***Cultural Resource Investigations for the Pacific Direct Current Intertie (PDCI) Upgrade Project,
Lake, Jefferson, Crook, Deschutes, and Wasco Counties, Oregon*** **07/2012 - 04/2017**

Senior Archaeologist/Project Manager for cultural resources investigations for the PDCI Project, which consisted of upgrades to a 264 mile long segment of the Celilo-Sylmar No. 1 transmission line in central Oregon. Work included literature review, permitting, intensive survey, identification of high probability areas and subsurface testing, resource recordation, site delineation, evaluation testing of 22 sites, laboratory analysis, reporting, site forms completion, curation, and archaeological construction monitoring. The goal of the investigations was to identify resources eligible for the National Register and to assess potential project effects. Throughout the life of the project, HRA coordinated work and the subsequent results with the BPA, multiple federal and non-federal land managers, various private land owners, the State Historic Preservation Office, and tribal representatives.

***Cultural Resources Monitoring of Trenching near the John Day Substation, Sherman County,
Oregon*** **02/2017 - 03/2017**

Senior Archaeologist for archaeological monitoring of Pacific Power's excavation of 1000 feet of trenching in order to relocate electrical transmission lines underground. Ms. Ragsdale coordinated the monitoring and provided quality control for a monitoring memo.

***Cultural Resource Investigations for the Kitson Springs Slide Repair at MP 2.6 Project, Lane
County, Oregon*** **07/2016 - 09/2016**

Senior Archaeologist for cultural resource investigations for a project involving evaluation of a slide on Kitson Springs Road (FS Road 023) and determining a solution to dewater, stabilize, and repair the slide area. HRA worked with Lane County, the Willamette National Forest, and the Western Federal Lands Highway Division of the Federal Highway Administration. The investigations involved background research, a pedestrian survey, and technical reporting.

Cultural Resource Inventory for the Graham Restoration Project, Lane County, Oregon **05/2016 - 08/2016**

Senior Archaeologist for cultural resource studies for a U.S. Fish and Wildlife project to restore 56 acres of oak forest, wetland prairie, and wetland. HRA conducted archival research, completed a pedestrian survey, made recommendations for possible future archaeological work, and prepared a report with the findings.

***Cultural Resource Inventory for the Little Sheep Creek Fish Ladder Extension Project,
Wallowa County, Oregon*** **04/2016 - 06/2016**

Senior archaeologist for a cultural resource inventory for a proposed project to restore fish passage at a tan acclimation facility. HRA conducted background research, an archaeological

pedestrian survey, and excavated shovel probes within the area of potential effects, and produced a technical report.

Cultural Resource Inventory for the Ringold Russian Knapweek Spray, Burn, and Seed Project, Franklin County, Washington
12/2015 - 02/2016

Senior Archaeologist for cultural resource studies for a U.S. Fish and Wildlife project to restore 291 acres of sagebrush steppe habitat within the Hanford Reach National Monument. Ms. Ragsdale and team conducted archival research, completed a pedestrian survey, recorded archaeological resources, and prepared a report with the findings.

Cultural Resource Inventory for the Veneta Prairie Restoration Project, Lane County, Oregon
08/2015 - 11/2015

Senior Archaeologist for cultural resource studies for a U.S. Fish and Wildlife project to restore 25 acres of habitat and wetland. Ms. Ragsdale and team conducted archival research and a pedestrian survey, recommended possible future archaeological work, and prepared a report with the findings.

Cultural Resource Inventory for the Kingzett Restoration Project, Lane County, Oregon
05/2015 - 09/2015

Senior Archaeologist for cultural resource studies for a U.S. Fish and Wildlife project to restore 150 acres of habitat and wetland. Ms. Ragsdale and team conducted archival research and a pedestrian survey, recommended possible future archaeological work, and prepared a report with the findings.

Cultural Resource Inventory for the Bird Haven Restoration Project, Linn County, Oregon
05/2015 - 09/2015

Senior Archaeologist for cultural resource studies for a U.S. Fish and Wildlife project to restore 150 acres of habitat and wetland. Ms. Ragsdale and team conducted archival research and a pedestrian survey, recommended possible future archaeological work, and prepared a report with the findings.

Cultural Resource Inventory for the Kamkaun Springs Restoration Project, Klamath County, Oregon
02/2015 - 09/2015

Senior Archaeologist for cultural resource studies for a U.S. Fish and Wildlife project to restore 17 acres of habitat and wetland. Ms. Ragsdale and team conducted archival research and a pedestrian survey, recorded a previously identified site, recommended possible future archaeological work, and prepared a report with the findings.

Cultural Resource Services for the FY14 Redmond District Wood Pole Replacement Project, Oregon and California
03/2014 - 06/2015

Permit Coordinator for a cultural resource inventory for proposed pole replacement of towers along nine separate transmission lines extending from just south of Madras, Oregon, to Alturas, California. HRA conducted background research, identified probability areas, performed a field survey for archaeological resources, evaluated the transmission lines, and produced 10 separate reports.

Cultural Resource Inventory for the Willamette Bluffs Restoration Project, Polk County, Oregon
02/2015 - 06/2015

Senior Archaeologist for a U.S. Fish and Wildlife project to restore 17 acres of habitat and wetland. Ms. Ragsdale and team conducted archival research and a pedestrian survey, recorded

a several archaeological sites, recommended possible future archaeological work, and prepared a report with the findings.

Lewis River Historic Properties Management Plan Implementation for the Swift No. 1 (FERC No. 2111), Yale (FERC No. 2071) and Merwin (FERC No. 935) Hydroelectric Projects, Clark, Skamania, and Cowlitz Counties, Washington **11/2006 - 05/2015**

Senior/Project Archaeologist for implementation tasks including PacifiCorp activity review; background research; archaeological and historical architectural surveys along project transmission lines, reservoir drawdown zones, timber harvest areas, and project facilities; GIS data management and mapping; site patrolling and monitoring plans; regulatory legislation and agency policies review; a damage assessment and mitigation planning for a vandalized site; tribal, State Historic Preservation Office, and United States Forest Service consultation; management of specific sites of concern to tribes; and monitoring, survey, and annual reporting.

Cultural Resource Investigations for the Transmission Line 39 Structure 3/24 Pole Replacement Project, Douglas County, Oregon **11/2014 - 04/2015**

Senior Archaeologist for background research, field investigations, and reporting for a single pole replacement within the North Umpqua Hydroelectric Project boundary.

Cultural Resources Inventory for the Proposed Alvey-Fairview No. 1 Rebuild Project, Lane, Douglas, and Coos Counties, Oregon **01/2012 - 04/2014**

Project Archaeologist for investigation for Bonneville Power Administration's rebuild project of a 97 mile long transmission line. HRA completed background research, produced a review of the archaeology and history of the project area, conducted a pedestrian survey of the transmission line right-of-way (ROW), completed subsurface investigations at identified High Probability Areas, surveyed access roads outside the ROW, and recorded and evaluated the transmission line and four substations.

Cultural Resource Survey for the John Day Powerhouse-John Day No. 1-4 Conductor Replacement Project, Sherman County, Oregon **12/2013 - 01/2014**

Project Archaeologist for cultural resource studies for Bonneville Power Administration's line conductor replacement project on four transmission lines. Ms. Ragsdale and team completed background research, field survey, and evaluation of the transmission lines.

Archaeological Monitoring at Site 35MU24, 40 Mile Loop/Blue Lake Trail Project, Multnomah County, Oregon **07/2013 - 11/2013**

Project Archaeologist for monitoring at Site 35MU24 during construction or operation of the trail extension within Blue Lake Park.

Cultural Resources Assessment for the Bravo Bentonite Mine Project, Wasco County, Oregon **02/2013 - 11/2013**

Project Archaeologist for a cultural resources assessment for the proposed Bravo Bentonite Mine. The project occupies 765 acres of land west of the John Day River near Clarno, Oregon. It is situated entirely on land owned by the Bureau of Land Management. Working in consultation with the BLM, Ms. Ragsdale and team completed background research, conducted a pedestrian survey of the project Area of Potential Effects, and drafted a technical report.

Phase II Evaluation of Site 35DO1372 Field Investigations, North Umpqua Hydroelectric Project, Douglas County, Oregon ***03/2013 - 10/2013***

Project Archaeologist for a Phase II evaluation of Site 35DO1372 in the North Umpqua drainage for PacifiCorp. The goal of the investigation was to determine the site's NRHP eligibility and identify the potential for transmission line pole replacement and future maintenance activities to affect the resource. HRA completed field investigations, performed artifact analysis, and drafted a technical report. The results were used for appropriate future management of the site.

Cultural Resources Survey of approximately 40 miles of WRAP Route SE-2, Pasco to Clarkston, Washington ***09/2011 - 08/2013***

Project Archaeologist for archaeological field survey and treatment plans in proposed ground disturbance areas where historic properties or sensitive areas are known or anticipated in proximity to a proposed fiber optic route.

Cultural Resource Surveys at Twenty-Eight Locations in Eastern Oregon, Grant and Umatilla Counties, Oregon ***11/2012 - 07/2013***

Project Archaeologist for an archaeological survey for the Oregon Department of Fish and Wildlife for improvements to a series of fish passages in northeastern Oregon. Ms. Ragsdale and team completed background research, conducted a pedestrian and subsurface cultural resources survey, recorded various archaeological and aboveground resources, and produced a report summarizing the work and making recommendations with regards to project effects.

Phase II Evaluation of Site 35DO606 Field Investigations, North Umpqua Hydroelectric Project, Douglas County, Oregon ***05/2012 - 06/2013***

Project Archaeologist for field investigations, artifact analysis, and reporting for appropriate future management of the site, to determine the site's NRHP eligibility and identify the potential for future maintenance activities to affect this resource.

Cultural Resources Survey Table Rock Road/Swanson Creek Bridge Project, Jackson County, Oregon ***09/2012 - 05/2013***

Project Archaeologist for cultural resources assessment for a series of road improvement projects. Ms. Ragsdale and team conducted background and archival research, completed a field survey, and drafted a technical report.

Literature Review and Cultural Resources Field Survey for the Wallicut-Baker Bay Property, Columbia Land Trust Estuarine Habitat Restoration Project, Pacific County, Washington ***03/2013 - 05/2013***

Project Archaeologist for a cultural resources inventory for the Wallicut-Baker Bay Columbia Land Trust Estuarine Habitat Restoration project. The project involved dike and structure removal, invasive vegetation clearing, ditch filling, tidal channel restorations, and restoration of native plant communities on a 113 acre parcel. Ms. Ragsdale and team completed background research, conducted pedestrian and subsurface field investigations, and produced a report.

BPA Albany-Eugene Monitoring, Linn and Lane Counties, Oregon ***06/2012 - 02/2013***

Project Archaeologist for construction monitoring of eight segments of the Albany-Eugene No. 1 Transmission Line. HRA developed a monitoring plan and an unanticipated discovery plan and

monitored all ground-disturbing construction activities to look for evidence of cultural resources 50 years or older.

Archaeological Resources Field Survey for the FY13 Pilot Butte-La Pine Wood Pole Replacement Project, Deschutes, Klamath, Lake, and Jefferson Counties, Oregon

11/2012 - 01/2013

Project Archaeologist for a cultural resource inventory for proposed pole replacement on 18 structures along the Pilot Butte-La Pine No. 1 Transmission Line. The inventory was conducted for the Bonneville Power Administration to determine if historic properties eligible for inclusion in the National Register of Historic Places were present. Ms. Ragsdale and team conducted background research, identified probability areas, performed a field survey for archaeological resources, and produced a report.

Cultural Resource Inventory, Burnt Swamp Road Maintenance and Pole Replacement, Douglas County, Oregon

08/2012 - 12/2012

Project Archaeologist for background research, field investigations, and reporting for two culvert replacement locations within the North Umpqua Hydroelectric Project boundary.

Cultural Resource Inventory for the Santiam Substation Transformer Phase Separation Project, Linn County, Oregon

10/2012 - 11/2012

Project Archaeologist for a cultural resource inventory for Bonneville Power Administration's project transformer separation project. HRA conducted background research, identified probability areas, performed a field survey for archaeological resources, and assessed project impacts to the substation.

Avoidance Plan for Site 35MU24, 40 Mile Loop Trail Project, Multnomah County, Oregon

09/2011 - 11/2012

Project Archaeologist for plan to avoid adverse effects to Site 35MU24 during construction or operation of the trail extension within Blue Lake Park.

Cultural Resources Inventory of 5,200 Acres and Archaeology Site Evaluation for Fort Carson at Pinon Canyon Maneuver Site in Training Area 7 and 10, Colorado

09/2011 - 10/2012

Project Manager for cultural resource investigations on behalf of the United States Army's Installation Management Command. The Army contracted HRA and their subcontractor Alpine Archaeological Consultants to complete work at Fort Carson's Pinon Canyon Maneuver Site in Training Areas 7 and 10. HRA and Alpine surveyed 5,200 acres, completed archaeological site evaluations, and produced a report.

Cultural Resource Inventory for the Bonneville-Hood River No. 1 Pole Replacement Project, Washington County, Oregon

07/2012 - 08/2012

Project Archaeologist for investigations for Bonneville Power Administration's project to replace three transmission line structures. HRA completed background research, identified probability areas, conducted a field survey for archaeological resources, and evaluated the transmission line.

Archaeological Survey of the Cow Creek Grade Control Project, Douglas County, Oregon

05/2012 - 08/2012

Project Archaeologist for background research, archaeological survey, reporting, and consulting with the Cow Creek Band of Umpqua Tribe of Indians on the project, who requested that a tribal monitor be allowed to observe the studies.

Archaeological Survey Canyonville Hydrotest Project, Douglas County, Oregon

05/2012 - 08/2012

Project Archaeologist for archival research and field studies in order to determine whether archaeological resources were present.

2012 Cultural Resources Services for the Swan Lake Pumped Storage Project, Klamath County, Oregon and Modoc County, California

04/2012 - 08/2012

Project Archaeologist for a field survey to identify cultural resources along a proposed transmission line route for a pumped storage project.

Albany Eugene Transmission Line Rebuild Supplemental Cultural Resources Survey, Linn and Lane County, Oregon

03/2012 - 08/2012

Project Archaeologist for supplementary cultural resource investigations for the Bonneville Power Administration's (BPA) Albany-Eugene Transmission Line Rebuild Project. The investigations were conducted determine if historic properties eligible for inclusion in the National Register of Historic Places will be affected by access roads and ford crossings designed after the initial cultural resource inventory was conducted in 2010. HRA conducted a field survey for archaeological resources and produced an addendum report.

Archaeological Data Recovery at the Medhold Site (45PI728), Old Madigan Hospital, Joint Base Lewis-McChord, Washington

08/2011 - 08/2012

Project Archaeologist for data recovery investigations at the Medhold Site to mitigate adverse effects associated with destruction of a National Register eligible prehistoric/historic site located at the Old Madigan Hospital, including public outreach tours.

Archaeological Investigations for the Lewis River 2012 Timber Harvest Surveys (Unit 10, 15, and 25)

05/2012 - 06/2012

Project Archaeologist for archaeological investigations for PacifiCorp's 2012 Lewis River timber harvest projects, located in units 10, 15, and 25. HRA completed three cultural review checklists, conducted field investigations, and produced a report.

Cultural Resources Assessment of Routes SW-2, SW-3, and SC-1 of Round One of the Washington Rural Access Project, Cowlitz and Clark Counties, Washington

03/2011 - 06/2012

Project Archaeologist for archaeological field survey and treatment plans in proposed ground disturbance areas where historic properties or sensitive areas are known or anticipated in proximity to three proposed fiber optic routes.

Cultural Resource Inventory for the FY12 Redmond District Wood Pole Replacement Project, Deschutes County, Oregon

01/2012 - 06/2012

Project Archaeologist for an inventory for Bonneville Power Administration's project to replace 12 structures along two transmission lines. Ms. Ragsdale conducted background research, produced a general review of the archaeology and history of the project area, and conducted a cultural resources survey.

Cultural Resource Inventory for the Keeler-Forest Grove No. 1 14-Pole Replacement Project, Washington County, Oregon

05/2012 - 05/2012

Project Archaeologist for an inventory for Bonneville Power Administration's project to replace 14 transmission line structures. HRA conducted background research, produced a review of the

archaeology and history of the project area, completed a field survey, and recorded and evaluated the transmission line.

Fort Lewis Archaeological Site Monitoring Joint Base Lewis-McChord Task 3, Washington
08/2011 - 04/2012

Project Archaeologist for archaeological monitoring of 39 historic and prehistoric sites to assess current conditions and record any changes to the sites since the last time the site was visited (especially changes due to vandalism, military training or natural erosion).

Willamette Greenway Trail: Chimney Park - Pier Park Pedestrian Bridge Cultural Resources Investigations
04/2011 - 03/2012

Project Archaeologist for cultural resources assessment including obtaining a permit from the Oregon SHPO, archaeological field investigations, technical reporting, and Historical Resources (Section 106) Documentation.

Archaeological Survey for the Swift FSC Project at Swift Camp, Skamania County, Washington
12/2010 - 03/2012

Project Archaeologist for presence/absence testing for archaeological resources and assisting PacifiCorp with agency and tribal consultation to fulfill requirements of the Lewis River Historic Properties Management Plan as part of efforts to improve fish passage in the river.

Cultural Resource Inventory for the Pearl-Marion No. 1 Line Structure 6/2 Relocation Project, Clackamas County, Oregon
11/2011 - 02/2012

Project Archaeologist for investigations for Bonneville Power Administration's project to relocate a transmission line structure. Ms. Ragsdale and team completed background research, conducted a field survey, and evaluated the transmission line.

Historic Trolley Line Investigations, City of Astoria, Clatsop County, Oregon
09/2011 - 01/2012

Project Archaeologist for research and recording portions of two historic trolley lines inadvertently discovered during excavations for a water pipe installation on Marine Drive and Bond Street.

Valsetz Water Storage Project Desktop Analysis, Polk County, Oregon ***09/2011 - 01/2012***

Project Archaeologist for SHPO records review, historic map review, and a summary report on cultural resources for a potential water storage site near the coastal mountain divide in the Valsetz basin on the Siletz River.

Baseline Wind Energy Project Environmental Impacts Assessment, Gilliam County, Oregon
10/2010 - 01/2012

Project Archaeologist for cultural resources investigations in support of project environmental review by the Oregon Energy Facility Siting Council for a 200-500 MW wind energy project. Work included archival and historic map research and archaeological survey of approximately 20,000 acres of project facilities.

Archaeological Site Verification for Fiscal Year 2010 on Prehistoric and Historic Sites Located On Joint Base Lewis-McChord, Washington
10/2010 - 01/2012

Project Archaeologist for examination of 55 sites in 13 training areas, including detailed historic research to determine the site histories of the resources followed by field investigations to determine the extent of archaeological deposits and site integrity.

Cultural Resources Field Survey for the Tri-Cities Maintenance Headquarters Project, Franklin County, Washington **11/2011 - 12/2011**

Project Archaeologist for an inventory for Bonneville Power Administration's maintenance headquarters facility and storage yard development project. Ms. Ragsdale and team conducted background research, produced a general review of the archaeology and history of the project area, conducted a cultural resources survey, and documented one transmission line.

Archaeological Investigation of the Spokane Line Replacement Project, Spokane County, Washington **03/2011 - 09/2011**

Project Archaeologist for research, tribal and agency consultation, field investigations, development of FERC Resource Report 4, and a technical report that meet DAHP and FERC guidelines for cultural resources surveys.

Supplemental Cultural Resources Survey for the McAllister Area Project, City of Olympia, Thurston County, WA **06/2011 - 08/2011**

Project Archaeologist for cultural resources assessment for improvements to the McAllister Wellfield, including supplemental background research, field investigations, and reporting.

Cultural Resource Inventory for the FY11 Redmond District Critical Wood Pole Replacement Project, Wasco and Deschutes Counties, Oregon **04/2011 - 08/2011**

Project Archaeologist for an inventory for Bonneville Power Administration's project to replace four structures along two transmission lines. Ms. Ragsdale and team completed background research, probability area identification, field survey, and recordation of the two lines to determine if historic properties were present that could be affected by the project.

Abernathy Creek Restoration Project, Cultural Resources Assessment, Cowlitz County, Washington **03/2011 - 07/2011**

Project Archaeologist for historical map research and identifying an APE for archaeological resources, and survey and shovel probe testing to identify archaeological deposits in a stream restoration area.

Joint Base Lewis-McChord Probability Model Archaeological Survey, Pierce and Thurston Counties, Washington **07/2009 - 07/2011**

Project Archaeologist for archaeological survey conducted to test a probability model developed to predict probable locations of prehistoric sites.

Cultural Resources Assessment of Route SW-1 of Round One of the Washington Rural Access Project, Pacific County, Washington **02/2011 - 06/2011**

Project Archaeologist for archaeological field survey and treatment plans in proposed ground disturbance areas where historic properties or sensitive areas are known or anticipated in proximity to a proposed fiber optic route.

Archaeological Inventory Survey on Joint Base Lewis-McChord, Washington **10/2010 - 06/2011**

Project Archaeologist for archaeological survey of 150 acres to identify cultural resources within remaining undeveloped portions of the Cantonment area and adjacent training areas.

Data Recovery Plan for Site 35D058, Douglas County, Oregon **12/2010 - 03/2011**

Project Archaeologist for data recovery plan to mitigate for adverse effects within the North Umpqua Hydroelectric Project associated with pole replacement and road improvements.

Supplemental Archaeological Survey for the Port of Tillamook Bay Alternate Projects, City of Tillamook, Tillamook County, Oregon

09/2010 - 11/2010

Project Archaeologist for background research, SHPO and Tribal consultation, field investigation, and a technical report to aid in the development of a series of industrial projects on port property.

Cultural Resources Investigation of the Commercial Street Bridge, City of Salem, Marion County, Oregon

07/2010 - 11/2010

Project Archaeologist for background research and field investigations to determine whether archaeological resources are located in the Area of Potential Effect for replacement of a bridge built in 1928 over Pringle Creek.

Cultural Resource Inventory Proposed Albany-Eugene Transmission Line Rebuild Project, Linn and Lane Counties, Oregon

04/2010 - 11/2010

Project Archaeologist for cultural resource investigations for Bonneville Power Administration's proposed rebuild project. HRA conducted background research, produced a general review of the archaeology and history of the project area, conducted a cultural resources survey, and recorded and evaluated the transmission line, two substations, and a railroad.

Archaeological Investigations, Barkley Springs Habitat Enhancement Project, Klamath County, Oregon

05/2010 - 10/2010

Project Archaeologist for background research to identify the land use history of the project area, limited field investigations to document the presence or absence of archaeological sites, and working closely with the Klamath Tribe to ensure that their concerns were met throughout the project.

Cultural Resource Inventory Satsop-Aberdeen No. 2 Critical Tower Replacement Project, Grays Harbor County, Washington

06/2010 - 08/2010

Project Archaeologist for an archaeological survey for Bonneville Power Administration's project to replace on 20 transmission line structures. Ms. Ragsdale and team conducted background research, completed a field survey, and evaluated the transmission line.

Archaeological Investigation of the Wenatchee Facilities Modifications Project, Spokane Replacement, Spokane County, Washington

05/2010 - 08/2010

Project Archaeologist for cultural resource investigations for a pipe replacement project. The project involved replacement of approximately 1000 meters of pipeline and use of associated work areas. HRA performed background research and conducted archaeological survey to determine whether any archaeological resources were present within the project area.

Archaeological Investigation of the Wenatchee Facilities Modifications Project, Plymouth to Zillah and Yakima to Wenatchee, Yakima, Benton, Kittitas, and Chelan Counties, Washington

02/2010 - 08/2010

Project Archaeologist for cultural resource investigations for a series of pipeline improvements involving smart pigging and valve replacement.

Archaeological Site Verification on Prehistoric and Historic Sites Located on Fort Lewis, Washington

07/2009 - 08/2010

Project Archaeologist for fiscal year 2009 site verification studies including examination of 55 sites in 15 training areas to determine the extent of archaeological deposits and site integrity.

Cultural Resource Inventory near Gray Army Airfield at Fort Lewis, Pierce County, Washington
10/2007 - 08/2010

Research Archaeologist for six cultural resource inventory tasks near Gray Army Airfield. Principal Investigator for Task 2 site verification investigations at 55 prehistoric and historic sites to relocate, verify, record and perform limited subsurface testing on previously identified archaeological sites not currently on file with the Washington Department of Archaeology and Historic Preservation. When possible, National Register Places recommendations for the sites were verified.

Archaeological Inventory Survey at Fort Lewis, Washington
07/2009 - 05/2010

Project Archaeologist for identification of cultural resources within remaining undeveloped portions of the Cantonment area in association with anticipated growth of the base under the Army's "Grow the Army" program.

Archaeological Testing for National Register Eligibility on Twelve Site Locations, Fort Lewis, Washington
07/2009 - 04/2010

Project Archaeologist for Phase II evaluation of 12 historic and prehistoric archaeological sites to determine whether these resources are eligible for the National Register of Historic Places, in order to protect them from future disturbances associated with military training.

Cultural Resources Assessment for the Blue Lake Park Nature and Golf Learning Center for Metro, City of Portland, Oregon
02/2009 - 08/2009

Project Archaeologist for cultural resources assessment to determine whether archaeological resources were present in the proposed development area.

Fort Lewis Site Verification, Pierce County, Washington
07/2008 - 06/2009

Project Archaeologist for verification activities at 41 previously identified sites to re-identify resources, establish whether archaeological remains were present, and make recommendations concerning the eligibility of those resources for the National Register of Historic Places.

Second Phase of Bradwood Landing Pipeline Survey, Northwestern Oregon/Southwestern Washington
05/2006 - 05/2009

Field Archaeologist for Phase II cultural resources studies. The project included a critical issues assessment, a sensitivity study for designing a sampling strategy, and all cultural resources studies associated with completion of Section 106 and FERC requirements for the project.

Phase I Archaeological Survey for a 1-mile Looping Project on the Olympia Gas Line, Thurston County, Washington
03/2008 - 03/2009

Research Archaeologist for an archaeological survey for a 1-mile looping project along the Olympia Gas pipeline. The project involved coordination with three tribes and Fort Lewis, on which a portion of the project was located. HRA produced a report which including an abbreviated cultural background for the area, results of the project, and recommendations for additional studies.

KXL Pipeline Project, Eastern Texas
06/2008 - 12/2008

Project Archaeologist for cultural resources investigations in 13 counties for a proposed 36-inch crude oil pipe running through eastern Texas.

Christophe Harbour Archaeological Investigations at Sites 1, 2, and 3, St. Kitts, West Indies
11/2008

Project Archaeologist for archaeological investigations at Sites 1 and 2, slave villages with associated industrial complexes, and Site 3, a prehistoric scatter and 18th century occupation, involving excavated test units and backhoe stripping of larger areas for identification of structures and features.

Yakima County Solid Waste Programs Cheyne Landfill Expansion Project Cultural Resources Assessment, Yakima County, Washington
08/2007 - 08/2008

Research Archaeologist for development of a sensitivity map for the potential occurrence of archaeological resources, followed by field survey and shovel probes to determine whether any archaeological resources were present.

Archaeological Survey for the Hawks Prairie Project, Pierce County, Washington
10/2007 - 05/2008

Research Archaeologist for pedestrian survey of 43 acres slated for a housing development.

Beaverton CarMax Cultural Resources Study, Oregon
02/2008 - 04/2008

Research Archaeologist for a cultural resources study for a CarMax automobile dealership involving pedestrian survey and background research.

Jackson Prairie FERC Permit Variance Survey Lewis County, Washington
08/2007 - 01/2008

Research Archaeologist for archaeological survey of a 20-acre Storage Facility work site for meeting Section 106 compliance requirements of a FERC Permit Variance Survey.

Kelso Airport survey and assessment, Cowlitz County, Washington
09/2006 - 06/2007

Research Archaeologist for reconnaissance-level cultural resource assessment to determine whether proposed airport improvements have the potential to affect cultural resources that could be eligible for the National Register of Historic Places.

Plymouth to Goldendale Smart Pigging Project along the 1400 Ignacio/Sumas Line, Benton and Klickitat County, Oregon
02/2007 - 05/2007

Research Archaeologist for field investigations regarding a series of improvements at existing meter stations as well as individual block valves along the line between Goldendale and Plymouth, Washington.

Glendale Meter Station Phase I Archaeological Survey, Douglas County, Oregon
01/2007 - 03/2007

Research Archaeologist for survey of 1-acre meter station site on Williams Northwest Pipeline's Eugene/Grant's Pass Lateral pipeline.

TECHNICAL REPORTS

Ahlman, Todd M., Brian Herbel, Eric Carlson, Michael Falkner, Cathy Bialas, Lindsay Ponte, Jen Olander, Emily Ragsdale, Weber Greiser, Sam Willis, Chris Knutson, Matt Sneddon, Lynette Scriver-Colburn, and Glenn Stelter

2014 Literature Review and Cultural Resource Survey for the Pacific Direct Current Intertie (PDCI) Uprate Project, Lake, Jefferson, Crook, Deschutes, and Wasco Counties, Oregon.
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 2011 Draft Historic Properties Treatment Plan for Route SW-2 of the Washington Rural Access Project. Prepared by Historical Research Associates and Tierra Right of Way for Broadband Technology Grant Program, Washington, D.C.
- Becker, Anisa Q. and **Emily K. Ragsdale**
 2010 Results of Archaeological Investigations of the Wenatchee Facilities Modification Project - Plymouth to Zillah and Yakima to Wenatchee, Yakima, Benton, Kittitas, and Chelan Counties, Washington. Prepared by Historical Research Associates for Williams Gas Pipeline, Battleground, Washington.
- Bialas, Cathy, and **Emily K. Ragsdale**
 2011 Cultural Resource Investigations for the Chimney Park to Pier Park Pedestrian Bridge Project, Multnomah County, Oregon. Report prepared for David Evans and Associates, Inc. and the Oregon Department of Transportation by Historical Research Associates, Portland, Oregon.
- Bialas, Catherin, **Emily K. Ragsdale**, and Natalie Perrin
 2011 Cultural Resource Investigations for the Tri-Cities Maintenance Headquarters Franklin County, Washington. Report submitted by Historical Research Associates to the Bonneville Power Administration, Portland, Oregon.
- Bowden, Bradley, Fred Anderson, Thomas Becker, Michael Falkner, Katie Johnson, Erica McCormick, Robert McCurdy, Kendal McDonald, Lindsay Ponte, **Emily K. Ragsdale**, Bill R. Roulette, and Mark Tveskov
 2010 Pacific Connector Gas Pipeline Project Cultural Resource Investigations, Coos, Douglas, Jackson, and Klamath Counties: Final Phase II Evaluations. Prepared by Historical Research Associates, Applied Archaeological Investigations, and Southern Oregon University Laboratory of Anthropology for Pacific Connector Gas Pipeline, March 2010.
- Bowden, Bradley, Scott Byram, Kelly Derr, **Emily K. Ragsdale**, Paul Solimano, and Mark Tveskov
 2009 Pacific Connector Gas Pipeline Project, Cultural Resources Survey, Coos, Douglas, Jackson, and Klamath Counties, Oregon (Final Report). Prepared by Historical Research Associates for Pacific Connector Gas Pipeline, July 2009.
- Bowden, Bradley, and **Emily K. Ragsdale**
 2007 Archaeological and Historical Investigation for the Glendale Meter Station Project, Douglas County, Oregon. Prepared by Historical Research Associates for Williams Gas Pipeline, Battleground, Washington.
- 2012 Cultural Resources Inventory for the Santiam Substation Transformer Phase Separation Project, Linn County, Oregon. Report submitted by Historical Research Associates to the Bonneville Power Administration, Portland, Oregon.
- Dampf, Steven, **Emily K. Ragsdale**, and Sylvia Tarman
 2011 Cultural Resources Inventory of the Spokane Replacement Project. Report submitted to Williams Northwest Pipeline GP by Historical Research Associates, Inc., Spokane, Washington.
- Davis, Sara J., Stephen Hamilton, Michele Punke, Alexander Stevenson, Natalie Perrin, **Emily K. Ragsdale**, and Kelly Derr

- 2017 Cultural Resources Evaluations and Assessment of Effects for the Swan Lake North Pumped Storage Project, Klamath County, Oregon. Report prepared by Historical Research Associates for Rye Development and National Grid.
- Davis, Sara J., Michele Punke, **Emily K. Ragsdale**, Stephen Hamilton, Bradley Bowden, Jennifer Gilpin, Jennifer Olander, Joshua Dinwiddie, and Catherin Bialas
- 2016 Phase II Evaluation of 21 Sites for the Pacific Direct Current Intertie (PDCI) Uprate Project, Crook, Jefferson, and Lake Counties, Oregon. Prepared by Historical Research Associates for Bonneville Power Administration, Portland, Oregon.
- Davis, Sara J., Janna Tuck, and **Emily K. Ragsdale**
- 2018 Swan Lake North Pumped Storage Project, Klamath County, Oregon: 2018 BLM Cultural Resource Investigations in the Direct Effects APE. Report prepared by Historical Research Associates for Rye Development and National Grid.
- Derr, Kelly, Sara Davis, Steve Hamilton, Dustin Kennedy, Natalie Perrin, Michele Punke, and **Emily K. Ragsdale**
- 2017 Pacific Connector Gas Pipeline Project Cultural Resources Survey, Coos, Douglas, Jackson, and Klamath Counties, Oregon: 2017 Cultural Resources Addendum. Prepared by Historical Research Associates for Pacific Connector Gas Pipeline.
- Derr, Kelly M., Dustin Kennedy, Michele Punke, and **Emily K. Ragsdale**
- 2015 Pacific Connector Gas Pipeline Project, Cultural Resources Survey, Coos, Douglas, Jackson, and Klamath Counties, Oregon: 2014-2015 Cultural Resources Addendum. Prepared by Historical Research Associates for Pacific Connector Gas Pipeline.
- Derr, Kelly M., **Emily K. Ragsdale**, and Libby Provost
- 2018 *Pacific Connector Gas Pipeline Project, Cultural Resources Survey, Coos County, Oregon: 2018 Cultural Resource Addendum 1. Prepared by Historical Research Associates for Pacific Connector Gas Pipeline.*
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- Falkner, Michael, Jennifer Olander, and **Emily K. Ragsdale**
- 2008 Archaeological and Historical Investigation for the Olympia Looping Project, Thurston County, Washington. Prepared by Historical Research Associates for Williams Gas Pipeline, Battleground, Washington.
- Gilpin, Jennifer, Jennifer Olander, **Emily K. Ragsdale**, Jennifer Hushour, and Barbara Montgomery
- 2011 Draft Cultural Resources Survey for a Portion of Route SE-2 of the Washington Rural Access Project. Prepared by Historical Research Associates and Tierra Right of Way for Broadband Technology Grant Program, Washington, D.C.
- Hamilton, Stephen, Jennifer Olander, and **Emily K. Ragsdale**
- 2017 Cultural Resource Investigations at the Low Poole Site (35D01476), Douglas County. Report prepared by Historical Research Associates for PacifiCorp Energy.
- Knutson, Christopher, Lindsay Ponte, Catherin Bialas, Jennifer Olander, Michel Punke, **Emily Ragsdale**, and Bradley Bowden
- 2015 Literature Review and Cultural Resource Survey for the Pacific Direct Current Intertie (PDCI) Uprate Project, Lake, Jefferson, Crook, Deschutes, and Wasco Counties, Oregon:

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- Olander, Jennifer, Natalie Perrin, and **Emily K. Ragsdale**
- 2009 Pacific Connector Gas Pipeline Project, Cultural Resources Survey, Coos, Douglas, Jackson, and Klamath Counties, Oregon: Survey Report Addendum, DEIS Alternatives and Reclamation Resources. Prepared by Historical Research Associates for Pacific Connector Gas Pipeline, March 19, 2009.
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- Ponte, Lindsay, and **Emily K. Ragsdale**
- 2011 Valselt Water Storage Project Cultural Resources Desktop Analysis. Prepared for ENVIRON by Historical Research Associates, Inc., Portland, Oregon.
- Punke, Michele, Stephen Hamilton, Sara J. Davis, **Emily K. Ragsdale**, and Jennifer Olander
- 2016 Cultural Resource Investigations at Site 35WS27/28 for the Pacific Direct Current Intertie (PDCI) Uprate Project, Wasco County, Oregon. Prepared by Historical Research Associates for Bonneville Power Administration, Portland, Oregon.
- Ragsdale, Emily K.
- 2011a Investigations for Historic Streetcar Tracks Inadvertently Discovered during the Bond Street Waterline Relocation Project, Clatsop County, Oregon. Report submitted to the City of Astoria by Historical Research Associates, Portland, Oregon.
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- 2012a Addendum to Cultural Resource Investigations of the Albany-Eugene Transmission Line Rebuild Project, Linn and Lane Counties, Oregon. Prepared by Historical Research Associates for Bonneville Power Administration, Portland, Oregon.
- 2012b Archaeological Survey for the 2012 Timber Harvest Surveys (Units 10, 15, and 25), Lewis River, Washington. Report submitted by Historical Research Associates to PacifiCorp, Portland, Oregon.
- 2012c Supplemental Archaeological Survey for the Swift Camp FSC Project, Lewis River, Washington. Report submitted by Historical Research Associates to PacifiCorp, Portland, Oregon.
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- 2012b Cultural Resource Investigations for the 2012 Redmond District Wood Pole Replacement Project, Redmond-Pilot Butte No. 1 Transmission Line, Deschutes County, Oregon. Prepared by Historical Research Associates for Bonneville Power Administration, Portland, Oregon.
- Ragsdale, Emily K., Frederick Anderson, Catherin Bialas, Natalie Perrin, and James Grant**
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- Ragsdale, Emily K., Frederick C. Anderson, and Natalie K. Perrin**
 2010 Archaeological Investigations for the Port of Tillamook Bay FEMA Alternate Projects, Tillamook County, Oregon. Prepared by Historical Research Associates for AECOM and FEMA Region 10, Bothel, Washington.
- 2011 Cultural Resource Investigations for the Pearl-Marion No 1 Tower 6/2 Replacement Project, Clackamas County, Oregon. Report submitted by Historical Research Associates to the Bonneville Power Administration, Portland, Oregon.
- Ragsdale, Emily K. and Anisa Q. Becker**
 2010 Cultural Resource Investigations of the Satsop-Aberdeen No. 2 Critical Tower Replacement Project Grays Harbor County, Washington. Prepared by Historical Research Associates for Bonneville Power Administration, Portland, Oregon.
- Ragsdale, Emily K., Anisa Q. Becker, Natalie Perrin, and Chris Knutson**
 2010 Cultural Resource Investigations of the Albany-Eugene Transmission Line Rebuild Project, Linn and Lane Counties, Oregon. Prepared by Historical Research Associates for Bonneville Power Administration, Portland, Oregon.
- Ragsdale, Emily, and Catherin Bialas**
 2012 Archaeological Investigations for the Canyonville Hydrotest Project, Douglas County, Oregon. Report submitted to Williams by Historical Research Associates, Portland, Oregon.
- Ragsdale, Emily, Catherin Bialas, and Lynette Scriver-Colburn**
 2012 Archaeological Investigations for the Cow Creek Grade Control Project, Douglas County, Oregon. Report submitted to Williams by Historical Research Associates, Portland, Oregon.
- Ragsdale, Emily K., Lacey Culpepper, Jennifer Gilpin, Jennifer Olander, and Bradley Bowden**
 2008 Archaeological Site Verification of 55 Sites and Isolates on Fort Lewis, Pierce County, Washington. Prepared by Historical Research Associates for ENSR, Edmond, Washington.
- Ragsdale, Emily K., Steven Dampf, and Anisa Becker**

- 2010 Cultural Resources Investigation of the Spokane Replacement Project, Spokane County, Washington Prepared by Historical Research Associates for Williams Gas Pipeline, Battleground, Washington.
- Ragsdale, Emily K. and Denise DeJoseph**
 2008 Cultural Resources Survey for the CarMax Store Project, Washington County, Oregon. Prepared by Historical Research Associates for Golder Associates, Redmond, Washington.
- Ragsdale, Emily K., Michael Falkner, Jennifer Olander, and Bradley Bowden**
 2009 Archaeological Survey for the Blue Lake Park Nature and Golf Learning Center and 40-Mile Loop Improvements, Multnomah County, Oregon. Prepared by Historical Research Associates for Metro, Portland, Oregon.
- 2011 Archaeological Survey for the 40-Mile Loop Blue Lake Park Trail Project, Multnomah County, Oregon. Report prepared for Harper Houf Peterson Righellis and Oregon Department of Transportation by Historical Research Associates, Portland, Oregon.
- Ragsdale, Emily K., and Chuck Hoffman**
 2007 Cultural Resources Assessment for the Cheyne Landfill Expansion Project, Yakima County, Washington. Prepared by Historical Research Associates for R.W. Beck, Inc.
- Ragsdale, Emily K., and Jennifer Olander**
 2013 Cultural Resource Investigations for the Burnt Swamp Improvements Project, Douglas County, Oregon. Report submitted by Historical Research Associates to PacifiCorp, Portland, Oregon.
- Ragsdale, Emily K., Jennifer Olander, and Catherin Bialas**
 2013 Addendum No. 2 to Cultural Resource Investigations of the Albany-Eugene Transmission Line Rebuild Project, Linn and Lane Counties, Oregon. Prepared by Historical Research Associates for Bonneville Power Administration, Portland, Oregon.
- Ragsdale, Emily K., Jennifer Olander, and Bradley Bowden**
 2007 Archaeological and Historical Investigation for the Plymouth to Goldendale Pigging Project, Benton and Klickitat Counties, Washington. Prepared by Historical Research Associates for Williams Gas Pipeline, Battleground, Washington.
- Ragsdale, Emily K., Jennifer Olander, Frederick Anderson, and James Grant**
 2011 Cultural Resource Investigations for the Baseline Wind Energy Project, Gilliam County, Oregon. Prepared by Historical Research Associates for HDR Engineering, Portland, Oregon.
- Ragsdale, Emily K., Jennifer Olander, Jennifer Hushour, and Barbara Montgomery**
 2011 Draft Historic Properties Treatment Plan for Route SW-1 of the Washington Rural Access Project. Prepared by Historical Research Associates and Tierra Right of Way for Broadband Technology Grant Program, Washington, D.C.
- Ragsdale, Emily K., Jennifer Olander, Lindsay Ponte, and Bradley Bowden**
 2009 Archaeological Site Verification of 41 Sites and Isolates on Fort Lewis, Pierce County, Washington. Prepared by Historical Research Associates for ENSR, Edmond, Washington.
- 2011 Archaeological Site Verification of 55 Sites and Isolates on Joint Base Lewis-McChord, Pierce and Thurston Counties, Washington. Report prepared by Historical Research Associates, Inc., Portland, Oregon and AECOM, Redmond, Washington for United States Army, JBLM, Washington.

- Ragsdale, Emily K., Lindsay Ponte, Natalie Perrin, Jennifer Hushour, and Barbara Montgomery**
 2012 Addendum to Cultural Resources Survey Report for a Portion of Route SE-2 of the Washington Rural Access Project. Prepared by Historical Research Associates and Tierra Right of Way for Broadband Technology Grant Program, Washington, D.C.
- Ragsdale, Emily K., Lynette Sriver-Colburn, and Natalie Perrin**
 2012 Cultural Resource Investigations for the Bonneville-Hood River No. 1 Pole Replacement Project, Hood River County, Oregon. Report submitted by Historical Research Associates to the Bonneville Power Administration, Portland, Oregon.
- Ragsdale, Emily K., and Samuel Willis**
 2013 Phase II Evaluation of Site 35DO606, North Umpqua Hydroelectric Project, Douglas County, Oregon. Report submitted by Historical Research Associates to PacifiCorp, Portland, Oregon.
- 2013 Cultural Resource Investigations for the FY13 Pilot Butte-La Pine Wood Pole Replacement Project, Deschutes County, Oregon. Report submitted by Historical Research Associates to the Bonneville Power Administration, Portland, Oregon.
- Ragsdale, Emily K., Samuel Willis, and Lindsay Ponte**
 2013 Pacific Connector Gas Pipeline Project, Cultural Resources Survey, Coos, Douglas, Jackson, and Klamath Counties, Oregon: 2013 Cultural Resources Addendum #2. Prepared by Historical Research Associates for Pacific Connector Gas Pipeline, December 2013.
- Tarman, Sylvia, Emily K. Ragsdale, Jennifer Hushour, and Barbara Montgomery**
 2013 Archaeological Monitoring of Route SE-2 of the Washington Rural Access Project. Prepared by Historical Research Associates and Tierra Right of Way for Broadband Technology Grant Program, Washington, D.C.
- Windler, Zach, and Emily Ragsdale**
 2015a Cultural Resources Inventory for the Bird Haven Restoration Project, Linn County, Oregon. Report prepared by Historical Research Associates for U.S. Fish and Wildlife Service, Region 1.
- 2015b Cultural Resources Inventory for the Kamkaun Springs Restoration Project, Klamath County, Oregon. Report prepared by Historical Research Associates for U.S. Fish and Wildlife Service, Region 1.
- 2015c Cultural Resources Inventory for the Kingzett Restoration Project, Lane County, Oregon. Report prepared by Historical Research Associates for U.S. Fish and Wildlife Service, Region 1.
- 2015d Cultural Resources Inventory for the Proposed Willamette Bluffs (Rust) Restoration Project, Polk County, Oregon. Report prepared by Historical Research Associates for U.S. Fish and Wildlife Service, Region 1.
- 2017 Cultural Resources Inventory for the Fox Creek Mid-Reach 10 Habitat Restoration Project, Phase I, Grant County, Oregon. Report prepared by Historical Research Associates for Tetra Tech and Confederate Tribes of Warm Springs.

TRAINING

NEPA Compliance and Cultural Resources, National Preservation Institute. March 5-6, 2013.

Project Management Bootcamp, PSMJ Resources. March 11-12, 2010.

Section 106: A Review for Advanced Practitioners, National Preservation Institute. February 18-19, 2009.

Historic Artifact Identification Workshop, Association of Oregon Archaeologists. April 14, 2007.

MEMORANDUM OF AGREEMENT

BETWEEN:

**JORDAN COVE ENERGY PROJECT L.P., PACIFIC CONNECTOR GAS PIPELINE,
LP,**

and

**THE CONFEDERATED TRIBES OF COOS, LOWER UMPQUA AND SIUSLAW
INDIANS**

This Memorandum of Agreement (“MOA”) is made and entered into by and between Jordan Cove Energy Project L.P., a Delaware limited partnership (“JCEP”), Pacific Connector Gas Pipeline LP a Delaware limited partnership (“PCGP”) (JCEP and PCGP are hereinafter referred to as “Jordan Cove” or the “Applicant”) and the Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians (“Tribe”).

I. PURPOSE

The purpose of this MOA is to establish a process and substantive terms to implement Policy 18 of the Coos Bay Estuary Management Plan (“CBEMP”) and parallel Coos County (“County”) land use regulations applicable in areas outside of the Coos Bay Estuary to Jordan Cove’s land use applications and approvals by Coos County and the City of North Bend (“City”). For purposes of this MOA, reference to “Policy 18” shall include both CBEMP Policy 18 and the land use regulations applicable outside of the Coos Bay Estuary. This MOA establishes the Parties’ agreed upon “appropriate measures” to protect the cultural, archaeological and historical values of the sites where the Project (as defined below) will be built as required by CBEMP Policy 18. The Parties agree this MOA applies to both new applications requiring compliance with CBEMP Policy 18 and to existing approvals that have conditions requiring compliance with CBEMP Policy 18 or its implementing land use regulations.

II. BACKGROUND

JCEP proposes to construct, operate, and eventually decommission a liquefied natural gas (“LNG”) export facility and supporting infrastructure to be located on the North Spit of Coos Bay, and PCGP proposes to construct, install, own and operate a 36-inch diameter gas pipeline and supporting infrastructure spanning 229-miles across Klamath, Jackson, Douglas, and Coos Counties in the State of Oregon (“the Pipeline”) (the LNG Terminal and the Pipeline are collectively referred to as the “Project”), all as set forth in Jordan Cove’s applications filed under

Sections 3 and 7 of the Natural Gas Act with the Federal Energy Regulatory Commission (“FERC”) on September 21, 2017.

In 2015, Jordan Cove applied to Coos County for a conditional use permit to construct and operate a LNG export terminal at Jordan Cove, located on the North Spit at Coos Bay, located in Coos County (“LNG Facility”). The LNG Facility consists of a number of components, including (1) the LNG export terminal, (2) a marine slip and access channel, (3) a barge berth, (4) a gas processing center, and (5) a fire station and emergency training center, along with associated roads and utilities. The Project would also require significant dredging, dredge disposal, shoreline stabilization, and wetland impact mitigation.

The LNG Terminal, gas processing facility, and fire station and emergency training center will be located on upland areas zoned for industrial uses. Much of the port facilities (slip, barge berth, tugboat dock, etc.) will be located in coastal shoreland areas, which are generally zoned to allow for water-dependent uses. The marine slip and access channel will require dredging in Jordan Cove, designated a natural estuary, and Henderson March, a Statewide Planning Goal 5 (Natural Resources, Scenic and Historic Areas, and Open Spaces) inventoried wetland.

The Coos County Hearings Officer held a hearing on December 18, 2015. On May 2, 2016, the Hearings Officer issued a decision with recommendations to approve the applications. On August 16, 2016, the County Board of Commissioners held a public meeting to deliberate on the recommendations, and voted to adopt the Hearings Officer’s finding as the County’s decision, with minor modifications. The County’s final decision was issued on August 30, 2016. An appeal was promptly filed with the Oregon Land Use Appeals Board (“LUBA Appeal”). The Tribe intervened in the LUBA Appeal.

On November 27, 2017, the LUBA issued its Final Opinion and Order (“FDO”) and remanded the matter for the County to further address CBEMP Policy 18 in the context of Jordan Cove’s conditional use permit application.

Jordan Cove has provided the Tribe with a Site Plan for the Project, as required by Policy 18, and the Parties agree that there are cultural, archaeological and historical sites identified on the County’s adopted and acknowledged inventory located within the Project area, as more specifically listed or depicted in Attachment A. The Parties further agree that there is a potential for unknown or unrecorded cultural, archaeological and/or historical sites to be encountered within the Project area.

The Tribe and the Jordan Cove met, conferred and agreed upon appropriate measures to protect the cultural, historical and archaeological values of identified inventoried sites, together with unknown or unrecorded sites that may be encountered during construction within the Project area during construction (“Cultural Resources”).

III. SUBSTANTIVE REQUIREMENTS

A. Standards

1. Policy 18 requires either no adverse impacts to cultural, historic and archeological sites within the Project area or the implementation of appropriate measures to protect the cultural, historical and archaeological values of such sites.

B. Parties Obligations

1. For any land use application for the Project that may adversely affect a Cultural Resources identified in Attachment A, Jordan Cove shall (i) submit to the County or City, as applicable, a detailed cultural resource survey prepared by an archaeologist meeting the Secretary of the Interior's Guidelines as defined in 36 CFR Part 61 Tribe regarding the nature and location of the Cultural Resource; (ii) an analysis of the impacts of the potential impacts to the Cultural Resource; and (iii) if necessary, a recommendation, after consulting with the Tribe, of appropriate measures to protect the cultural, archaeological and historical values of the Cultural Resource. If the Tribe and Jordan Cove are unable to agree upon the appropriate measures to protect such sites, either Party may invoke Section 3.11 of the Cultural Resources Protection Agreement.

2. Subject to the County imposing a condition on any approval requiring compliance with this MOA to ensure compliance with CBEMP Policy 18, the Tribe agrees that Jordan Cove's land use applications for the Project comply with CBEMP Policy 18.

3. The Parties agree that an executed copy of this MOA shall be entered into the County and/or City record for any land use applications or approvals where compliance with the CBEMP Policy 18 is at issue.

IV. APPROPRIATE MEASURES TO PROTECT CULTURAL, ARCHAEOLOGICAL AND HISTORICAL VALUES


A. The Parties have executed a comprehensive Cultural Resources Protection Agreement ("CRPA"), Attachment B, which is attached hereto and incorporated fully herein by this reference. The CRPA includes and incorporates several relevant attachments, including an Unanticipated Discovery Plan ("UDP"), which provides procedures in the event of an unanticipated discovery of historic properties, archaeological objects, archaeological sites or human remains, funerary objects, sacred items and items of cultural patrimony during the construction and operation of the Project.

B. The Parties agree that the CRPA and the UDP constitute "appropriate measures" under the CBEMP Policy 18 as the CRPA provides: a process for the exchange of project related information, confidentiality requirements, commitments to mitigation, monitoring agreements, agreements for the treatment of unanticipated discovery of Cultural Resources, site access agreements, and cost recovery agreements.

V. PERMIT CONDITIONS

A. The Parties agree that compliance with this MOA shall become a condition of any County and/or City issued land use permit for activities within the Project area that involve a Cultural Resource.

IN WITNESS WHEREOF, the Parties hereto have executed this MOA as of the last date written below.



**for Jordan Cove Energy Project, L.P.
and Pacific Connector Gas Pipeline, LP**


DATE



**Mark Ingersoll, Tribal Council Chairman
CONFEDERATED TRIBES OF COOS,
LOWER UMPQUA AND SIUSLAW INDIANS**

DATE

V. PERMIT CONDITIONS

A. The Parties agree that compliance with this MOA shall become a condition of any County and/or City issued land use permit for activities within the Project area that involve a Cultural Resource.

IN WITNESS WHEREOF, the Parties hereto have executed this MOA as of the last date written below.



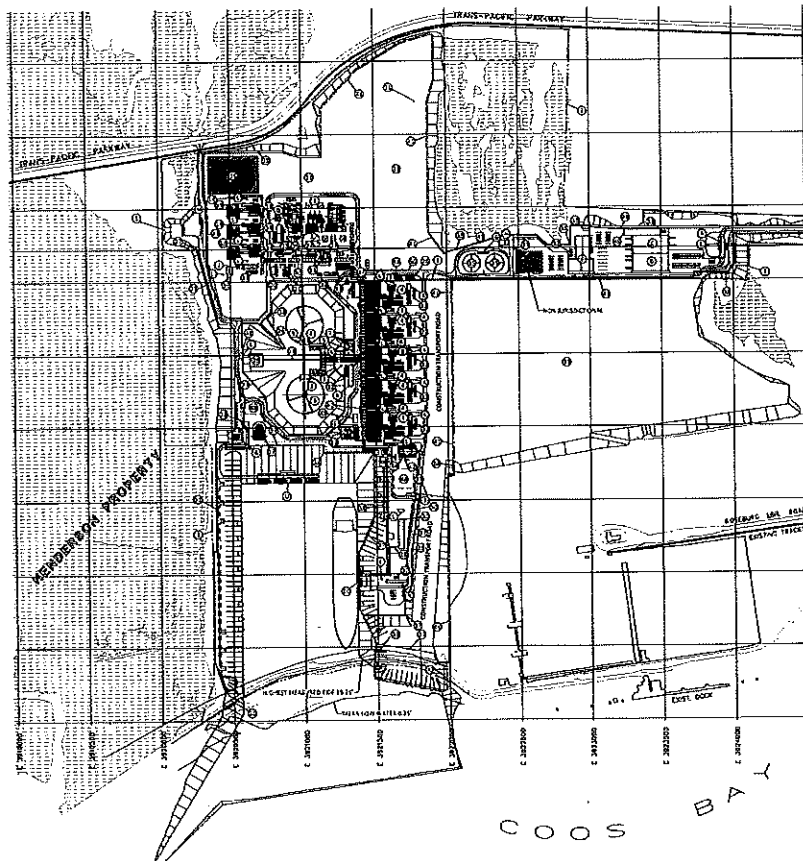
**for Jordan Cove Energy Project, L.P.
and Pacific Connector Gas Pipeline, LP**

DATE

**Mark Ingersoll, Tribal Council Chairman
CONFEDERATED TRIBES OF COOS,
LOWER UMPQUA AND SIUSLAW INDIANS**

DATE

2002 CBEMP Goal 5 Map on File with Coos County

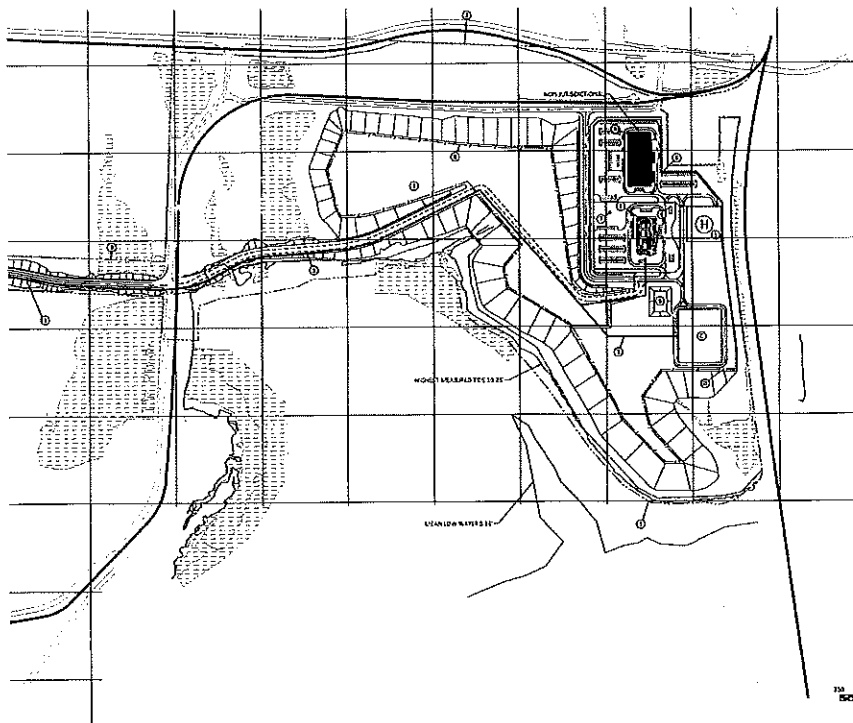


ITEM	FACILITY LEGEND
1	TRUCK STORAGE
2	TRUCK TRAILER PARK
3	TRUCK TRAILER STORAGE
4	TRUCK TRAILER STORAGE (OVERHEAD)
5	TRUCK TRAILER STORAGE (OVERHEAD)
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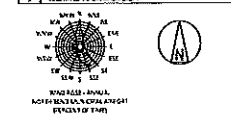


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ITEM	FACILITY/LEGEND
A	WATER TOWER
B	WATER TOWER TANK
C	WATER TOWER PUMP
D	WATER TOWER VALVE

ITEM	FACILITY/LEGEND
1	WATER AND WASTE TREATMENT PLANT
2	WATER TREATMENT PLANT
3	WASTE TREATMENT PLANT
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- NOTES:
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---	WATER TOWER PUMP
---	WATER TOWER VALVE

**CULTURAL RESOURCES PROTECTION AGREEMENT
BETWEEN
THE CONFEDERATED TRIBES OF COOS, LOWER UMPQUA AND SIUSLAW INDIANS
AND
JORDAN COVE ENERGY PROJECT LP
AND
PACIFIC CONNECTOR GAS PIPELINE L.P.**

THIS CULTURAL RESOURCES PROTECTION AGREEMENT ("Agreement") is entered into as of this 20th day of July, 2018 ("Effective Date") by and between Jordan Cove Energy Project LP, a Delaware limited partnership ("JCEP") and Pacific Connector Gas Pipeline L.P., a Delaware limited partnership ("PCGP") (JCEP and PCGP are hereinafter referred to as "Jordan Cove"), and the Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians, a federally recognized Indian tribe ("CTCLUSI" or the "Tribe"). Jordan Cove and the Tribe are sometimes referred to herein individually as a "Party" and collectively as the "Parties."

I. RECITALS

WHEREAS, JCEP proposes to construct, operate, and eventually decommission a liquefied natural gas ("LNG") export facility and supporting infrastructure to be located on the North Spit of Coos Bay ("LNG Terminal"), and PCGP proposes to construct, install, own and operate a 36-inch diameter gas pipeline and supporting infrastructure spanning 229-miles across Klamath, Jackson, Douglas, and Coos Counties in the State of Oregon ("the Pipeline") (the LNG Terminal and the Pipeline are collectively referred to as the "Project"), all as set forth in Jordan Cove's applications filed under Sections 3 and 7 of the Natural Gas Act with the Federal Energy Regulatory Commission ("FERC") on September 21, 2017; and

WHEREAS, FERC is responsible for compliance with Section 106 of the National Historic Preservation Act, 16 U.S.C. § 470, ("NHPA"), which requires it to take into account the effects of its undertakings on historic properties by identifying the properties within a proposed undertaking's area of potential effects that are listed or eligible for listing in the National Register of Historic Places, 36 C.F.R. § 800.4, evaluate the effects of the proposed undertaking on those properties, *Id.* § 800.5, and if adverse effects are found, resolve such adverse effects through avoidance, minimization or mitigation. *Id.* At 800.6; and

WHEREAS, the Parties expect FERC, the State Historic Preservation Office ("SHPO") and other federal agencies will document compliance with the requirements of the NHPA through execution of a memorandum of agreement that will address resolution of any adverse effects identified within the "area of potential effects" for the Project; and

WHEREAS, Jordan Cove has developed, with input from the Tribe, SHPO and other federally recognized tribes, the plan and procedures addressing Unanticipated Discoveries of Cultural Resources and Human Remains, which outlines the procedures Jordan Cove will follow should Project construction result in the unanticipated or inadvertent discovery of archaeological sites, cultural resources or human remains; and

WHEREAS, the Tribe descends from the indigenous people who resided along the southern Oregon coast for countless generations, and

WHEREAS, the Tribe's ancestral territory extends from the mouth of Tenmile Creek (Lane County) in the north, south to Fivemile Point halfway between the mouths of Whiskey Run Creek and Cut Creek (coinciding with the border between Sections 30 and 31, Township 27 South, Range 14 West, Coos County), thence east to the crest of the Coast Range to Weatherly Creek on the Umpqua River ("Ancestral Territory"); and

WHEREAS, the LNG Terminal and a portion of the Pipeline run through the Tribe's Ancestral Territory; and

WHEREAS, the Tribe is deeply concerned by the potential effects of construction and operation of the LNG Terminal and the Pipeline on the Tribe's cultural resources; and

WHEREAS, cultural resources within the Jordan Cove Area include identified and unidentified but probable archaeological sites and items such as stone tools, fish traps, residential remains, cemetery remains, secondary deposits, historic bottle dumps, early frame houses, and mill works, dating from several thousand to less than one hundred years old, and all of which are a central part of the cultural heritage of the Tribe and of the region; and

WHEREAS, during previous iterations of the Project, archaeological studies have been conducted and two archaeological sites were identified within the area of potential effects identified at that time - Sites 35CS221 and 35CS227 as requiring additional investigation; and

WHEREAS, as set forth in this Agreement, the Tribe will participate in the identification of potential adverse impacts to Site 35CS227, and the development of measures to avoid or mitigate any such impacts through design measures for the Project, and at least one archaeologist will monitor adjacent construction activities; and

WHEREAS, on July 31, 2006 through Resolution No. 2006-097, and again on July 29, 2015 through Resolution No. 2015-049 the Tribal Council designated the Jordan Cove Area as a Site of Tribal Cultural and Religious Significance; and

WHEREAS, construction, operation and decommissioning of the Project must take place in compliance with local, state and federal laws, including Section 106 of the NHPA, the National Environmental Policy Act (NEPA), the Native American Graves Protection and Repatriation Act (NAGPRA), Oregon laws regarding sites and artifacts (Oregon Revised Statutes (ORS) 358.905 *et seq.*), Oregon laws regarding Indian Graves and Protected Objects (ORS 97.740 *et seq.*; and the Coos Bay Estuary Management Plan; and

WHEREAS, the Parties seek to work cooperatively to avoid, minimize and, where appropriate, mitigate adverse effects to the Tribe's cultural resources from the Project Activities pursuant to the terms and conditions herein set forth.

NOW, THEREFORE, the Parties enter into this Agreement in a spirit of cooperation to provide a means by which the Parties can address the matters set forth in this Agreement with the goal of minimizing adverse effects to the Tribe's cultural resources arising from the construction, operation and decommissioning of the Project.

II. DEFINITIONS

- 2.1** "Applicable Law" means all applicable federal, state, and local laws, statutes, rules, regulations, codes, or ordinances, of a Governmental Authority.
- 2.2** "Archaeologist" means a scientist meeting all standards and requirements of the Secretary of the Interior set forth in 36 CFR Part 61, with a graduate degree in anthropology and the required experience to properly identify and record Cultural Resources.
- 2.3** "Area of Potential Effect" means that area delineated through the section 106 process for the Project.
- 2.4** "Cultural Resources" mean districts, sites, buildings, structures, Native American Human Remains and funerary objects, and all other physical objects that are significant to the Tribe's history, architecture, archeology and culture, including, but not limited to, historic properties and Traditional Cultural Properties to which the Tribe attaches religious and cultural significance.
- 2.5** "Curation" means the management and preservation of collections in accordance with the National Park Service's regulations in 36 CFR Part 79, unless otherwise agreed to in writing.
- 2.6** "Governmental Authority" means any (a) national, state, county, municipal or local government and any political subdivision thereof, (b) court or administrative tribunal, or (c) other governmental, quasi-governmental, judicial, public or statutory instrumentality, authority, body, agency, bureau or entity of competent jurisdiction.
- 2.7** "Ground Disturbing Activities" means any activity that compacts or disturbs the surface or subsurface within the Project Area. Ground Disturbance can be caused by the use of hand tools (shovels, pick axe, posthole digger, etc.), heavy equipment (excavators, backhoes, bulldozers, trenching and earthmoving equipment, etc.), and heavy trucks (large four-wheel drive trucks, dump trucks and tractor trailers, etc.). Trenching, bulldozing, excavating, scraping, vibrodensification, geo-piering and plowing are typical examples of Ground Disturbance Activities. Project types that usually involve Ground Disturbance include acquisition/demolition/relocation of

structures; vegetation management; landslide stabilization; and infrastructure projects such as utilities, storm water management, and flood control.

- 2.8** "Mitigate" means to minimize the potential effects to Cultural Resources where avoidance is not reasonably practicable. This may include, but is not limited to, data recovery, Monitoring, or relocation or Curation of the Cultural Resource.
- 2.9** "Monitor" means observance of Project Activities by a person determined by CTCLUSI to be knowledgeable and qualified in identifying Cultural Resources.
- 2.10** "Native American Human Remains" means the physical remains or partial remains of the body of a person of established or probable Native American ancestry.
- 2.11** "Person" means an individual, entity, corporation, partnership, limited liability company, joint venture, association, or unincorporated association or Governmental Authority.
- 2.12** "Project Activities" means testing, pre-construction, construction, operation, and decommissioning Ground Disturbing Activities within the Project Area that are reasonably likely to have adverse effects on Cultural Resources.
- 2.13** "Project Area" means the area depicted on Exhibit "A" attached hereto, as it may be amended from time to time.
- 2.14** "Traditional Cultural Property" or "TCP" means a property that is either eligible for listing or listed on the National Register of Historical Places ("NRHP") based on its associations with the cultural practices, traditions, or beliefs, of the Tribe. TCPs are rooted in the Tribe's history and are important in maintaining the continuing cultural identity of the Tribe.
- 2.15** "Unanticipated Discovery" means the unintentional encounter or discovery of Cultural Resources or Human Remains.
- 2.16** "Unanticipated Discovery Plan" or "UDP" means the agreed-upon plan attached to the FERC Memorandum of Agreement resulting from the conclusion of the section 106 process, a draft of which is attached to this Agreement as Exhibit "B", or, until issuance of a certificate by the FERC, an agreed upon-plan that is required by a Governmental Authority as a condition of an authorization, certification, approval or permit associated with Project Activities, or, in the absence of an agreed-upon plan that is required by a Governmental Authority, Exhibit B.

III. STIPULATIONS

3.1 Purpose. This Agreement sets forth the terms and conditions governing:

- (a) communication and information exchange protocols between the Parties;

- (b) the Tribe's participation in the identification of Cultural Resources within the Project Area; assessment of adverse impacts to Cultural Resources; and the development of measures to avoid, minimize or mitigate any potential effects in accordance with Applicable Law, and;
- (c) Monitoring of Cultural Resources during Project Activities; and
- (d) reimbursement to the Tribe for reasonable costs associated with implementation of this Agreement in accordance with the terms of the cost reimbursement agreement attached hereto as Exhibit 'C' and to fund a full-time position within the Tribe's Historic Preservation Office in accordance with the terms of section 3.9.

3.2 Mitigation Preferences.

- (a) Jordan Cove agrees to avoid adverse impacts to Cultural Resources to the extent reasonably practicable. If adverse impacts are unavoidable then Jordan Cove agrees to minimize or mitigate any potential impacts in accordance with Applicable Law and considering the preferences set out in subparagraph (b) of this Section 3.2.
- (b) For Project Activities that may impact Cultural Resources, Jordan Cove shall, in accordance with Applicable Law, apply the following order of preference with respect to preferred mitigation methodologies:
 - (1) Avoiding the impact altogether by not taking a certain action or parts of an action;
 - (2) Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
 - (3) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
 - (4) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, and;
 - (5) Compensating for the impact, including but not limited to the relocation or Curation of the Cultural Resource.

3.3 Communication and Information Sharing. The Parties agree to the following information sharing and communication protocols:

- (a) Within thirty (30) days of execution of this Agreement, Jordan Cove will identify individuals who will be the primary contact(s) or their designated representative for the purposes of implementing this Agreement and principal(s) who will be responsible for overall compliance with the Agreement and resolving any disputes in accordance with the terms of this Agreement; CTCLUSI will identify tribal officials or representatives who will be the primary contact for the purposes of implementing this Agreement and principals responsible for resolving any disputes.
- (b) Jordan Cove will provide CTCLUSI with complete copies of permit applications required for Project Activities and provide CTCLUSI an opportunity to comment on such permit applications pursuant to Applicable law.
- (c) Prior to all Project Activities, Jordan Cove will seek CTCLUSI's expertise and opinions related to potential discovery of Cultural Resources in the Project Area and the need for Monitoring of the Project Activities. CTCLUSI shall provide such expertise and opinions to Jordan Cove pursuant to subsection (f) below.
- (c) Jordan Cove will provide timely, good faith responses to, and will take into consideration all timely written comments received from CTCLUSI related to Cultural Resources that could be affected by Project Activities pursuant to the terms of this Agreement.
- (d) Jordan Cove will provide CTCLUSI with a schedule for all Project Activities, updated at a minimum quarterly, identifying dates on which or by which comments or Monitoring would be required under the terms of this Agreement ("Project Activity Schedule").
- (e) Jordan Cove principals and CTCLUSI principals, in each case identified in accordance with subsection (a) above, will meet not less than quarterly and in coordination with the submission of updated Project Activities schedules, to discuss such schedules. CTCLUSI shall identify which Project Activities require Monitoring or comments to be provided by CTCLUSI. At least once a year, during a meeting to be held in February, the principals shall also review progress under the Agreement and whether the Agreement needs to be amended.
- (f) In addition to the Project Activity Schedule, prior to undertaking each Project Activity, Jordan Cove will provide CTCLUSI with a Project Activity Notice in a form substantially as included as Exhibit "D". CTCLUSI shall provide any response or comment to such Project Activity Notice pursuant to the schedule set out below:
 - 1. Not less than thirty (30) days, unless such notification is not practicable, before commencing any Project Activities requiring a Monitor from

CTCLUSI, Jordan Cove will provide CTCLUSI with a Project Activity Notice describing the activity to be taken, timing and any other information reasonably necessary to facilitate CTCLUSI Monitoring of such Project Activity, such as the scope of equipment to be used and number of construction fronts. If there are any material changes to the plans set out in the Project Activity Notice, Jordan Cove agrees to provide CTCLUSI with an additional notice and opportunity to comment. In the event of an emergency, Jordan Cove agrees to provide CTCLUSI with a summary of the Project Activities undertaken during the emergency, as soon as practicable following conclusion of the emergency.

2. Within twenty (20) days of receiving the Project Activity Notice, CTCLUSI will submit to Jordan Cove any comments or concerns, including requests for additional investigations or surveys, related to the proposed Project Activity.
 3. Within seven (7) days of receiving CTCLUSI's comments, Jordan Cove will provide CTCLUSI notice regarding any changes Jordan Cove decides to make to the proposed Project Activity based on CTCLUSI's comments.
- (d) The Parties will use reasonable efforts to informally resolve disputes arising under this Section 3.3. Disputes arising under this Section 3.3 that cannot be informally resolved between the Parties shall be subject to the dispute resolution provisions of this Agreement.
- (e) Jordan Cove agrees to provide notice to staff, contractors, and consultants engaged by Jordan Cove to undertake Project Activities that are reasonably likely to affect Cultural Resources of the provisions of this Agreement and Jordan Cove's responsibilities under this Agreement.
- (h) Jordan Cove agrees to work with CTCLUSI to develop a cultural resources awareness and training program, which shall be utilized during the onboarding process for all employees and contractors engaged in Project Activities at the LNG Terminal.

3.4 Identification of Cultural Resources; Assessment and Resolution of Adverse Impacts

- (a) The Parties agree to work cooperatively to identify Cultural Resources and to assess and resolve any adverse impacts thereto in compliance with this Agreement and Applicable Laws. To the extent of any conflict, the provisions of Applicable Laws shall control.
- (b) The Parties agree that the scope of Cultural Resource identification efforts shall, to the extent allowed by Applicable Law, include reference to and use of ethnographic analysis reports.

3.5 Monitoring During Applicable Project Activities.

- (a) CTCLUSI may have Monitors present at Project Activities. All Monitors may be required to execute an Access Agreement substantially in the form attached hereto as Exhibit "E" for access to any lands within the Project Area, other than federal lands, that are owned or controlled by Jordan Cove.
- (b) JCEP and PCGP will permit Tribal staff members or designated representatives ("Tribal Monitors") to be present in the Project Area, at the Tribe's option, to monitor Applicable Project Activities, subject to applicable access, safety, and security rules and policies.
- (c) Jordan Cove will ensure that (1) the Tribe is provided reasonable notice of Project Activities as set out in this Agreement, and (2) Tribal Monitor are granted reasonable access to the Project Area and any Project Activities as necessary to perform his or her duties as a Tribal Monitor. Jordan Cove shall provide to CTCLUSI the equipment set out in the Project Activity Notice.
- (d) Tribal Monitor access to any portion of the Project Area shall be subject to all applicable security and safety rules, laws, and regulations, and Jordan Cove's and its contractors' security and safety policies, including requirements relating to the use of proper clothing and safety equipment, including safety glasses or goggles, masks, rebreathers, hazmat suits, hard hats, or safety vests, provided that Jordan Cove reserves the right for itself and its contractors to prohibit access to any portion of the Project Area by any Person, including any Tribal Monitors, in its sole and absolute discretion to the extent of any actual or threatened breach of any such rules, laws, regulations, or policies.
- (e) Jordan Cove acknowledges that the Tribe may incur certain costs in connection with a qualified Tribal Monitor's archaeological and/or safety training directly related to monitoring activities hereunder. Jordan Cove will reimburse the Tribe for all reasonable costs associated with Monitoring activities, pursuant to the Cost Recovery Agreement between the Parties, which is attached hereto as Exhibit "C" and incorporated herein by this reference.
- (f) Jordan Cove shall hold the Tribe and its officers and employees harmless from and against any and all claims, actions, liabilities, losses, damages, judgments, grants, costs, and expenses (including attorney's fees) arising out of injury or death to persons, or damage to property caused by the negligence of Jordan Cove, its officers, employees, agents, assigns, and subcontractors in the performance of obligations arising under this Agreement, provided the Tribe promptly notifies Jordan Cove in writing of any such claim, and provided that Jordan Cove shall have the exclusive right to control the defense.

- (g) The Tribe shall hold Jordan Cove, its officers and employees harmless from and against any and all claims, actions, liabilities, losses, damages, judgments, grants, costs, and expenses (including attorney's fees) arising out of injury or death to persons, or damage to property caused by the negligence of the Tribe and its officials, employees, agents, and subcontractors in the performance of obligations arising under this Agreement, provided: (i) Jordan Cove promptly notifies the Tribe in writing of any such claim; (ii) the Tribe shall have the exclusive right to control the defense; and (iii) the amount does not exceed and is otherwise covered by the Tribe's liability insurance.
- (h) The Tribe shall maintain, during the term and each renewal or extension of this Agreement, at its own expense, the following insurance: (i) statutory workers' compensation insurance or equivalent industrial accident insurance covering all employees as required by law; (ii) commercial automobile liability coverage (if the use of automobiles is required) for all owned, hired, borrowed, leased, or non-owned automobiles, providing bodily injury and property damage liability coverage with a combined single limit of \$1,000,000; and (iii) commercial general liability insurance (including, but not limited to, premises operations, property damage, products/completed operations, contractual liability, and personal injury) with limits of at least \$1,000,000 per occurrence/ \$2,000,000 annual aggregate.
- (i) Upon request of the Tribal Council, and subject to any necessary safety requirements, Jordan Cove shall allow reasonable site access to Tribal Council Members and to Tribal Council authorized Tribal cultural leaders, to perform ceremonies and blessings prior to a Tribal Council identified Ground Disturbing Activity.

3.6 Inadvertent Discoveries.

If Cultural Resources are discovered in the Project Area, including during Project Activities, Jordan Cove agrees to:

- (a) Promptly inform the Tribe of the discovery; and
- (b) Comply with the procedures and protocols set forth in the UDP, which is attached hereto as Exhibit "B" and incorporated herein by this reference. The Parties expect the UDP to remain substantially in the form as the document attached hereto as this document has been provided to FERC.

3.7 Confidentiality

For purposes of this Agreement, the Parties agree as follows:

- (a) Tribal Confidential Information means all information whether written or oral, including ethnographic reports, provided by the Tribe to Jordan Cove regarding: potential burial sites, archeological objects, funerary objects or objects of cultural patrimony as defined by ORS 358.905, sacred or religious sites and traditional gathering locations.
- (b) Jordan Cove Confidential Information means all information whether written or oral provided by Jordan Cove which it designates as confidential at the time the information is provided to the Tribe in furtherance of the activities under this agreement. Jordan Cove Confidential Information, includes, but is not limited to, technical reports, operations information, construction plans and similar information.
- (c) Receiving Party means the party receiving Confidential Information.
- (d) Disclosing Party means the party disclosing the Confidential Information.
- (e) Confidential Information shall not include information that (i) is available in the public domain; (ii) was in the Receiving Party's possession prior to the date of this Agreement and not covered by any confidentiality requirements; (iii) the Receiving Party received from a third party who was not under any obligation of confidentiality with respect to the information.
- (f) The Receiving Party will not disclose the Disclosing Party's Confidential Information and will maintain such information as confidential using practices no less stringent than the Receiving Party applies to its own confidential information. The Receiving Party agrees not to disclose Confidential Information without the prior written consent of the Disclosing Party; provided, however, the Receiving Party may disclose Confidential Information to the Receiving Party's affiliates, officers, directors, partners, employees, accountants, advisors, consultant and representatives (Related Persons) but only to the extent necessary for purposes of this Agreement. The Receiving Party shall be responsible for any acts or omissions of its Related Persons with respect to Confidential Information provided pursuant to the terms of this Agreement.
- (g) If Jordan Cove or the Tribe become aware of a disclosure of Confidential Information in violation of the terms of this Agreement, the party making such discovery shall promptly notify the other party of such disclosure. Jordan Cove and the Tribe agree that the unauthorized disclosure of Confidential Information would cause irreparable harm that would be difficult to quantify. Accordingly, Jordan Cove and the Tribe agree the Disclosing Party would be entitled to injunctive relief in the event of a breach of this Agreement with respect to Confidential Information in addition to any other remedies that may be available to the Disclosing Party at law or in equity. The Receiving Party shall not contest the Disclosing Party's right to

seek any such relief on the grounds that monetary damages would be available to compensate the Disclosing Party for any such breach.

- (h) Nothing in this Agreement shall convey to either Party any rights in or to the Confidential Information, including any rights of ownership or license, whether arising under patent, copyright, trademark, trade secret or any other intellectual property or other proprietary right.
- (i) Notwithstanding anything contained herein to the contrary, the commitments and obligations set forth in this Section 3.7 shall continue until the earlier to occur of Jordan Cove notifying the Tribe that (i) Project Activities are complete or (ii) the Project has been cancelled.

3.8 Funding of full time position. Jordan Cove agrees to provide in accordance with the terms of a separate agreement to be entered into between CTCLUSI and Jordan Cove within sixty (60) days of execution of this Agreement funding for a full-time position to assist CTCLUSI's Tribal Historic Preservation Office in carrying out CTCLUSI's obligations under this Agreement and other duties as assigned by CTCLUSI.

3.9 Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Oregon, without reference to conflicts of law rules, and the federal laws of the United States.

3.10 Dispute Resolution.

- (a) All standards and procedures contained within Applicable Law pertinent to the provisions of this Agreement shall control.
- (b) The Parties desire to prevent disputes regarding compliance with this Agreement whenever possible, and to quickly and effectively resolve disagreements when they arise. All disputes under this Agreement shall be considered Confidential Information and shall be subject to the provisions of Section 3.7, subject to Applicable Law.
- (c) To the extent possible, the Parties will use reasonable efforts to negotiate a mutually agreeable resolution to any disagreements by the parties responsible for the day-to-day implementation of the provisions of this Agreement. In the event such parties are not able to resolve any disagreements within a reasonable period of time, the dispute shall be elevated to the principals designated under section 3.3(a) by either party providing written notice to the other party's principal.

- (d) Upon receipt of a notice as set out in subparagraph (c) above, the principals agree to meet in person no later than ten (10) days after receipt of the notice, unless the Parties mutually agree to a different time and manner of meeting.
- (e) The Principals will attempt, in good faith, to resolve the dispute between the Parties.
- (f) If the parties are unable to resolve the disputed issues through joint discussions under this Section, either party may request arbitration by providing a written arbitration demand to the other party. The party on whom the demand is served shall have ten (10) days after receipt of the arbitration demand to advise the other party as to whether it will agree to arbitration.
- (g) If the parties do not agree to arbitrate, then each party reserves the right to terminate this Agreement pursuant to Section 3.13, and/or to argue that failure to comply with this Agreement results in a violation of Applicable Law and any permits, certifications or approvals related to the Project.
- (h) Arbitration shall be conducted in accordance with the Commercial Arbitration Rules of the American Arbitration Association ("AAA") or other mutually agreed-upon procedures. All arbitration hearings shall be held at Coos Bay, Oregon or such other place mutually agreed to by the Parties. If either Party fails to abide by such arbitration ruling, the Parties agree to enforce the arbitration award in Oregon state courts or any federal court having jurisdiction.
- (i) In determining any matter(s) the arbitrators shall apply the terms of the Agreement, without adding to, modifying or changing the terms in any respect, and shall apply the laws of the State of Oregon.
- (j) Prior to submitting to arbitration, the Parties may mutually agree to engage in mediation, in which case the Commercial Mediation Procedures of the AAA shall apply or other mutually agreed-upon procedures.

3.11 Limited Waiver of Sovereign Immunity

- (a) CTCLUSI hereby grants an irrevocable, limited waiver of sovereign immunity to compel arbitration, once the Tribe has provided written notice to agree to arbitration pursuant to Subsection 3.11(f), and to enforcement of an arbitration award. Furthermore, for the sole and limited purpose of enforcement of any arbitration award, CTCLUSI expressly waives its sovereign immunity from suit by Jordan Cove, JCEP and PCGP and consents to be sued in the Oregon state courts or, if Oregon state courts lack jurisdiction over the suit, then in the United States District Court for the District of Oregon and appeals may be made to the United States Court of Appeals for the Ninth Circuit and the United States Supreme Court.

- (b) Relief against the Tribe is specifically limited to the following actions and remedies:
 - (1) Injunctive relief as necessary to enforce arbitration awards or orders pursuant to Section 3.10.
 - (2) An Action to compel arbitration, once the Tribe has provided written notice to agree to arbitration pursuant to Subsection 3.10(f).

3.12 Term and Termination

- (a) This Agreement shall be for a term of ten (10) years from the Effective Date unless extended upon the mutual written agreement of the Parties.
- (b) This Agreement may be terminated by either Party by providing thirty (30) days written notice to the other Party. If this Agreement is terminated pursuant to this Section, then each party reserves all rights to argue that termination of this Agreement results in a violation of Applicable Laws and any permits, certifications or approvals related to the Project.

3.13 General Provisions.

- (a) If any term or provision of this Agreement is held invalid, illegal or unenforceable by a court of competent jurisdiction for any reason, the Parties agree to modify such provision to the extent required to render it valid, legal, or enforceable, and the remainder of this Agreement shall in no way be affected and shall remain valid and enforceable for all purposes.
- (b) All words in this Agreement shall be deemed to include any number or gender as the context or sense of this Agreement requires. The words "will," "shall," and "must" in this Agreement indicate a mandatory obligation subject to the terms hereof and Applicable Law. The use of the words "include," "includes," and "including" followed by one or more examples is intended to be illustrative and shall be deemed to be followed by the words "without limitation." The words "day" and "days" refer to calendar days unless otherwise stated. The words "month" and "months" refer to calendar months unless otherwise stated. The words "hereof," "hereto" and "herein" refer to this Agreement, and are not limited to the article, section, paragraph or clause in which such words are used.
- (c) The headings and captions contained herein are for the purposes of convenience and reference only and are not to be construed as a part of this Agreement. All references to any Section in this Agreement are to Sections of this Agreement, unless otherwise noted.
- (d) No third party shall be a beneficiary of a Party's rights or benefits under this Agreement, other than as expressly set forth herein.

- (e) NOTWITHSTANDING ANYTHING CONTAINED HEREIN TO THE CONTRARY, IN NO EVENT SHALL EITHER PARTY BE LIABLE TO THE OTHER PARTY WITH RESPECT TO ANY CLAIM ARISING OUT OF OR RELATING TO THIS AGREEMENT FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, OR INDIRECT LOSSES OR DAMAGES FROM ITS PERFORMANCE UNDER THIS AGREEMENT OR ANY FAILURE OF PERFORMANCE HEREUNDER OR RELATED HERETO, WHETHER ARISING OUT OF BREACH OF CONTRACT, TORT, STRICT LIABILITY OR OTHERWISE; provided, however, that the limitations of this clause (e) shall not apply to any rights to defense and indemnification of Jordan Cove, the Tribe or any other Indemnified Parties as provided elsewhere in this Agreement.
- (f) Except as the Parties may otherwise agree in writing or as otherwise provided herein, each Party shall bear its respective fees, costs and expenses in connection with this Agreement and the transactions contemplated hereby.
- (g) No waiver by any Party, whether express or implied, of any right under any provision of this Agreement shall constitute a waiver of such Party's right at any other time or a waiver of such Party's rights under any other provision of this Agreement unless it is made in writing. No failure by any Party hereto to take any action with respect to any breach of this Agreement or default by another Party shall constitute a waiver of the former Party's right to enforce any provision of this Agreement or to take action with respect to such breach or default or any subsequent breach or default by such latter Party.
- (h) **Each Party acknowledges that it and its attorneys have been given an equal opportunity to draft, review, negotiate, and modify the terms and conditions of this Agreement and that any rule of construction to the effect that ambiguities or any other matters are to be resolved against the drafting party, or any similar rule operating against the drafter, shall not be applicable to the construction or interpretation of this Agreement.**
- (i) This Agreement shall apply to Jordan Cove's successors and assigns.
- (j) Any notice, demand, offer, or other written instrument required or permitted to be given pursuant to this Agreement shall be in writing signed by the Party giving such notice and shall be delivered by (1) hand, (2) same-day or overnight courier, (3) certified mail, return receipt requested, or (4) email to the other Party at the address set forth below:
- i. If to the Tribe:
- Confederated Tribes of Coos,

Lower Umpqua and Siuslaw Indians
1245 Fulton Avenue
Coos Bay, Oregon 97420
Attention: Tribal Council Chairman
E-mail: MCorvi@ctclusi.org (with CC to SScott@ctclusi.org and
scott@wheatlawoffices.com)


ii. If to Jordan Cove:

Jordan Cove Energy Project L.P.
Pacific Connector Gas Pipeline L.P.
c/o Jordan Cove LNG L.L.C.
5615 Kirby Drive, Suite 500
Houston, Texas 77005
Attention: Manager Tribal Affairs
E-mail: (with a CC to
neades@pembina.com)

Each Party shall have the right to change the place to which notice shall be sent or delivered by sending a written notice to the other Party in like manner. Notices, demands, offers or other written instruments shall be deemed to be received: (1) if delivered by hand, by same-day or overnight courier service, or certified mail on the date actually received at the address of the intended recipient; or (2) if sent by email, upon actual receipt.

[Signature pages follow.]

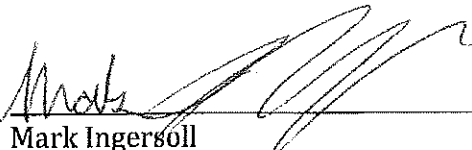
SIGNATORIES:



JORDAN COVE ENERGY PROJECT, LP
by its General Partner, Jordan Cove Energy Project, L.L.C.
and Pacific Connector Gas Pipeline, LP
by its General Partner, Pacific Connector Gas Pipeline, L.L.C.

7/26/18
Date

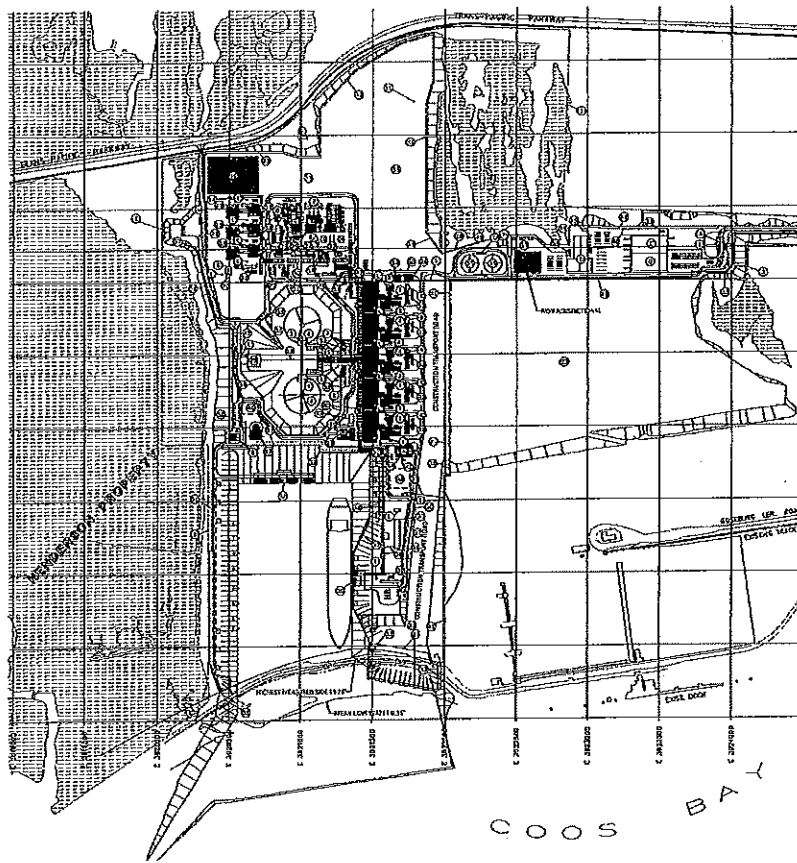
SIGNATORIES:



Mark Ingersoll
Tribal Council Chairman
Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians

7-20-2018
Date

Exhibit A
Project Area



ITEM	FACILITY LEGEND
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2	2. AIRCRAFT
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ITEM	FACILITY LEGEND
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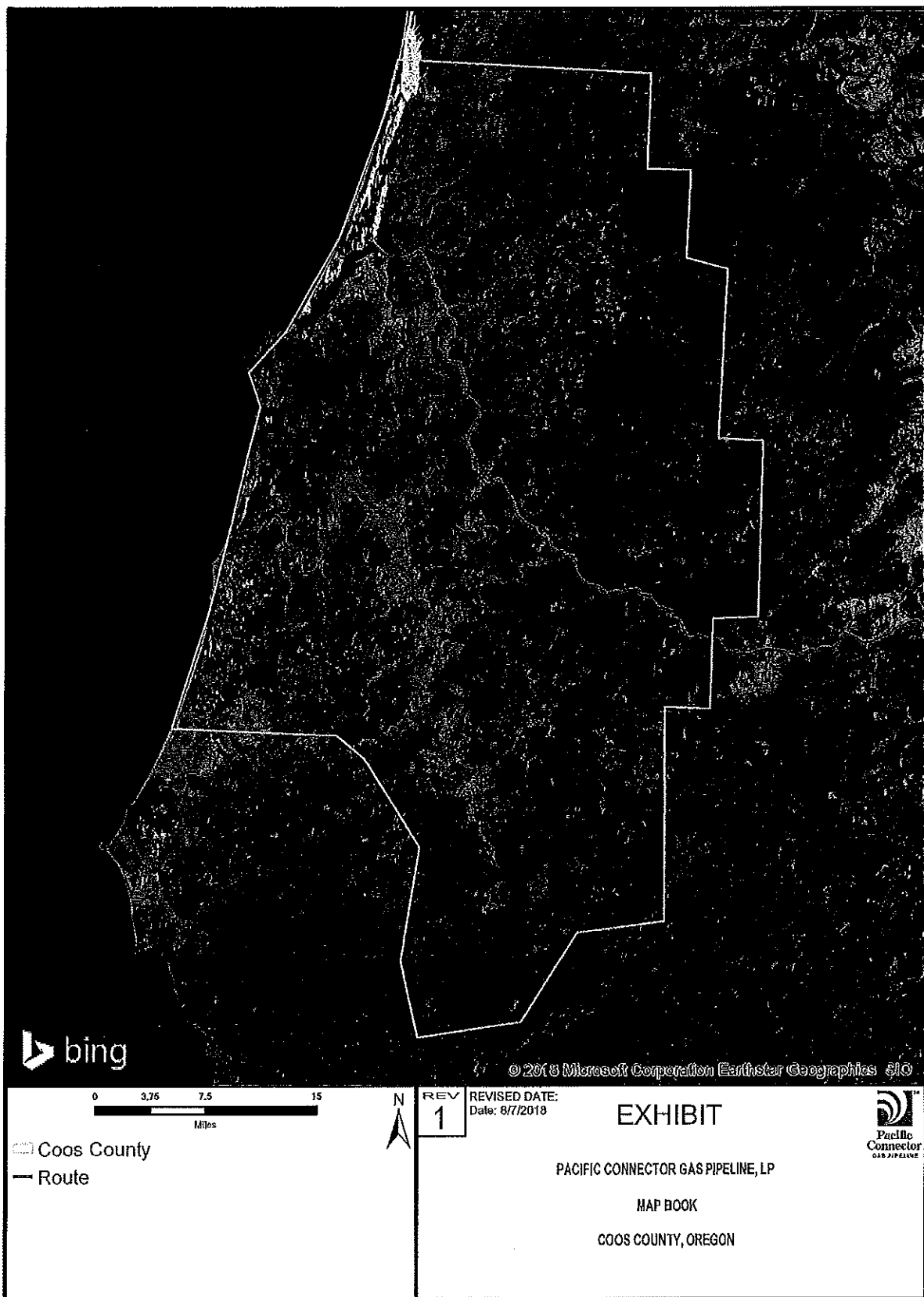


Exhibit "B"
Unanticipated Discovery Plan



Jordan Cove LNG, LLC

DRAFT

Unanticipated Discovery Plan

Jordan Cove Energy Project

and

Pacific Connector Gas Pipeline Project

July 2018

Unanticipated Discovery Plan

1.0 Introduction

This document provides an Unanticipated Discovery Plan (UDP) that will be followed by Jordan Cove Energy Project, LP (JCEP) and Pacific Connector Gas Project, LP (PCGP) (JCEP and PCGP are collectively referred to as "Jordan Cove"). JCEP is seeking authorization from the Federal Energy Regulatory Commission (FERC) to site, construct and operate a natural gas liquefaction and liquefied natural gas (LNG) export facility on the North Spit of Coos Bay, Oregon (LNG Terminal). PCGP will simultaneously be seeking an authorization from FERC to construct and operate an approximately 229-mile long, 36-inch diameter natural gas transmission pipeline from near Malin, Oregon to the LNG Terminal (the LNG Terminal and Pipeline are collectively referred to as the "Project"). This UDP provides the procedures Jordan Cove, its personnel and consultants will follow in the event that unanticipated discoveries of historic properties, archaeological objects, archaeological sites, or human remains, funerary objects, sacred items and items of cultural patrimony are made during the construction and operation of the Project.

Potential unanticipated discoveries fall into two primary classes. The first class includes archaeological objects, materials or features such as hearths, pit features, or remains of dwellings. The second class consists of human remains, funerary objects, sacred items and items of cultural patrimony. The two classes are governed by different laws and regulations and require different treatment procedures.

Procedures for dealing with unanticipated discovery of human remains are outlined in Section 3.0, and procedures for dealing with the unanticipated discovery of archaeological objects are outlined in Section 4.0.

This UDP is intended to:

- Comply with applicable Federal and State and local laws and regulations -- the National Historic Preservation Act of 1966, 16 U.S.C. § 470 and its implementing regulations at 36 CFR Part 800, 36 CFR Part 63; 36 CFR Part 61; the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), 25 U.S.C. §§ 3001 *et. seq.* and its implementing regulations at 43 CFR Part 10; Archaeological Resources Protection Act of 1979, as amended and its implementing regulations at 36 CFR Part 296; Oregon Revised Statutes (ORS) 97.740-97.760 for Indian Graves and Protected Objects; ORS 358.905-358.961 for the Protection of Archaeological Objects and Sites; ORS 390.235 for Archaeological Permit Requirements; OAR 736-051-0080 through 0090 Administrative Rules for Oregon Archaeological Excavation Permits; the Government to Government Cultural Resource Cluster Group "Treatment of Native American Human Remains Discovered Inadvertently or Through Criminal Investigations on Private and Non-Federal Public Lands in Oregon"; and Federal Energy Regulatory Commission's Guidelines for Reporting on Cultural Resources Investigations for Pipeline Projects (July 2017);
- Describe to regulatory and review agencies the procedure Jordan Cove and its contractors will follow to address the unanticipated discovery of archaeological

objects, historic properties or human remains, funerary objects, sacred items and items of cultural patrimony; and

- Provide direction and guidance to Project personnel as to the proper procedure to be followed should an unanticipated discovery occur.
- Provide contact information for all parties that require notification – State police, LCIS, SHPO and affected Tribes.

2.0 Training and Orientation

Jordan Cove, in consultation with the FERC, will designate a Cultural Resources Coordinator (CRC) who will be responsible for all archaeological materials and historic properties-related activities on the Project. The CRC will be a professional archaeologist (meeting the Secretary of the Interior's Guidelines as defined in 36 CFR 61). For practical purposes, the CRC may designate an Environmental Inspector (EI) or other supervisor to provide notifications required under this UDP but may not delegate any of the CRC's other responsibilities, unless the EI is a professional archaeologist and meets the requirements of 36 C.F.R. Part 61, in which case the EI may act in the CRC's place if the CRC is unavailable. The CRC will provide archaeological/cultural resource orientation for Jordan Cove and advise construction contractors and personnel on the procedures to follow in the event that an unanticipated discovery is made. Training will occur as part of the pre-construction on-site training program for foremen, environmental inspectors (EIs), construction supervisors, and all other supervisory personnel who supervise any construction or inspection activities. Training will involve both general and detailed instructions regarding how to follow the requirements of the UDP, basic archaeological artifact and site identification, and an overview of the state and federal laws pertaining to the protection of archaeological resources. General instructions shall include:

- Ensure that all construction supervisors have contact information for the CRC.
- Stop work immediately if archaeological objects (artifacts, historic or prehistoric features [wells, privies, shell middens, etc.], bones, or any item suspected of being archaeological), funerary objects, sacred items and items of cultural patrimony are identified.
- Contact the construction supervisor immediately. The construction supervisor shall notify the CRC or its designee as soon as possible.
- Restrict access to the discovery.
- Drawings, photographs, or analysis will not be permitted without consultation and approval from the appropriate Indian Tribes.
- The discovery will not be shared with the media or individuals not pertinent to the assessment or protection of the remains.
- Comply with all unanticipated discovery procedures.
- Treat human remains, funerary objects, sacred objects, and objects of cultural patrimony with dignity and respect. Do not touch any human remains.
- A description of the potential penalties for failure to report discoveries or to comply with the procedures outlined in this UDP.
- The penalties that could be incurred by anyone who illegally collects or destroys any archaeological objects, archaeological sites, or historical artifacts, funerary

objects, sacred objects and objects of cultural patrimony and associated materials and/or their context.

3.0 Procedures for the Inadvertent Discovery of Human Remains or Burial Sites

Any human remains, burial sites, or burial related objects that are discovered during construction will at all times be treated with dignity and respect.

Pursuant to ORS 97.745(4), if suspected Native American remains are encountered on private or non-federal public lands, Jordan Cove will notify the state police, SHPO, the Oregon Commission on Indian Services (OCIS), the FERC, and the appropriate Indian Tribe(s) as soon as possible but in all cases, within twenty-four hours of the determination.

In accordance with NAGPRA, if the remains are found on federal lands, in addition to contacting those entities listed in the previous paragraph, the CRC will immediately contact the applicable federal land management agency in accordance with the requirements of 43 C.F.R. § 10.4. The federal land management agency will then be responsible for further contact with any appropriate Indian Tribes.

Indian Tribes that may have ancestral burial sites in the Project area include, but are not limited to, the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians, the Confederated Tribes of Grand Ronde, the Confederated Tribes of Siletz, the Coquille Indian Tribe, the Cow Creek Band of Umpqua Tribe of Indians, and the Klamath Tribes.

The CRC will, in all cases of a potential discovery, complete a form or provide other written documentation acceptable to FERC and SHPO to document a potential discovery. The CRC and all EIs will comply with the following procedures:

- A. If any Jordan Cove personnel or contractors believe he or she has made an unanticipated discovery of human remains (skeletal, teeth or hair), the remains will not be moved or disturbed, and the construction supervisor shall be immediately notified. The construction supervisor shall, in turn, immediately notify the CRC and the appropriate EI.
- B. The CRC or its designee will be responsible for taking appropriate steps to protect the discovery. The construction activity that resulted in the exposure of the discovery will be immediately halted, followed, as soon as possible, by the cessation of all other ground-disturbing activity within 300 ft (91 m) of the discovery, unless a greater distance is required by SHPO to protect a discovery. Construction activities may continue elsewhere on the Project site. After all construction activity within 300 ft (91 m) of the discovery has been halted, the following steps will be taken to ensure that no further disturbance occurs to the discovery:
 - i) secure an area at least 300 ft (91 m) around the discovery using orange safety fencing or a similar material, as necessary;
 - ii) prevent vehicle traffic through the area immediately surrounding the discovery except as necessary to remove vehicles and equipment already present in the area;
 - iii) consult with the SHPO to determine whether a 24-hour guard is needed to ensure that the find is secure at all times or consult with the applicable federal land management agency if the lands are federal;

- iv) limit access to the area surrounding the discovery to essential personnel, who will be identified by the CRC; and
- v) If the remains are suspected to be Native American, no photographs will be allowed unless approval is provided by the appropriate Indian Tribe(s). If the state police determine the discovery to be a crime scene, then any photographs will be taken at the direction of the state police.

C. The CRC or its designee will immediately call the state police, SHPO, the LCIS, the appropriate Indian Tribe(s) and FERC, who will, according to their responsibilities, examine the discovery and determine whether it should be treated as a crime scene or as a human burial/cemetery. The CRC or its qualified designee will also have a physical anthropologist examine the discovery to concur with the coroner on whether the remains are human and whether or not they are contemporary. The physical anthropologist will have been previously agreed upon by the Indian Tribe(s). In the event of a disagreement between the coroner and the physical anthropologist, the opinion of the physical anthropologist shall control. A forensic anthropologist may also be required to determine whether the remains are of Native American ancestry. If the remains are determined to be or suspected to be of Native American ancestry, no photographs will be taken. If the discovery occurs on federal lands, the CRC will also immediately notify the applicable federal land management agency, and the Federal Land Archaeologist, if qualified to do so, will make, in consultation with the appropriate Indian Tribe(s), the determination as to whether the remains are human and of possible Native American ancestry. If the Federal Land Archaeologist is not qualified to determine whether the remains are human, the Federal Land Archaeologist will engage a forensic anthropologist or osteo-archaeologist, who shall consult with the appropriate Indian Tribes to determine whether the remains are of Native American ancestry. All work within 300 ft buffer around the discovery will halt until permission to resume work is provided by FERC, the SHPO or the applicable federal agency for finds on federal lands.

D. If the remains are determined to be non-human by the archaeologist and/or forensic anthropologist, and there are no archaeological objects identified in association with the remains, then the archaeologist or forensic anthropologist will inform the CRC, who will notify the Construction Superintendent that construction can resume. The CRC will complete the Discovery Form and take photographs of any find. The photographs shall be sufficient for a trained archaeologist to determine that the remains are not human by reviewing them. The Discovery Form and photographs shall be submitted to FERC, the SHPO and the appropriate Indian Tribe(s) within 15 days of the discovery.

E. If the remains are determined to be non-human by the archaeologist and/or forensic anthropologist, but associated with an archaeological site, the CRC shall follow the procedures identified in Section 4 below.

F. If the remains are determined to be human and associated with a crime scene by the appropriate county coroner, then the CRC shall immediately inform the Construction Superintendent to follow the coroner's protocol for removal of the remains. The CRC will complete the Discovery Form and take photographs of the find to the extent allowed by State law. The Discovery Form and photographs shall be submitted to FERC and the SHPO within 15 days of the discovery.

G. If the remains are determined to be human, not to be the result of criminal activity and not within an archaeological context, and not of Native American Ancestry, the CRC or its designee will notify the SHPO as soon as possible but in all cases within

24 hours. The SHPO will be kept informed of all discussions regarding the remains until their final status is resolved.

The CRC or its designee will contact the OCIS as well as all appropriate Indian Tribes and notify them of the discovery by phone or e-mail as soon as possible but in all cases within twenty-four hours of the discovery. The appropriate Indian Tribe(s) also will be notified in writing within three days of the discovery, and this notification shall include information on the site of the human remains along with the name of the person or agency in charge of the find.

H. If the remains are determined to be human, within an archaeological context, and of Native American ancestry, the CRC shall follow the steps in Section 4 subparagraphs (5) - (13) for the unanticipated discovery of an archaeological site and the following:

- Notifications to the appropriate agencies and Indian Tribes shall indicate that human remains have been identified.
- No photographs shall be taken of Native American human remains.
- No further assessment shall be conducted until a Tribal representative(s) is present.
- The public and non-essential personnel will be excluded from the site.
- The discovery will not be shared with the media or any individuals who are not required for the assessment and protection of the remains.
- The CRC shall request that the appropriate Indian Tribe(s) inform them of any requests they have regarding the treatment of the remains and such requests shall be honored to the greatest extent possible.
- Field investigations to determine the NRHP-eligibility of archaeological materials shall avoid contact with the human remains.
- The CRC will consult with the SHPO and appropriate Tribe(s) to develop field investigations designed to evaluate the potential for additional human remains to be present without disturbing them.
- The CRC will consult with the Construction Superintendent, the SHPO, and appropriate Tribe(s) to determine if the remains can be avoided by an alternative construction technique. If such a technique is possible, construction shall resume upon approval from SHPO and will be monitored by a professional archaeologist and the appropriate Indian Tribe(s) if they request to do so.
- If disturbance of the remains cannot be avoided and the remains are not part of a crime scene or are part of an historic cemetery, the CRC will consult with the SHPO and appropriate Indian Tribe(s), if applicable, or likely descendants to develop a treatment plan. The treatment plan will outline measure to be implemented, including addressing how the remains should be excavated, repatriated, reinterred and reported. The treatment plan will clearly state that Jordan Cove shall be responsible for all costs associated with implementation of an approved treatment plan. Human remains will not be permanently curated.
- If disturbance of the remains cannot be avoided and the remains are part of an archaeological site that will also be affected by construction, the CRC will consult with the SHPO and appropriate Tribe(s) to develop a treatment plan for the site that includes provisions for temporary curation, reporting, repatriation

and re-interment of the human remains and disposition of any artifacts. The treatment plan will be implemented after approval from the SHPO.

I. The FERC will consult with the appropriate Indian Tribes to determine best practices for handling human remains of Native American ancestry. No work is to take place 300 feet of the area of the delineated discovery until a treatment plan has been approved and implemented.

J. Jordan Cove will offer to compensate the appropriate Indian Tribe(s) for their time and expenses related to any activities associated with the implementation of this UDP. In the event Jordan Cove has entered into a cost recovery agreement with a Tribe addressing such costs, Jordan Cove will abide by the terms of such agreement.

K. Jordan Cove will be responsible for any reburial costs associated with any human remains encountered during construction of the Project that are not associated with a criminal site.

L. If multiple sets of remains are found, which are determined to be of Native American ancestry, Jordan Cove will consult with the appropriate Tribe(s) to determine the appropriate action, including rerouting around any such sites.

4.0 Procedures for the Inadvertent Discovery of Archaeological Objects or Sites

In Oregon, it is illegal to disturb an archaeological site or object on private or non-federal public land without obtaining an archaeological excavation permit (ORS 358.920[1] [a]). When archaeological objects or archaeological sites are identified inadvertently, this law applies once the discovery is determined to be archaeological. Similarly, federal laws prohibit the disturbance of archaeological resources on federal lands in the absence of a valid permit (43 C.F.R. §§ 7.5 and 7.6). The CRC and the EIs will be aware of and follow the procedures set out below:

A. If any Jordan Cove personnel or contractors believe he or she has found archaeological object or an archaeological site, all work within 100 ft (30 m) of the discovery will stop and the Construction Superintendent will be notified immediately. The Construction Superintendent shall notify the EI and the CRC or its designee as soon as possible but no later than within 24 hours of the discovery. The area of work stoppage will be adequate to provide for the security, protection, and integrity of the objects found and therefore may need to be greater than 100 ft depending on the nature of the find. Examples of archaeological objects include but are not limited to:

- i) An area of charcoal or charcoal-stained soil;
- ii) An arrowhead, stone tool, or stone flakes (chips);
- iii) A cluster of animal bones or burned rocks in association with stone tools or flakes (chips);
- iv) A cluster of tin cans, bottles, or other historic materials older than 50 years that have not previously been identified as objects that can be removed; or
- v) A dense pocket of shells.

B. The CRC or the EI onsite will make an initial determination regarding whether the discovery consists of an archaeological site and/or an archaeological object.

Appropriate Indian Tribes shall be notified of such determination. The CRC or EI shall prepare a report regarding the determination. The report shall be provided to Appropriate Indian Tribes for review and comment. If the CRC or EI initially determines it is not an archaeological site or object and an Indian Tribe disagrees, the SHPO shall make the final determination.

C. If it is determined that the discovery consists of archaeological objects or a site, the Construction Superintendent, CRC, and/or EI will take appropriate steps to protect the discovery site. At a minimum, the construction activity that resulted in the exposure of the discovery will be immediately halted, followed as soon as possible by the cessation of all other ground-disturbing activity within 100 ft (30 m) of the discovery. Vehicles, equipment, and unauthorized personnel will not be permitted to traverse the buffer zone around the site, provided, however, a travel corridor will be allowed along the edge of the buffer zone furthest removed from the discovery, provided that:

- a) vehicles will not be allowed to pass closer than 45 ft from the discovery;
- b) the edge of the travel corridor nearest the discovery will be secured using orange safety fencing or similar material; and
- c) the CRC will consult with the SHPO to determine whether a 24-hour guard is needed to ensure that the find is secure at all times or if the discovery occurs on federal lands, the CRC will consult with the applicable federal land management agency regarding implementation of any security measures.

D. Work in the immediate area will not be re-started until treatment of the discovery has been completed and authorization to proceed has been provided by FERC and/or the SHPO as applicable, and after any required permits have been issued.

E. The buffer zone of 100 ft (30 m) will be established using orange safety fencing or a similar material.

F. The CRC or its qualified designee will arrange for the discovery to be evaluated by a professional archaeologist as soon as possible. The archaeologist must meet the Secretary of the Interior standards as described in 36 CFR Part 61. The appropriate Indian Tribe(s) shall be notified, afforded and opportunity to monitor the examination and provide comments on any written reports provided to Jordan Cove by the archaeologist. The professional archaeologist shall examine the find within 48 hours of notification. The archaeologist will recommend whether the discovery is potentially eligible for listing in the National Register of Historic Places (NRHP) pursuant to 36 CFR §800.4 and 36 CFR Part 63. The CRC will consider the archaeologist's conclusion, make its own recommendation, and then submit documentation, including any documentation or comments provided by an Indian Tribe(s), about the find, the archaeologist's recommendation and its recommendation to FERC, the SHPO and any appropriate Indian Tribe(s) for concurrence within 72 hours of receipt of the professional archaeologist's recommendation. The documentation will be in memorandum form with appropriate photographs included to facilitate FERC and SHPO's review of the conclusions reached.

G. If FERC, in consultation with the SHPO, Jordan Cove, and the appropriate Indian Tribe(s) determines that the discovery is eligible for listing under the NRHP ("NRHP-eligible") as a pre-contact deposit, FERC, Jordan Cove, the SHPO, and the

appropriate Indian Tribe(s) will consult to determine if the Project will adversely affect the resource pursuant to 36 CFR 800.5.

H. If FERC, in consultation with the SHPO, Jordan Cove, and the appropriate Indian Tribe(s) determines that the discovery is not NRHP-eligible, then Jordan Cove will prepare a memorandum to this effect and deliver it to the SHPO and the FERC for concurrence. A copy will also be provided to the appropriate Indian Tribe(s). To the extent any Indian Tribe disagrees with the conclusions in such memorandum, the Indian Tribe reserves its rights pursuant to paragraph L below.

I. If FERC, in consultation with the SHPO, Jordan Cove, and the appropriate Indian Tribe(s) determines that the resource is NRHP-eligible and that the Project will have an adverse effect on it, Jordan Cove will first propose whether or not avoidance or minimization of adverse effects is possible via alternative construction techniques.

J. If it is determined that avoidance or minimization of adverse effects via alternative construction techniques to an NRHP-eligible site is not possible, then Jordan Cove will develop a treatment plan in consultation with the appropriate Indian Tribe(s), designed to mitigate the adverse effect pursuant to 36 CFR 800.6. Jordan Cove will consult with the FERC, SHPO, and the appropriate Indian Tribe(s) and follow state and federal regulations for applicable treatment measure(s). Jordan Cove will provide FERC, the SHPO and the appropriate Indian Tribe(s) with a draft treatment plan for review and comment. The SHPO will provide approval of the treatment plan, which will be implemented in accordance with any schedule set out in the plan. Treatment measures may include mapping, photography, subsurface testing and sample collection, complete data recovery, or other activities. Jordan Cove will provide a report on the methods, analysis, and results in compliance with 36 CFR 800.11 and in accordance with the treatment plan. The specific work plan and schedule for these procedures will be included in the treatment plan.

K. If FERC, in consultation with the SHPO, Jordan Cove, and the appropriate Indian Tribe(s) determines that the resource is NRHP-eligible but that the Project will not adversely affect it, then Jordan Cove will prepare a memorandum to this effect and deliver it to the SHPO and the FERC for concurrence and provide a copy to the appropriate Indian Tribe(s).

L. Jordan Cove will ensure that field investigations, research, analysis, reporting, and curation of any materials collected during these investigations are sufficiently funded and implemented and follow all federal and state guidelines and procedures. All treatment efforts shall be conducted under an Oregon permit for archaeological excavation (OAR 736-051-0080 through 0090).

M. If any Indian Tribe does not agree with the findings of the SHPO and Jordan Cove's archaeologist, such Tribe reserves the right to address its concerns with the Advisory Council on Historic Preservation pursuant to 36 C.F.R. Part 800, and otherwise reserves all rights under state and federal law to obtain relief.

N. Upon completion of the treatment plan, Jordan Cove will submit a summary report to the SHPO and appropriate Indian Tribe(s) within thirty (30) days of completion of the treatment plan. If archaeological data recovery is a component of the treatment plan, a full report will be submitted to the SHPO, appropriate Indian Tribes, and the OCIS in accordance with any schedule set out in the treatment plan.

5.0 Parties to Contact

Notice required under this UDP shall be made to those parties set out in the table below. Any party may update its contact information at any time. An effort will be made to update this information on an annual basis during the life of the Project.

Contacts for the Discovery of Archaeological Resources				
Organization	Name	Role	Contact Information	Mailing Address
Jordan Cove	To Be Determined	Cultural Resource Coordinator (CRC)	Office: Mobile: Email:	
Historical Research Associates	Bradley Bowden	Archaeological/ Historical Consultant	Office: (503) 247-1319 Direct: (971) 386-2042 Mobile: (206) 898-5781 Email: bbowden@hrassoc.com	1825 SE 7 th Ave, Portland, OR 97214
Oregon State Historic Preservation Office (SHPO)	Dr. Dennis Griffin	State Archaeologist	Office: (503) 986-0674 Fax: (503) 986-0793 Email: dennis.griffin@state.or.us	Heritage Conservation Division Oregon Parks and Recreation Dept., 725 Summer Street NE, Suite C, Salem, OR 97301-1266
Oregon State Historic Preservation Office (SHPO)	John Pouley	Assistant State Archaeologist	Office: (503) 986-0675 Fax: (503) 986-0793 Email: john.pouley@state.or.us	Heritage Conservation Division Oregon Parks and Recreation Dept., 725 Summer Street NE, Suite C, Salem, OR 97301-1266
Federal Energy Regulatory Commission (FERC)	Paul Friedman	FERC Cultural Resources Contact	Office: (202) 502-6353 Fax: (202) 208-0353 Email: paul.friedman@ferc.gov	888 First Street NE, Washington, D.C. 20426
Federal Energy Regulatory Commission (FERC)		Alternate FERC Contact	Office: Fax: (202) 208-0353 Email:	888 First Street NE, Washington, D.C. 20426
Federal Land Owners				
BLM Coos Bay District	William Kerwin	Archaeologist	Office: (541) 756-0100 Phone: (541) 751-4306-3246 Email: wkerwin@blm.gov	1300 Airport Lane North Bend, OR 97459

Contacts for the Discovery of Archaeological Resources				
Organization	Name	Role	Contact Information	Mailing Address
BLM— Medford District	Cheryl Foster-Curley	Archaeologist	Office: (541) 618-2200 Phone: (541) 618-2280 Email: cfostercurley@blm.gov	3040 Biddle Road Medford, OR 97504
BLM— Roseburg District	Molly Casperson	Archaeologist	Office: (541) 440-4930 Phone: (541) 440-3284 Email: mcasperson@blm.gov	777 NW Garden Valley Blvd. Roseburg, OR 97471
BLM— Lakeview District: Klamath Falls Resources Area	Laird Naylor II	Archaeologist	Office: (541) 883-6916 Phone: (541) 885-4139 Email: lnaylor@blm.gov	2795 Anderson Avenue, Bldg. #25 Klamath Falls, OR 97603
Umpqua National Forest	Christopher Kelly	Heritage Program Manager/Tribal Liaison	Office: (541) 957-3200 Phone: (541) 957-3350 Email:	2900 NW Stewart Parkway, Roseburg, OR 97471
Rogue River – Siskiyou National Forest	Melissa Schroeder	Heritage Program Manager/Tribal Liaison	Office: (541) 618-2200 Phone: (541) 618-2077 Email:	3040 Biddle Road, Medford, OR 97504
Fremont – Winema National Forest	John Kaiser	Klamath Ranger District Forest Archaeologist	Office: (541) 883-6714 Phone: (541) 947-6260 Email:	2819 Dahlia Street Suite A, Klamath Falls, OR 97601
Fremont – Winema National Forest	Amy Gowen	Tribal Government Relations	Office: (541) 883-6741 Email:	
Bureau of Reclamation Klamath Basin	Adam Nickels	Archaeologist	Office: (541) 883-6935 Fax: (916) 978-5005 Phone (916) 978-5053 Email:	6600 Washburn, Klamath Falls, OR 97603



Contacts for the Discovery of Human Remains				
Organization	Name	Role	Contact Information	Mailing Address
Oregon State Police	Sergeant Chris Allori		Office: (503) 731-4717 Mobile: (503) 708-6461 Dispatch: (503) 731-3030	
Coos Bay Area Command State Police	Lieutenant Jeff Lewis		Office: (541) 888-2677 Email: jeffrey.lewis@state.or.us	
Oregon Medical Examiner's Office	Karen Gunson	Oregon State Medical Examiner	Office: (971) 673-8200	

Contacts for the Discovery of Human Remains				
Organization	Name	Role	Contact Information	Mailing Address
Oregon Medical Examiner's Office	Eugene Gray	Forensic Administrator	Office: (971) 673-8200 Email: Eugene.Gray@state.or.us	
Oregon Medical Examiner's Office	James Olson, M.D.	Deputy State Medical Examiner-Southern Region	Office: (541) 440-4453	
Tribal Contacts				
Oregon Commission on Indian Services (OCIS)	Karen Quigley	Executive Director	Office: (503) 986-1067 Fax: (503) 986-1071 Email: Karen.Quigley@state.or.us	900 Court Street NE, Rm. 167, Salem OR 97301-1347
Coquille Indian Tribe	Kassandra Rippee	THPO & Archaeologist	Office: (541) 756-0904 ext. 1216 Mobile: (541) 808-5554 Fax: (541) 756-0847 Email: kassandraripee@coquilletribe.org	3050 Tremont Street, North Bend, OR 97459
Confederated Tribes of Coos, Lower Umpqua & Siuslaw Indians	Stacy Scott	THPO, Cultural Resources Protection Specialist	Office: (541) 888-7513 Mobile: (541) 297-5543 Fax: (541) 888-2853 Email: sscott@ctclusi.org	1245 Fulton Avenue, Coos Bay, OR 97420
Confederated Tribes of Grand Ronde	Briece Edwards	Deputy THPO	Office: (503) 879-2084 Fax: (503) 879-2126 Email: THPO@grandronde.org	9615 Grand Ronde Road, Grand Ronde, OR 97347
Confederated Tribes of Siletz	Robert Kentta	Cultural Resource Program Director	Office: (541) 444-2532 Home: (541) 444-2204 Mobile: (541) 351-0148 Fax: (541) 444-2307 Email: Rkentta@ctsi.nsn.us	PO Box 549, Siletz, OR 97380
Cow Creek Band of Umpqua Tribe of Indians	Jessie Plueard	THPO and Cultural Programs Manager	Office: (541) 677-5575 X5577 Fax: (541) 677-5574 Email: jpluard@cowcreek.com	2371 NE Stephens St. Suite 100, Roseburg OR 97470
The Klamath Tribes	Perry Chocktoot	Director of Culture and Heritage	Office: (541) 783-2219 X159 or (541) 891-5450 Fax: (541) 783-2764 x107 Email: perry.chocktoot@klamathtribes.com	PO Box 436, Chiloquin, OR 97624



Focused Development Suitability Analysis to Provisions of the Coos Bay Estuary Management Plan, Policy #30 Beaches and Dunes

0	31-Jul-19	Issued for Use	RFS/GDS/GAV			
REV	DATE	DESCRIPTION	BY	CHKD	APPVD	CO. APPVD
Total amount of pages including coversheet:						50
FOR CONTRACTOR DOCUMENTS	Contract No.		Contractor Document No.			Contractor Rev.
	PSC # SHN-005/SO1339					0
JCL DOCUMENT NUMBER	Proj. Code	Unit / Train	Discipline	Doc. Type	Orig. Code	Sequence No.
	J1	440	CNS	RPT	SHN	00003
						00

			
	Doc. No.: J1-440-CNS-RPT-SHN-00003-00		
	Rev.: 0	Rev. Date: 31-Jul-19	

Credentials

Revision Modification Log

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Document Title :		Rev. :	
Document No. :		Rev. Date :	

Page No.	Section	Change Description

Focused Development Suitability Analysis to Provisions of the Coos Bay Estuary Management Plan, Policy #30 Beaches and Dunes

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Prepared for:

Jordan Cove Energy Project L.P.



July 2019
619028



275 Market Ave., Coos Bay, OR 97420-2228

541-266-9890

Civil Engineering, Environmental Services, Geosciences, Planning & Permitting, Surveying

Reference: 619028

July 25, 2019

Mr. Wes Hill
Jordan Cove Energy Project
L.P. 201 Central Avenue
Coos Bay, OR 97420

Subject: J1-440-CNS-RPT-SHN-00003-00, Focused Development Suitability Analysis for the Jordan Cove Energy Project Relative to Provisions of the Coos Bay Estuary Management Plan, Policy #30 Beaches and Dunes

This report presents an assessment of development suitability for specific aspects of the Jordan Cove Energy Project (JCEP) relative to beach and dune areas under the jurisdiction of the Coos Bay Estuary Management Plan (CBEMP). This report supplements previous beach and dune assessments for individual elements within the JCEP, including a summary report provided in September 2015. This Policy #30 assessment builds upon the previous analyses and reporting, relative to newly identified project elements.

We trust that this report provides the necessary information relative to Coos County Policy #30 for the JCEP project. Should you have any questions, or require additional information, please contact us at your earliest convenience at 541-266-9890.

Respectfully,
SHN Engineers & Geologists

Ron Stillmaker, PE
Regional Principal

Gary D. Simpson
Geosciences Director

Giovanni Vadurro, CEG
Certified Engineering Geologist



Enclosures: Report

Reference: 619028

Focused Development Suitability Analysis to Provisions of the Coos Bay Estuary Management Plan, Policy #30 Beach and Dunes

Prepared for:

Jordan Cove Energy Project L.P.

201 Central Avenue

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Prepared by:



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July 2019

QA/QC:RFS

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Abbreviations and Acronyms

mgd	million gallons per day
(b)	background well
BMPs	Best Management Practices
CBEMP	Coos Bay Estuary Management Plan
CEG	Certified Engineering Geologist
DEQ	Oregon Department of Environmental Quality
FERC	Federal Energy Regulatory Commission
FEMA	Federal Emergency Management Agency
GRI	Geotechnical Resource, Inc.
GSI	Groundwater Solutions, Inc.
IND	industrial
JCEP	Jordan Cove Energy Project
LNG	liquefied natural gas
PE	Professional Engineer
QA/QC	quality assurance/quality control
SHN	SHN Engineers & Geologists
Water Board	Coos Bay North Bend Water Board

1.0 Introduction

This report presents an assessment of development suitability for newly identified elements of the Jordan Cove Energy Project L.P. (JCEP) relative to beach and dune areas under the jurisdiction of the Coos Bay Estuary Management Plan (CBEMP). This report supplements a summary of previous beach and dune assessments, which was included in a September 2015 report. This beach and dune assessment builds off the previous comprehensive discussion of the larger project.

Beach and dune areas within the CBEMP jurisdiction are defined based on their development potential. Portions of JCEP are proposed on lands identified on the "Special Considerations Map" and the related "Beaches and Dunes: Development Potential Map" (Figures 2 and 2A) within the CBEMP as areas of "Limited Development Suitability." These specific projects are identified in Table 1. As such, these areas of the proposed project are subject to the provisions of CBEMP Policy #30 (Coos County Comprehensive Plan, Appendix 3, Volume II), described below. The subject lands are located in CBEMP Zoning Districts 4-CS (Meteorological Station), IND/7-D (Industrial Waste Water Pipeline), and 3-WD (Port Laydown). Industrial and Port facilities are permitted within these zones, subject to the General Conditions that include consistency with Policy #30 requirements for development in beach and dune areas. Notwithstanding the above and the analysis under 3.1, portions of the Industrial Waste Water Pipeline are located within the Balance of County and thus do not require Policy 30 compliance. Lands not identified as Areas of Special Consideration in the CBEMP are not subject to Policy #30 criteria.

2.0 Project Description

The individual elements discussed in this assessment are included on Figure 1 and their intended uses are as follows:

Table 1 Facilities and Intended Uses

Facility	Intended Use
Industrial Wastewater Pipeline	Port and Industrial Facility
Port Laydown	Port and Industrial Facility
Meteorological Station	Port and Industrial Facility

Development of these facilities will result in a variety of development activities that potentially could impact dune areas in the project area absent impact minimization/mitigation measures during construction and operation. These activities include:

- Excavation and other ground disturbance of beach and dune areas related to development of industrial facilities.
- Placement of fill materials.
- Removal of existing vegetation.

The potential impacts associated with these activities and the strategies to minimize and/or mitigate them have been studied and described in a series of technical reports and planning documents during the conceptual phases of the project. These studies include:

- **Geotechnical Resource Inc.** (August 2, 2007). "Task Order No. 5 - Geotechnical Investigation, Proposed Jordan Cove LNG Facility, Coos County, Oregon." This is the project geotechnical report, including description of a thorough subsurface investigation of the site. Includes discussion of geologic hazards, including tsunami, seismic, and potential soil liquefaction. Recommendations for slope configuration and dewatering of excavations are provided in this report.
- **Geotechnical Resource Inc.** (August 24, 2007). "Task Order No. 4a. Site-Specific Seismic Hazard Study, Proposed Jordan Cove LNG Facility, Coos County, Oregon."
- **Groundwater Solutions, Inc.** (December 4, 2006). "Jordan Cove Groundwater Review." This is a technical report provided to Geotechnical Resources, Inc. to inform the geotechnical investigation. This report describes the groundwater conditions in the project area, the history and capacity of nearby wells, and the potential impacts related to excavation of the proposed Port Slip (discussed below).
- **Preliminary Erosion Control Plan.** A preliminary erosion plan was prepared with a variety of sand stabilization methods that are currently being utilized in the project area. The plan provides recommendations for erosion control measures during construction.

3.0 CBEMP Policy #30 (Strategy 2)

The subject lands are considered "Beach and Dune Areas with Limited Development Suitability" because they are mapped as areas of "open sand"; two interdune map units ("wet interdune" and "wet deflation plain"; both above the elevation of ocean flooding); and "younger stabilized dunes" on the CBEMP Special Considerations Map (Figure 3). The proposed JCEP activities/uses do not include areas mapped as "older stabilized dunes"; "active foredunes"; or interdune areas subject to ocean flooding," which are areas deemed not suited for development. Determination of areas subject to ocean flooding are defined by topographical data (LiDAR and GPS survey) applied to Federal Emergency Management Agency (FEMA) flood mapping of the Base Flood for the Coos Bay estuary.

As portions of the proposed development are associated with relevant dune forms with Limited Development Potential, they are subject to the requirements of CBEMP Policy #30.

- ***Policy #30: Restricting Actions in Beach and Dune Areas with "Limited Development Suitability" and Special Considerations for Sensitive Beach and Dune Resources***
 1. *Coos County shall permit development within areas designated as "Beaches and Dune Areas with Limited Development Suitability" on the Coos Bay Estuary Special Considerations Map only upon the establishment of findings that shall include at least:*
 - a. *The type of use proposed and the adverse effects it might have on the site and adjacent areas;*

- b. Temporary and permanent stabilization programs and the planned maintenance of new and existing vegetation;*
- c. Methods for protecting the surrounding area from any adverse effects of the development;*
- d. Hazards to life, public and private property, and the natural environment which may be caused by the proposed use; and*
- e. Whether drawdown of groundwater would lead to loss of stabilizing vegetation, loss of water quality, or intrusion of saltwater into water supplies.*

This report is not intended to address whether a use is appropriate with regard to any adverse effects associated with the development, public health and safety, or hazards to the natural environment to the extent that it is not related to the geotechnical issues considered in Policy #30.

The five Policy #30 criteria for each of the individual project elements are discussed below.

3.1 Industrial Wastewater Pipeline

a. Proposed use and potential adverse effects

The Industrial Wastewater Pipeline is a buried 16-inch diameter PVC pipe that will convey project wastewater to the existing Treatment Lagoon west of the proposed LNG plant site (see Figure 1). The pipeline alignment follows the Trans-Pacific Parkway (it is to be embedded in the shoulder) through areas shown on the Special Considerations Map as Younger Stabilized Dune, Wet Deflation Plain, and Open Dune Sand. Construction of the pipeline will require trenching along the shoulder of the Trans-Pacific Parkway, through areas that are previously disturbed.

Construction activities associated with pipeline construction are subject to potential impacts related to vegetation removal and the disturbance of loose, sandy soils. Erosion potential is high, and there is a potential for sand migration once previously stabilized soils are disturbed, although we note the pipeline alignment is essentially flat-lying and borders the paved roadway. The project Erosion Control Plan (ESCP), which is attached as Exhibit A, describes short-term best management practices for mitigation of sand migration during construction, and provides a variety of methods for long-term stabilization of finished construction areas. The primary long-term erosion control strategy will be through vegetative stabilization. These proposed mitigation measures for grading, slope configuration, and stabilization of disturbed areas are all commonly used methods that have been effective in the site vicinity for previous industrial applications. The ESCP has been submitted to DEQ for review and approval in conjunction with a 1200C authorization application for the project.

b. Temporary and permanent stabilization programs and maintenance of vegetation

Native or reworked dune sand is a loose, cohesionless granular material that is highly susceptible to erosion by wind, water, and mechanical disturbance. The project erosion control plan will define the methods for temporary and permanent stabilization of the loose sands at the site. The project will require the above-referenced erosion control permit (Oregon Department of Environmental Quality [DEQ] 1200C) and an upland erosion and re-vegetation and maintenance plan from the Federal Energy Regulatory Commission (FERC). These permits will include the proposed ESCP BMP measures described in Exhibit A, which will ensure implementation of binding temporary and permanent stabilization programs including both monitoring and performance criteria. Monitoring requirements stay in effect until permanent stabilization is in place. During the construction phase of the pipeline, erosion and sediment control will be addressed through implementation of Best Management Practices (BMPs) required by the 1200C permit. BMPs to be utilized are consistent with the Construction Stormwater Best Management Practices Manual, March 2013, DEQ, Water Quality Division. BMPs defined in that Manual which are specific to the pipeline include: 2.1, Preserve Existing Vegetation, 2.3 Reestablish Vegetative Cover, and 2.24 Sediment Fence. Other BMPs will be implemented if determined applicable.

Stabilization of loose, sandy soils along the pipeline corridor will be achieved through the re-establishment of vegetation. Stabilization through re-vegetation has been the most common method to mitigate loose sand in the area, and is likely to be the predominant long-term stabilization method used for the stabilization of shallow disturbed soils on flat or low gradient ground. Vegetation used in the stabilization program will consist of predominantly native species suited to the unique site soils and climate (drought and salt tolerant). Stabilization of the sandy soils through the re-establishment of vegetation has been effective at a number of sites on neighboring industrial properties and along the Trans-Pacific Highway in the past.

c. Methods for protecting the surrounding areas from adverse effects

Once construction of the wastewater pipeline has been completed, the buried pipeline will have minimal potential to generate adverse effects on surrounding areas, specifically nearby dunes and interdune areas.

As described above, the project will be subject to State DEQ and FERC permits that require mitigation of erosion, re-vegetation, and monitoring of permanent stabilization measures. Successful long-term stabilization of disturbed areas associated with adjacent industrial sites and along the Trans-Pacific Highway demonstrates the feasibility of JCEP to avoid impacts to surrounding dune areas through conventional, commonly used engineering methods.

d. Hazards to life, public and private property, and the natural environment

Development of the subject pipeline will involve routine earthwork and construction activities that will not cause hazards to life, property, or the natural environment. Once complete, the pipeline will be a buried facility that is inert relative to the surrounding environment. Standards of practice, regulatory oversight, and occupational hazard reduction programs dictate the level of workmanship, ensure worker safety, and minimize the risk of hazards to the environment.

Whether drawdown of groundwater would lead to loss of stabilizing vegetation, loss of water quality or intrusion of saltwater into water supplies

The proposed buried wastewater pipeline will have no impact on regional groundwater levels. As such, there will be no impact to stabilizing vegetation, or impacts to regional water quality.

3.2 Port Laydown

a. Proposed use and potential adverse effects

The "Port Laydown" site is a construction laydown for temporary storage of topsoils removed from the LNG Terminal site and possibly other construction supplies (steel, pipe, fittings) and office trailers. The subject area is flat-lying ground that occurs along the Coos Bay waterfront, south of the main project area (see Figure 1). The site is south of areas shown on the CBEMP map as Open Dune Sand. The area is currently an undeveloped area open to camping, and contains some disturbed areas; invasive plants (European beachgrass, Scotch Broom) cover much of the site.

The primary potential impacts at the Port Laydown are related to surface disturbance, removal of vegetation, and subsequent erosion of loose dune sands. Native or reworked dune sand is a loose, cohesionless granular material that is highly susceptible to erosion by wind, water, and mechanical disturbance.

b. Temporary and permanent stabilization programs and maintenance of vegetation

The project erosion control plan will define the methods for temporary and permanent stabilization of the loose sands at the site. As with the Industrial Waste Water Pipeline, the project will require an erosion control permit (Oregon Department of Environmental Quality [DEQ] 1200C) and an upland erosion and re-vegetation and maintenance plan from the Federal Energy Regulatory Commission (FERC). These permits will dictate both temporary and permanent stabilization programs, and include both monitoring and performance criteria. Monitoring requirements stay in effect until permanent stabilization is in place. During the construction phase of the laydown area and during use, erosion and sediment control will be addressed through implementation of Best Management Practices (BMPs) required by the 1200C permit. The specific BMPs to be utilized at the Port Laydown site are presented in Section 6 of the LNG Terminal Erosion and Sediment Control Plan, March 26, 2019, attached as Exhibit B, and it is anticipated that these measures will be required under the local DEQ 1200C authorization. BMPs to be utilized are defined in the Construction Stormwater Best Management Practices Manual, March 2013, DEQ, Water Quality Division. BMPs defined in that Manual which are specific to the laydown area include: 2.1, Preserve Existing Vegetation, 2.3 Reestablish Vegetative Cover, 2.8 Dust Control, 2.16 Straw Wattles, 2.19 Gravel Construction Entrance and Wheel Wash and 2.24 Sediment Fence. Other BMPs will be implemented if determined applicable.

As described above, the project proponents have identified a variety of mitigation methods to abate erosion of loose sands. Stabilization through re-vegetation has been the most common

method to mitigate loose sand in the area, and is likely to be the predominant long-term stabilization method used for the stabilization of shallow disturbed soils on flat or low gradient ground. Vegetation used in the stabilization program will consist of predominantly native species suited to the unique site soils and climate (drought and salt tolerant).

c. Methods for protecting the surrounding areas from adverse effects

Blowing dune sand generated on the site by soil disturbance is the most likely offsite impact. Therefore, placement of erosion mitigation will reduce the potential for offsite impacts to a less than significant level. The proposed Port Laydown has a low potential to generate adverse effects that would impact surrounding beach- and dune-related landforms assuming that erosion mitigation occurs in a timely manner.

d. Hazards to life, public and private property, and the natural environment

The proposed Port Laydown is a storage area that will not expose the public to life-threatening hazards, and will not it pose hazard to public or private property or the natural environment.

e. Whether drawdown of groundwater would lead to loss of stabilizing vegetation, loss of water quality or intrusion of saltwater into water supplies

Development of the Port Laydown storage area will not impact groundwater resources in the region. As such, there will be no impact to stabilizing vegetation related to changes in the piezometric surface, or impacts to regional water quality.

3.3 Meteorological Station

a. Proposed use and potential adverse effects

A meteorological station is proposed along the coast near the northwest corner of the former "Pulp Mill Effluent Holding Lagoon", as shown on the CBEMP map. The Effluent Lagoon is now a wetland. The station will be mounted on an approximately 40-foot high lattice tower or wooden pole, with a 30-foot by 30-foot triangular or square footprint. The area is shown as a Wet Deflation Plain on the CBEMP map (Figure 1 & 2). The Station will be located on an upland area outside the mapped wetland.

The primary potential impacts related to the proposed meteorological station are associated removal of vegetation and soil disturbance, as well as potential impacts to birds during and following construction. Erosion mitigation is discussed below in (b). Mitigation of potential avian impacts will include the timing of construction (it will not occur during the snowy plover nesting season (March 15th to September 15)). Additionally, bird deterrent measures would be added to the station to reduce potential impacts.

b. Temporary and permanent stabilization programs and maintenance of vegetation

The project erosion control plan will define the methods for temporary and permanent stabilization of the loose sands at the site. As with the above-referenced uses, the project will require an erosion control permit (Oregon Department of Environmental Quality [DEQ] 1200C) and an upland erosion and re-vegetation and maintenance plan from the Federal Energy Regulatory Commission (FERC). These final adultizations will incorporate the specific BMPs which are presented in Section 6 of the LNG Terminal Erosion and Sediment Control Plan, March 26, 2019, attached as Exhibit B as binding measures to ensure both temporary and permanent stabilization programs, including both monitoring and performance criteria. Monitoring requirements stay in effect until permanent stabilization is in place. During the construction phase of the meteorological station, erosion and sediment control will be addressed through implementation of Best Management Practices (BMPs) required by the 1200C permit. BMPs to be utilized are consistent with the Construction Stormwater Best Management Practices Manual, March 2013, DEQ, Water Quality Division. BMPs defined in that Manual which are specific to the Meteorological Station include: 2.1, Preserve Existing Vegetation, 2.3 Reestablish Vegetative Cover, and 2.24 Sediment Fence. Other BMPs will be implemented if determined applicable.

As described above, the project proponents have identified a variety of mitigation methods to abate erosion of loose sands. Stabilization through re-vegetation has been the most common method to mitigate loose sand in the area, and is likely to be the predominant long-term stabilization method used for the stabilization of shallow disturbed soils on flat or low gradient ground. Vegetation used in the stabilization program will consist of predominantly native species suited to the unique site soils and climate (drought and salt tolerant).

c. Methods for protecting the surrounding areas from adverse effects

The proposed meteorological tower has a negligible potential for generating adverse impacts in surrounding areas. Once constructed, the tower will be a benign structure that will not impact surrounding areas.

d. Hazards to life, public and private property, and the natural environment

The construction of a meteorological tower will not create hazardous conditions to life, property, or the environment.

e. Whether drawdown of groundwater would lead to loss of stabilizing vegetation, loss of water quality or intrusion of saltwater into water supplies

The proposed meteorological tower will have no impact on groundwater conditions at the site.



4.0 Conclusion

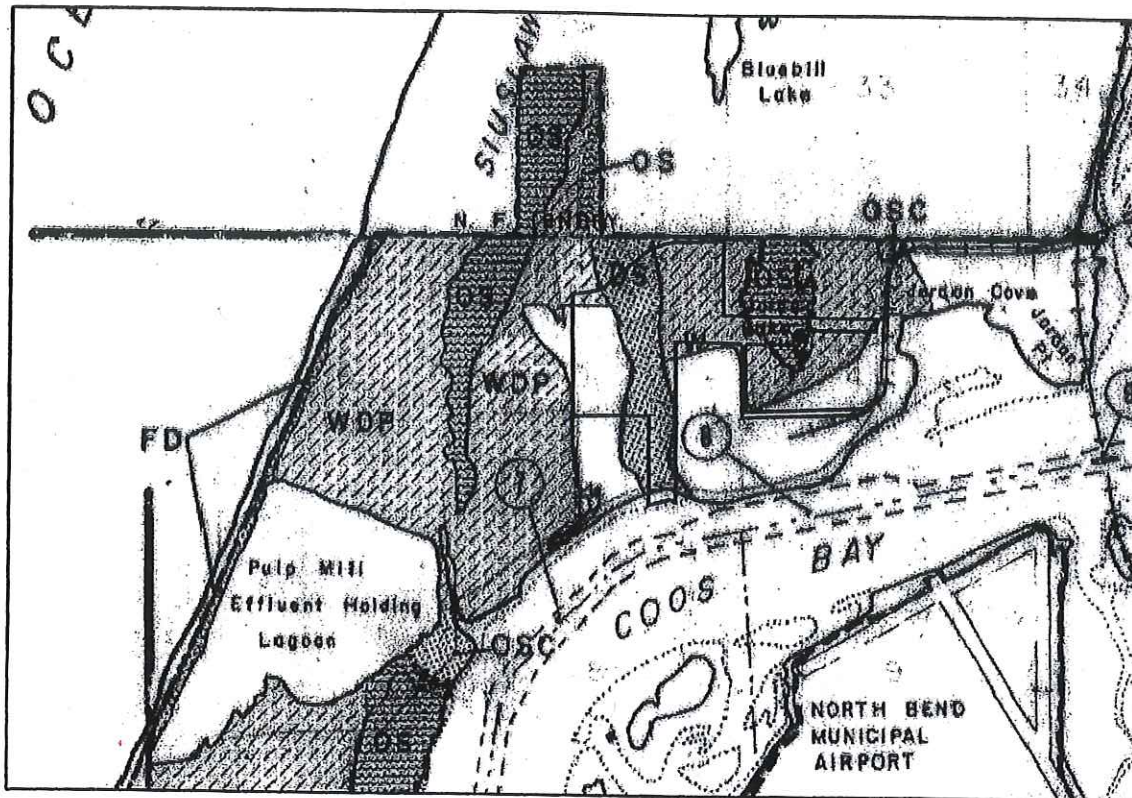
Based on the assessment described herein, and the required implementation of specific BMPs described herein and attached as Exhibit A and B, we conclude based upon our best professional judgment, that development of the proposed facilities as described is a suitable activity relative to Limited Suitability Development dune areas will be consistent with Policy 30 review criteria are established under the CBEMP. Further, the intended uses are consistent with past and current industrial uses in the immediate project vicinity.

Figures **1**

Exhibit 10
Page 16 of 50



	Jordan Cove LNG Application Beaches and Dunes			REV Description: Issued for Review	
	619028			Doc No: J1-440-GEO-MAP-SHN-00001-01	
	615036-Abridged REV 1			REV: A REV Date: 04/11/2019	
				Exhibit 10 of 1	
				Page 17 of 50	



SPECIAL REGULATORY CONSIDERATIONS (CBEMP)

BEACHES & DUNES

APPLICANTS PROPOSED FINDING:

THE SUBJECT PROPERTY CONTAINS A YOUNGER STABILIZED DUNES (DS), WET DEFLATION PLAIN (WDD), AND OPEN DUNE SAND (OS).

A PORTION OF THE PROPERTY IS NOT CONTAINED WITHIN A BEACHES & DUNES SPECIAL CONSIDERATION AREA (NON-HATCHED AREA).

THE YOUNGER STABILIZED DUNE IS THE ONLY SPECIAL CONSIDERATION AREA (LIMITED DEVELOPMENT SUITABILITY) THAT WILL BE IMPACTED BY THE PROPOSED LNG DEVELOPMENT.

BEACHES AND DUNES

LEGEND:

ACTIVE DUNES

OS- OPEN DUNE SAND

RECENTLY STABILIZED DUNES

DS- YOUNGER STABILIZED DUNES

FD- RECENTLY STABILIZED FOREDUNES

OSC- OPEN DUNE SAND CONDITIONALLY STABLE

OSB- OLDER STABILIZED DUNES

INTERDUKE FORMS

W- WET INTERDUKE

WDP- WET DEFLATION PLAIN

BEACH

..... DUNE MOVEMENT THREATENING OR STABLE DUNE BEING ERODED

----- COASTAL SHORELAND BOUNDARY

SOURCE: BEACHES AND DUNES OF THE OREGON COAST, U.S.D.A. SOIL CONSERVATION SERVICE, MARCH, 1978.

Revised to SHN 619028



Jordan Cove LNG
Application
Beaches and Dunes

SHN 619028

619028-BeachDune



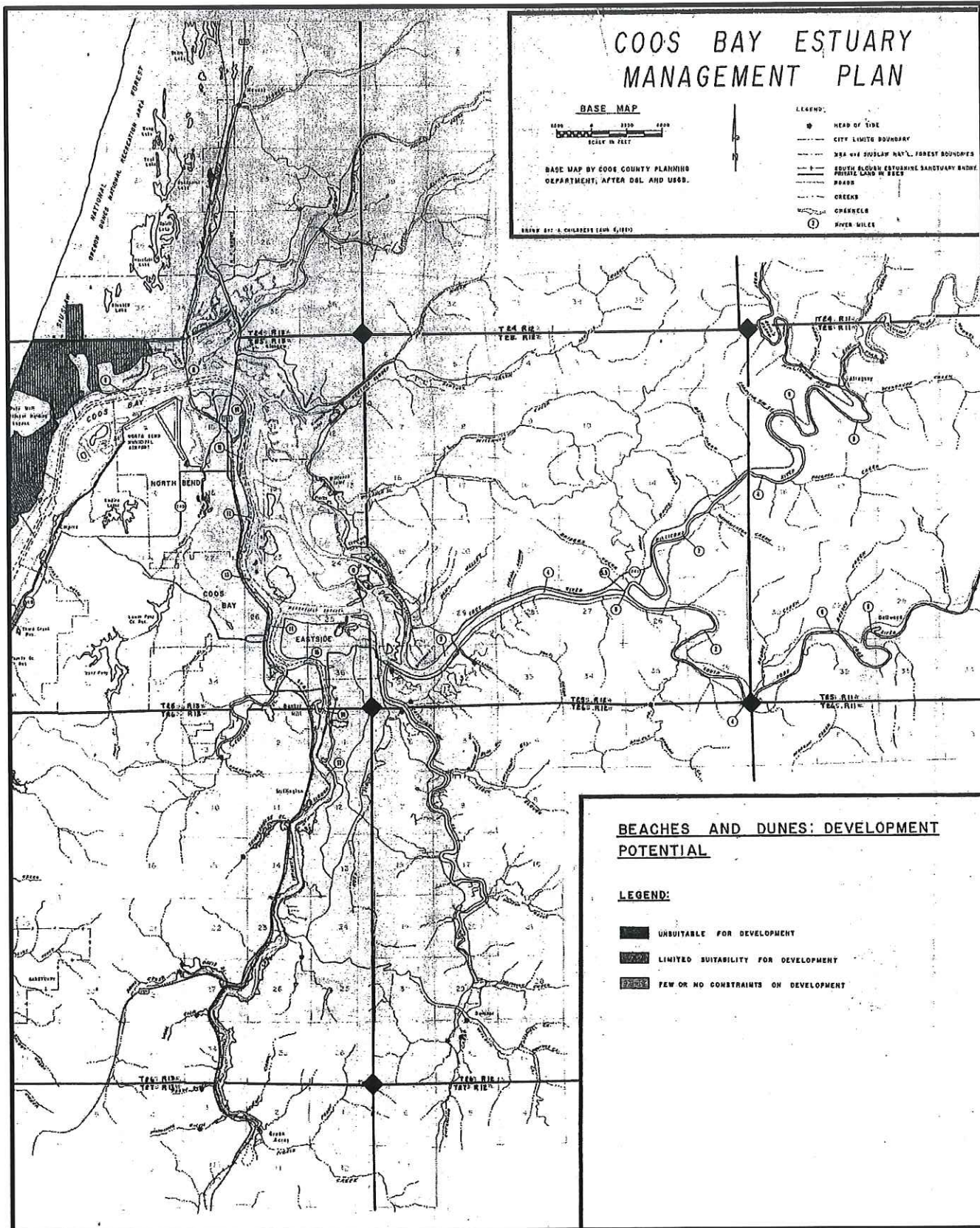
REV Description: Issued for Review

Doc No: J1-440-GEO-MAP-SHN-00001-02

REV: A REV Date: 04/11/2019

Exhibit 10 of 2

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Jordan Cove LNG
Application
Beaches and Dunes

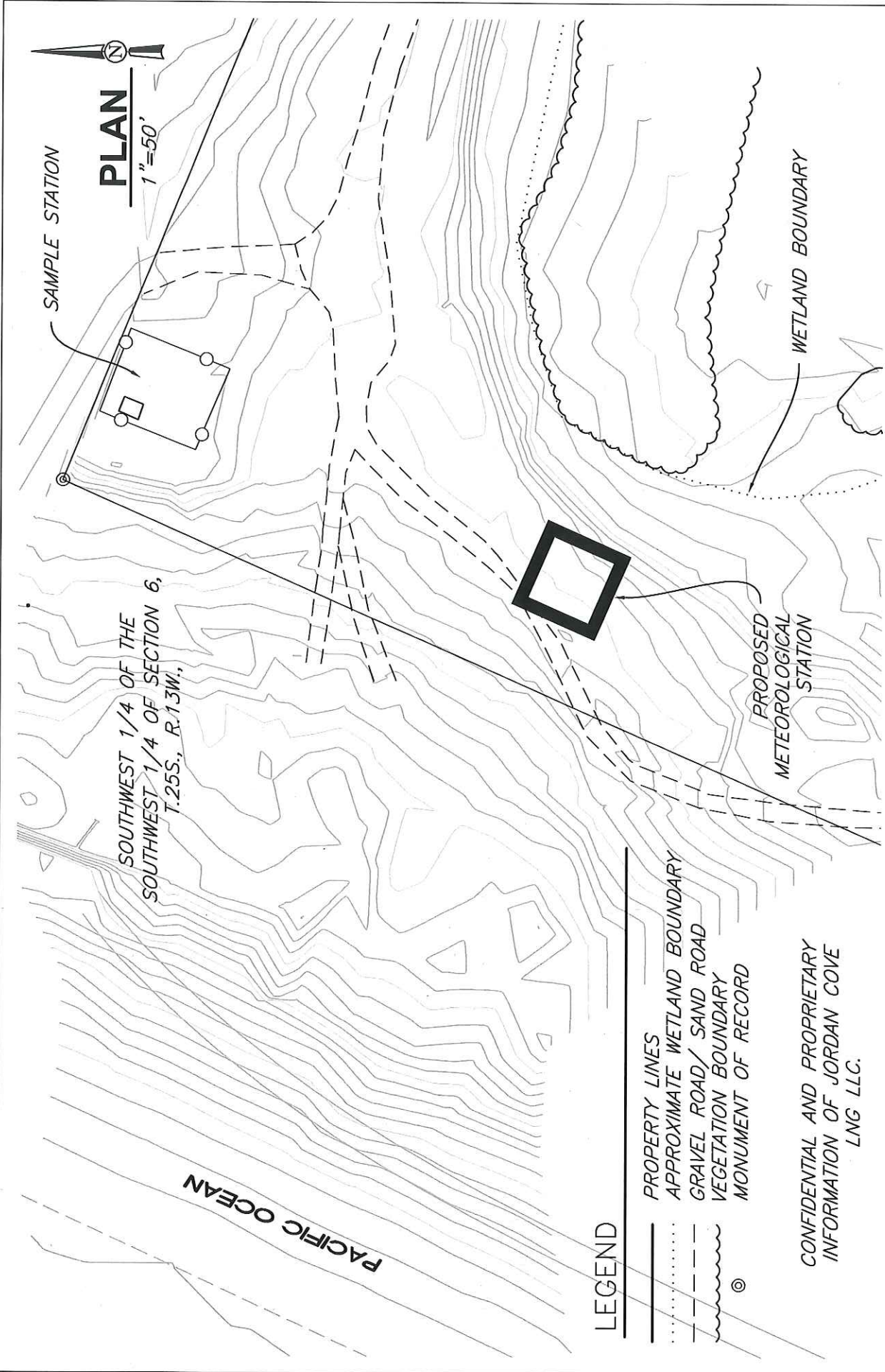
SHN 619028

619028-BeachDune



REV Description: Issued for Review
Doc No: J1-440-GEO-MAP-SHN-00001-03
REV: A REV Date: 08/01/2019

Exhibit 10
Figure 2A





	Jordan Cove LNG Application Beaches and Dunes			REV Description: Issued for Review	
				Doc No: J1-440-GEO-MAP-SHN-00001-04	
	619028	615036-Abridged REV 1		REV: A	REV Date: 04/11/2019
				Exhibit 30re 3	

Exhibit A 2

Exhibit 10

ATTENTION EXCAVATORS:

YOU NOW REQUIRE US TO FOLLOW RULES GOVERNED BY THE GROUND UTILITY LOCATION CENTER. THESE RULES ARE SET FORTH IN GUP 350-3501-0010. IF YOU HAVE ANY QUESTIONS ABOUT THESE RULES, YOU MAY CONTACT THE CENTER AT 1-800-368-5888. IF YOU HAVE ANY QUESTIONS ABOUT THE CENTER AT LEAST 30 DAYS BEFORE COMMENCING AN EXCAVATION, CALL 502-246-6888.

1	PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY	ONCE TO DISCLOSE THAT DROPPED AND SEDIMENT CONTROL MEASURES ARE IN PLACE AND TO ADVISE THAT THE SITE IS BEING MAINTAINED AND MONITORED IN ACCORDANCE WITH THE PERMIT MADE PRIOR TO LEAVING THE SITE.	ONCE EVERY TWO (2) WEEKS
2			
3	INACTIVE PERIODS GREATER THAN FOURTEEN (14) CONSECUTIVE DAYS		ONCE EVERY TWO (2) WEEKS
4	PERIODS DURING WHICH THE SITE IS UNACCESSIBLE DUE TO UNCLEHOOT WEATHER		IF PRACTICAL INSPECTIONS MUST OCCUR ON A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION.

SPECIAL EROSION CONTROL NOTES

1. MINIMIZE ENVIRONMENTAL DISTURBANCE BY ALLOWING FLEXIBILITY OF CORRE LOCATIONS. A MINOR RELOCATION OF A CORRE LOCATION MAY PRODUCE A MORE EFFECTIVE EROSION CONTROL.
2. ALL PLANNING OF SEDIMENT LAUNCHER SHALL BE DISCHARGED OVER AN UNDEVELOPED, PROBABLY UNDISTURBED AREA, AND THROUGH A SEDIMENT CONTROL BASIN (S.C. FILTER BASIN).
3. ALL EXPOSED SOILS MUST BE COVERED DURING THE WET WEATHER PERIOD.

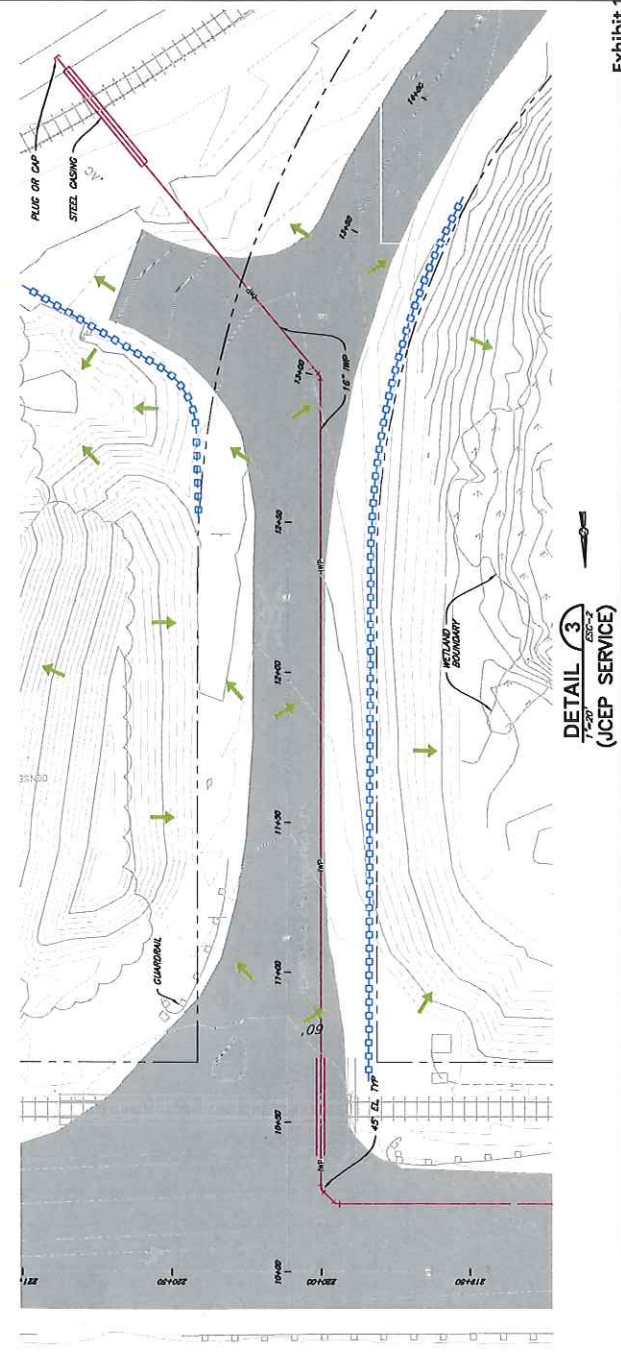
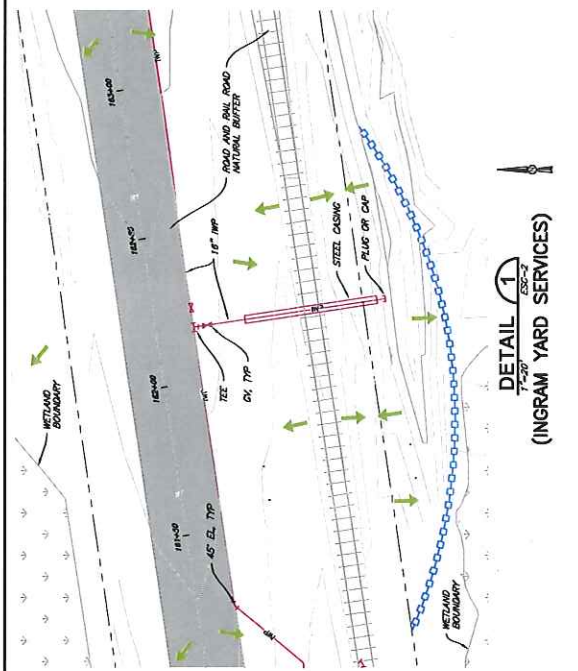
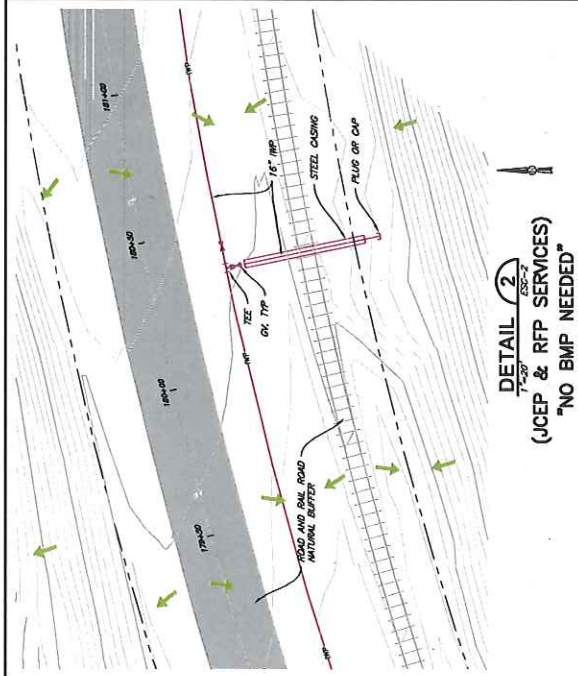
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Page 22 of 5
Exhibit



1. ALL BASE ERT MEASURES (WALL PROTECTION, PERIMETER FENCING, EXTERNAL CANTON, CONSTRUCTION ENTRANCES, ETC.) SHALL BE IN PLACE, FUNCTIONAL AND APPROVED IN AN INITIAL INSPECTION PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. ALL CONSTRUCTION ACTIVITIES SHALL BE CONFINED TO THE DESIGNATED CONSTRUCTION AREAS. CONSTRUCTION OF EXISTING CURBMENT BARRIERS APPROVED FOR USE INCLUDE STANDARD PILES, BEAMS, CONSTRUCTED DUE TO METEORIC CHANGES OR OTHER UNFORSEEN CIRCUMSTANCES.
3. ALL CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO THE DESIGNATED AREAS. CONSTRUCTION AREAS SHALL BE CLEARLY DELINEATED WITH ORANGE CONSTRUCTION EXCISE OR CHAIN LINK FENCING IN A MANNER THAT IS CLEARLY VISIBLE TO ANYONE IN THE AREA. NO ACTIVITIES ARE PERMITTED TO OCCUR BEYOND THE CONSTRUCTION BARRIER.
4. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE DESIGNATED CONSTRUCTION AREAS AND FOR THE PURPOSE OF ACCESS TO THE PROJECT. ALL ACTIVITIES ARE PERMITTED TO OCCUR WITHIN THE CONSTRUCTION AREAS AND NEIGHBORING AREAS ARE REQUIRED TO ASSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
5. RUN-ON AND RUN-OFF CONTROLS SHALL BE IN PLACE AND FUNCTIONING PRIOR TO BEGINNING SUBSTANTIAL CONSTRUCTION ACTIVITIES. ALL CONSTRUCTION AREAS AND NEIGHBORING AREAS SHALL BE PROTECTED FROM EROSION, SEDIMENTATION, AND SLOPE STABILIZATION.

1. THESE EROSION AND SEDIMENT CONTROL PLANS ASSUME "DRY WEATHER" CONSTRUCTION. "WET WEATHER" CONSTRUCTION MEASURES NEED TO BE APPLIED BETWEEN OCTOBER 1ST AND MAY 31ST.
2. PRE-DEVELOPED RUN-OFF SHEET FLOWS EASTERLY INTO ON-SITE DRAINAGE AND NORTHERLY ONTO ADJACENT PROPERTIES.



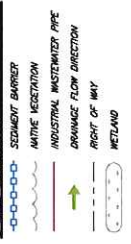
**GRADING, STREET AND UTILITY EROSION
AND SEDIMENT CONSTRUCTION NOTES:**

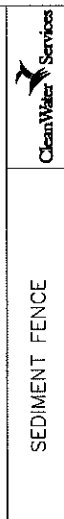
1. SEDD USED FOR TEMPORARY OR PERMANENT SEEDING SHALL BE COMPOSED OF 50% PERCENT FERTILIZER, 40% PERCENT SEED, AND 10% PERCENT HUMUS. UNLESS OTHERWISE SPECIFIED, THE SEED SHALL BE OF THE FOLLOWING SPECIFICATIONS:
2. CONSTRUCTION PLAN AND SPECIFICATIONS FOR APPROPRIATE SEED MIX SHALL BE SUBMITTED TO THE DISTRICT ENGINEER FOR REVIEW AND APPROVAL.
3. SLOPE TO RECEIVE TEMPORARY OR PERMANENT SEEDING SHALL BE GRADUALLY SLOPED TO PREVENT EROSION OF THE SEEDING MATERIALS. THE SEEDING SHALL BE APPLIED BY MEANS OF TRUCK-MOUNTED OR THE USE OF OTHER EQUIPMENT THAT WILL NOT CAUSE THE SEEDING MATERIALS TO BE WASHED AWAY OR DISPERSED BY WIND.
4. LONG TERM SEED STABILIZATION MEASURES SHALL BE APPLIED AND THE ESTABLISHMENT OF PERMANENT VEGETATION COVER VIA SEEDING WITH APPROVED MIX AND APPROPRIATE FERTILIZER SHALL BE MONITORED FOR PROPER GROWTH.
5. SLOPE WITH FACTOR SHEETING, STORM MALLING, BULK DIPS, OR OTHER APPLIED MEASURES.
6. STOCKPILED SOIL OR STABILIZED SOIL SHALL BE PLACED IN A STABLE LOCATION AND COVERED WITH FACTOR SHEETING OR OTHER APPROPRIATE MEASURES. STOCKPILING SHALL BE COMPLETED WITHIN 72 HOURS OF THE TIME WHEN THE STOCKPILING IS REQUIRED. STOCKPILING SHALL BE COVERED WITH FACTOR SHEETING OR OTHER APPROPRIATE MEASURES.
7. EXPOSED DIRT OR FILL AREAS SHALL BE STABILIZED THROUGH THE USE OF TEMPORARY SEEDING AND MALLING. STORM CONTROL BLANKETS OR MATS SHALL BE APPLIED TO PREVENT EROSION OF THE EXPOSED AREAS. MATS SHALL BE APPLIED TO PREVENT EROSION OF THE EXPOSED AREAS. MATS SHALL BE APPLIED TO PREVENT EROSION OF THE EXPOSED AREAS.
8. MEAS SUBJECT TO AND EROSION SHALL USE APPROPRIATE DUST CONTROL MEASURES. DUST CONTROL MEASURES SHALL BE APPLIED TO PREVENT DUST FROM BEING BLOWN AWAY BY WIND OR OTHER MEANS.
9. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ENTRANCES SHALL BE MAINTAINED AT ALL TIMES TO PREVENT DUST FROM BEING BLOWN AWAY BY WIND OR OTHER MEANS. ENTRANCES SHALL BE MAINTAINED AT ALL TIMES TO PREVENT DUST FROM BEING BLOWN AWAY BY WIND OR OTHER MEANS.
10. ACTIVE INLETS TO STORM WATER SYSTEMS SHALL BE PROTECTED THROUGH THE USE OF TEMPORARY SEEDING AND MALLING. STORM CONTROL BLANKETS OR MATS SHALL BE APPLIED TO PREVENT EROSION OF THE EXPOSED AREAS. MATS SHALL BE APPLIED TO PREVENT EROSION OF THE EXPOSED AREAS. MATS SHALL BE APPLIED TO PREVENT EROSION OF THE EXPOSED AREAS.
11. SATURATED MATERIALS THAT ARE WASHED OFF SITE MUST BE TRANSPORTED IN WASH-TIGHT TRUCKS TO ELIMINATE SPILLAGE OF SEDIMENT AND SOLID-LOOSEY MATERIAL.
12. SEDIMENT SHALL BE PROVIDED FOR THE WASHING OUT OF CONCRETE REINFORCING MATERIALS. THE WASHING OUT OF CONCRETE REINFORCING MATERIALS SHALL BE PROVIDED FOR THE WASHING OUT OF CONCRETE REINFORCING MATERIALS. THE WASHING OUT OF CONCRETE REINFORCING MATERIALS SHALL BE PROVIDED FOR THE WASHING OUT OF CONCRETE REINFORCING MATERIALS.
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EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION:

1. ALL BASE EDC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL, CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. ALL SEDIMENT BARRIERS (TO BE INSTALLED AFTER GRADING) SHALL BE INSTALLED IMMEDIATELY FOLLOWING ESTABLISHMENT OF FINISHED GRADE AS SHOWN ON THESE PLANS.
3. LONG TERM SLOPE STABILIZATION MEASURES, INCLUDING MATING¹, SHALL BE IN PLACE OVER ALL EXPOSED SOILS BY OCTOBER 1.
4. INLET PROTECTION SHALL BE IN-PLACE IMMEDIATELY FOLLOWING RAINING

EXPLANATION







STANDARD EROSION CONTROL
NOTES FOR SITES LESS THAN 1
ACRE
DRAWING NO. 945
REVISED 12-18

Exhibit B 3

Exhibit 10

	LNG Terminal Erosion and Sediment Control Plan		
	Doc. No.: J1-000-CIV-RPT-KBJ-60003-00		
	Rev.: 3	Rev. Date: 26-Mar-19	

6.0 Erosion and Sediment Control Measures

This section describes the control measures (BMPs) that are intended to control erosion and prevent or limit sediment and turbidity from leaving the Project areas covered under this Plan.



The BMPs described herein and shown on the drawings in Attachment D were primarily selected using the Oregon DEQ Construction Stormwater Best Management Practices Manual (Reference 4), the Oregon Department of Transportation (ODOT) Erosion Control Manual (Reference 5), and FERC's Wetland and Waterbody Construction and Mitigation Procedures and Upland Erosion Control, Revegetation, and Maintenance Plan, as modified (included in Attachment F).

All BMPs will be installed and maintained in proper working order in accordance with good engineering practices and, where applicable, the manufacturer's specifications. Interim controls will be installed after construction activities cease for 7 days for disturbed areas within 100 feet of water or sensitive areas. For all other areas, controls will be installed after construction activities cease for 14 days (Reference 5).

The BMPs that may be implemented are defined below. Definitions are typically in accordance with the Oregon DEQ Construction Stormwater Best Management Practices Manual (Reference 4).

Bio-Filter Bags: Woven nylon mesh bags containing bark and/or wood chips that are commonly used to remove energy from concentrated flows or for protection around some types of catch basins.

Catch Basin Inlet Protection: Uses a temporary barrier to prevent the flow of sediment and debris into a storm drain or other form of conduit and is used to prevent sediment from entering and clogging the storm drainage system prior to permanent stabilization of a construction area.

	LNG Terminal Erosion and Sediment Control Plan		
	Doc. No.: J1-000-CIV-RPT-KBJ-00003-00		
	Rev.: 3	Rev. Date: 26-Mar-19	

Check Dam: A small dam constructed in a drainage way to reduce channel erosion by restricting the flow velocity.

Concrete Washout: An infiltration pit or area that is used to settle and infiltrate residual concrete, aggregate, and water for washdown activities from a concrete truck.

Compost Filter Berm: Compost is used to build a berm that filters the storm water runoff.

Compost Filter Sock: A close weave sock either of synthetic or cotton fiber filled with compost.

Diversion: A berm (dike or ridge), a swale, an excavated channel, or a ditch used to prevent sediment-laden waters from leaving a site or to prevent off-site or upstream waters from entering a site.

Erosion Control Blankets: Mats of organic fibers or inorganic materials held by synthetic or biodegradable netting.

Geotextile: Permeable fabric used to separate, filter, reinforce, protect, or drain.

Gravel Construction Entrance: A stabilized rock pad placed at construction site ingress/egress locations.

Hydroseeding: The application of a mulch, seed, and fertilizer slurry to establish vegetation and prevent erosion.

Insert Bag (Inlet Protection): A woven fabric bag that has a large filtering area so that it reduces water backup.

Mulching: The application of plant material such as compost or straw to the soil surface.

Outlet Protection: Involves the use of an energy-dissipating device at the outlet of a pipe or conduit to prevent excessive erosion (scour) from runoff.



Pipe Slope Drain: A structure used to convey clean water down the face of a cut or fill without causing erosion.

Plastic Sheeting: Plastic sheet used to temporarily cover soil stockpiles or bare slopes until a more permanent stabilization can occur or until the stockpile is removed.

Sediment Basin: A temporary pond built to capture eroded or disturbed soil that is washed off during storm events.

Sediment Fence: A geotextile fabric with regular spaced pockets for supporting posts used to retain heavy soil particles both through a filtering operation and through the creation of a small settling basin upslope of the fence through restriction and retardation of the runoff flow velocity.

Sediment Trap: A small, temporary ponding area designed to remove sediment from runoff by holding a volume of water for a length of time, allowing larger (sand-sized) particles to settle out.

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Straw Wattles: Manufactured tubular plastic netting filled with rice straw that acts to disperse runoff laterally and trap sediments on the upslope side.

Surface Roughening: The method of creating ridges or furrows on the soil surface.



Tackifier: A biodegradable adhesive that can be applied directly to the soil or over a layer of mulch.

Wheel Wash: Used to remove dirt and rock from truck tires.

6.1 ESCP IMPLEMENTATION

Before and during construction and before termination of permit coverage under the 1200-C General Permit, the ESCP will be implemented as follows (Schedule A.8.c):

1. **Before Construction:**
 - a. Identify, mark, and protect (by fencing or other means) critical riparian areas and vegetation including important trees and associated root zones and vegetation areas to be preserved.
 - b. Identify vegetative buffer zones between the site and sensitive areas (e.g., wetlands) and other areas to be preserved.
 - c. Hold a pre-construction meeting with construction personnel and the JCEP[®] inspector to discuss erosion and sediment control measures and construction limits.
 - d. Stabilize site entrances and access roads including, but not limited to, construction entrances, roadways, and equipment parking areas.
 - e. Install perimeter sediment control including storm drain inlet protection and sediment basins, traps, and barriers.
 - f. Establish concrete truck and other concrete equipment washout areas before beginning concrete work.
 - g. Establish material and waste storage areas and other non-storm water controls.
 - h. Construct the primary runoff control measures to protect areas from concentrated flows and stabilize stream banks.
2. **During Construction:**
 - a. Begin land clearing, excavation, trenching, cutting, or grading only after installation of sediment and runoff control measures.
 - b. Provide appropriate erosion and sediment control BMPs for all roadways including gravel roadways.
 - c. Install additional control measures as work progresses, as needed.
 - d. Inspect existing BMPs, repairing and maintaining as required.
 - e. Phase clearing and grading to the maximum extent practical to prevent exposed inactive areas from becoming a source of erosion.



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- f. Wash concrete trucks and equipment off-site (in an appropriately protected area) or in designated concrete washout areas only.
 - g. Direct all wash water into a pit or leakproof container. The pit does not need to be lined or leakproof, but the pit or container must be designed so that no overflow can occur from inadequate sizing or precipitation. Concrete wash water must not adversely affect groundwater.
 - h. Do not dispose of concrete wash water or washout from concrete trucks onto the ground or into storm drains, open ditches, streets, or streams.
 - i. Do not dump excess concrete on-site, except in designated concrete washout areas.
 - j. Concrete spillage or concrete discharge to surface waters of the state is prohibited.
 - k. Apply temporary stabilization measures, final vegetative cover, or permanent stabilization measures on all disturbed areas as work is completed. Stabilization of disturbed areas must be initiated whenever any earth disturbing activities have permanently ceased on any portion of the site. Temporary or permanent stabilization measures are not required for areas that are intended to be left unvegetated or unstabilized following construction (i.e., dirt access roads, areas being used for vehicle storage, equipment, or materials), provided that measures are in place to eliminate or minimize erosion.
3. Before Termination of Permit Coverage:
- a. Provide final vegetative cover or permanent stabilization measures on all exposed areas.
 - b. After seeding or planting the area to be vegetatively stabilized, install non-vegetative erosion control that provides cover to the area while vegetation is becoming established to the extent necessary to prevent erosion of the seeded or planted area.
 - c. Remove and properly dispose of construction materials and waste, including sediment retained by temporary BMPs.
 - d. Remove all temporary erosion and sediment control measures as areas are permanently stabilized, unless doing so is in conflict with local requirements.



6.2 ESCP DRAWINGS

The following information will be provided on the drawings for individual 1200-C permit applications for the Project areas identified previously:

- Identification and location of markings and methods and means for protecting critical riparian areas and vegetation including important trees and associated rooting zones and vegetation areas to be preserved. (To be included on the drawings in a subsequent draft.)
- Identification of vegetative buffer zones between the site and sensitive areas (e.g., wetlands) and other areas to be preserved.
- Identification and location of site access roads and parking areas (graveled and paved construction entrances, exits, roadways, equipment parking areas, etc.).

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- Identification and location of fuel storage and fueling areas and storage of hazardous materials and wastes. (To be provided on the drawings in a subsequent draft.)
- Identification and location of concrete truck and equipment washout areas.
- Site location map. The Project footprint map and plot plan show sufficient roads and features to locate and access the site (Schedule A.12.b.v(2)).
- Total property boundary including surface area of development (Schedule A.12.b.v.(3)(a)).
- Identification, location, size, and type of all soil disturbances including cut and fill areas and pre- and post-development elevation contours (Schedule A.12.b.v(3)(b)).
- Identification of drainage patterns of pre- and post-development clearly indicated by contours or drainage flow direction arrows (Schedule A.12.b.v(3)(c)).
- Identification and location, size, and type of storm water discharge points to receiving water and all temporary and permanent storm water conveyance systems (Schedule A.12.b.v(3)(d)) and A.12.b.v.(3)(j).
- Identification and location of areas used for the storage of soils and wastes (Schedule A.12.b.v(3)(e)). (To be included on the drawings in a subsequent draft.)
- Identification and location of areas where vegetative erosion control practices are implemented (Schedule A.12.b.v(3)(f)).
- Identification and location of all erosion and sediment control measures and structures (Schedule A.12.b.v.(3)(g)).
- Identification and location of all impervious structures and areas post-construction (Schedule A.12.b.v.(3)(h)).
- Location of wetlands and surface waters adjacent to and on the Project site (Schedule A.12.b.v.(3)(i)).
- On-site water disposal locations (dewatering, dredged material slurry, etc.) (Schedule A.12.b.v.(3)(k)).
- Construction of the Project will occur outside of the 100-year floodplain. Refer to FERC Resource Report 1, submitted by JCEP as part of the September 2017 FERC application, for details regarding floodplains.
- Identification and location of storm drain catch basins, catch basins with inlet protection, and the type of catch basins used (curb inlet, field inlet, grated drain, combination, etc.) (Schedule A.12.b.v(3)(l)).
- Location of temporary and permanent sanitary treatment package(s) for operations and the corresponding discharge location. (To be included on the drawings in a subsequent draft.)
- Location of drinking water wells on-site and adjacent to the site (Schedule A.12.b.v(3)(o)) – Not Applicable.
- Details of sediment and erosion controls and installation details (Schedule A.12.b.v(3)(q)).

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- Details of temporary or permanent sedimentation basins, detention ponds, storm drain piping, and inflow and outflow details (Schedule A.12.b.v(3)(s)). (To be included on the drawings in a subsequent draft.)

6.3 SPILL PREVENTION AND CONTROL

The BMPs to prevent or minimize storm water from being exposed to pollutants from spills; vehicle and equipment fueling, maintenance, and storage; other cleaning and maintenance activities; and waste handling activities are identified in the SPCC Plan for construction. The SPCC Plan for construction is in Appendix K-2 of FERC Resource Report 2, submitted by JCEP as part of the September 2017 FERC application.

6.4 EROSION CONTROL (PREVENTION) MEASURES

The methods and BMPs described in this section will be utilized to prevent (control) erosion from occurring.

6.4.1 Wet Weather Conditions



Earth disturbance including excavation will occur during the wet season between October 1 and May 31. The following items will be implemented during wet weather earth disturbance:

- Preserve on-site, native vegetation to the greatest extent possible.
- Make every effort to schedule earthwork activities during the dry season or during periods of low forecasted rainfall. However, due to the scope and size of the earthworks activities, it will not be possible to avoid work during the wet season and during periods of high rainfall.
- Grading work will be sequenced to minimize the area and duration of exposed soils.
- Install sediment control BMPs prior to the wet season.
- Size transport systems to handle wet weather flows. The permanent buried storm water piping network will be sized for a 25-year return interval design storm. This system will be utilized during construction after it has been installed. Temporary swales for construction runoff transport will be sized for a 10-year return interval design storm.
- Increase the frequency of BMP inspection and maintenance and adjust BMPs accordingly during wet weather conditions.

6.4.2 Clearing and Grading Practices

The following clearing and grading practices will be followed to minimize erosion:

- Preserve on-site, native vegetation to the greatest extent possible.
- Protect trees and sensitive areas outside of the limit of disturbance (LOD). Utilize orange construction fence to designate the construction boundary.
- Protect sediment from entering buffer zones with sediment control measures. Buffer zones will not be used as a primary sediment control device.
- Grading work will be sequenced to minimize the area and duration of exposed soils.

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6.4.3 Dust Control

Dust control measures will be implemented during dry weather periods to reduce soil erosion from wind and minimize the potential for dust particles to become airborne. Dust control measures will be employed as necessary. Areas previously controlled for dust will be re-stabilized for dust control within 2 days of disturbance when disturbance takes place.

Dust control will include one or more of the following BMPs:

- Installation of crushed rock on construction entrances and haul roads.
- Water spray trucks.
- Pre-wetting of materials to be excavated.
- Temporary seeding.
- Compost.
- Mulching.
- Tackifier.

Many of these BMPs will be utilized for erosion control, runoff control, and excavation operations; therefore, they will also function as dust control measures. Any of these BMPs may be utilized solely for dust control when determined by on-site conditions that it is necessary.

6.4.4 Vegetative Erosion Control Practices

Vegetative erosion control practices will include preservation of existing vegetation to the greatest extent possible, revegetation, biotechnical erosion control methods (i.e., stabilization mats), and reseeded.



Preservation of Existing Vegetation: Existing vegetation and vegetative strips will be preserved in accordance with site drawings. Areas of vegetation to be preserved will be distinguished from those areas to be disturbed.

Seeding, Mulching, and Sod Stabilization: Following final grade development, areas designated for vegetation shall be either (1) hydroseeded and mulched with tackifier or (2) stabilized with sod. Final stabilization of disturbed areas will occur when a uniform perennial vegetative cover provides 90 percent or more coverage (Oregon DEQ Construction Stormwater Best Management Practices Manual). If fertilizers are used to establish vegetation, the application rates will follow the manufacturer's guidelines and the application will be done in such a way to minimize nutrients discharging to surface waters. The fertilizer mix and application methodology will be determined during detailed design.

6.4.5 Temporary Stabilization Measures

The temporary covering stabilization measures in this section will be implemented at a minimum when any of the following conditions are met:

- (1) On any portion of the site disturbed within 100 feet of a water body or sensitive area if construction activities cease for 7 calendar days or more, or

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- (2) On any significant portion of the site if construction activities cease for 14 calendar days or more (Schedule A.7.f.ii), or
- (3) If all construction activities cease at the site for thirty (30) calendar days or more, the entire site must be stabilized (Schedule A.7.f.i).

Temporary stabilization measures for a localized construction area will in general not be placed until active construction in that area has ceased for 14 days. Section 2.2 of the DEQ Construction Stormwater Erosion and Sediment Control Manual (Reference 7) states that "because water readily infiltrates sandy soils, the runoff, and consequently the erosion potential, is relatively low." The main soil type on the site is sand with a high infiltration rate; therefore, the runoff potential is relatively low and will not require extensive temporary stabilization measures. However, if the sediment control BMPs alone are not sufficient to control runoff from a specific area that is actively under construction, temporary stabilization measures will be added earlier than after active construction in that area has ceased for 14 days.

The following temporary stabilization measures will be utilized, as described below.

Erosion Control Blankets (Matting): Geotextile erosion control blankets or aggregate may be used for erosion protection to temporarily stabilize soil, roads, and drainage routes during construction. Erosion control blankets will be installed to manufacturer's specifications. Erosion control blankets will be used for bank protection with slopes greater than 2:1 (H:V), unless other bank stabilization measures are provided (e.g., riprap).



Aggregate: Aggregate surfacing will provide stabilization and protection of the soil below from erosion.

Surface Roughening: Roughening slopes slows storm water runoff velocity. Roughening may be accomplished by track walking slopes with tracked equipment, by using a serrated wing blade attached to the side of a bulldozer, or by using other mechanical means. The serrations on the surface shall be perpendicular to the slope angle to prevent creating runoff paths down the slope. Acceptable methods include, but are not limited to, track walking with machinery up and down the slope and cutting serrations perpendicular to the slope.

6.4.5.1 Stockpiles

During construction, areas will be used to stockpile native excavated material and spoils. Topsoil will be stockpiled for use in final restoration. Excavated soil that will be used for fill will be separated from topsoil where practical. Stockpile areas will be located at least 50 feet from the edge of a waterbody. If conditions do not permit a 50-foot setback, additional BMPs will be considered. At no time will these areas be closer than 10 feet from a waterbody. The existing vegetative strip within 10 feet of the waterbody shall remain in place. The main types of stockpiles on-site during construction will be as follows:

- Topsoil.
- Boiler ash/sludge.
- Peat.

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- Clay.
- Native excavated soil.

The standard BMP that will be used for temporary stabilization of stockpiles will be mulching.

The following alternative or additional BMPs may be utilized if the performance of the standard BMP is not adequate in the field:

- Temporary seeding.
- Compost.
- Plastic sheeting.

Plastic sheeting is not a preferred method of erosion control because of the high velocity of flow at the toe resulting from plastic sheeting. However, plastic sheeting will be installed on stockpiles when it is not possible to make a permanent repair or placement of other BMPs because of wet weather, soft soils, etc. (Reference 4, Section 2.7). The plastic sheeting will be replaced with a different BMP as soon as weather and soil conditions allow and before a maximum of 30 days has passed.



6.4.5.2 Side Slopes

For the purposes of this Plan, side slopes are defined as having a slope of greater than or equal to 10:1 (H:V).

The standard BMP that will be used for temporary stabilization of cut and fill slopes will be mulching. Side slopes as steep as 2:1 (H:V) will utilize mulching. If the mulch begins to erode by wind or water, it will include a tackifier or will be anchored mechanically. Swale side slopes will not utilize mulching. Swale side slopes will utilize aggregate as the standard BMP. The aggregate will be placed at least 1 foot in elevation above the highest expected water surface elevation in the swale. Above that elevation, mulching will be the standard BMP.

The following alternative or additional BMPs may be utilized if the performance of the standard BMP is not adequate in the field:

- Temporary Seeding.
 - Hydroseeding.
- Aggregate.
 - The material may either be temporary aggregate surfacing that will be either buried or removed or final aggregate surfacing that will be placed immediately after grading is complete.
- Native Peat.
 - Excavated native peat will only be utilized as a side slope stabilization measure on the final stabilization of side slopes to be permanently seeded. A tackifier will always be used in conjunction. Native peat may be used as the sole growing

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medium or mixed with topsoil. Detailed mix designs will be developed during detailed design.

- Compost.
- Erosion Control Blankets (Matting).

In conjunction with the above BMPs, side slopes will be roughened as required to reduce runoff velocity and to aid in planting temporary seeding.

In addition, in conjunction with the above BMPs, tackifiers will be utilized as needed.

6.4.5.3 Flat Areas

For the purposes of this Plan, flat areas are defined as having a slope of less than 10:1 (H:V).

The standard BMPs that will be used for temporary stabilization of flat areas will be temporary seeding and mulching.

Temporary seeding will be the preferred standard BMP. Temporary seeding will be accomplished by hydroseeding – an application of a mulch, seed and fertilizer slurry to establish temporary vegetation and prevent erosion. Detailed mix designs will be developed during detailed design. Soil amendments may be utilized if needed to facilitate plant establishment.

Mulching will be applied as the secondary standard BMP and will be applied as the sole BMP to areas that cannot be seeded because of the time of the year or other conditions.

The following alternative or additional BMPs may be utilized if the performance of the standard BMP is not adequate in the field:

- Compost.
- Loose straw.
- Wood chips.



All mulching, loose straw, and wood chips will be dry and free of weeds and seeds, except for compost and bonded fiber mix mulch that are applied moist.

6.4.6 Permanent Stabilization

Exterior side slopes to be vegetated, filter strips, and vegetated swales may utilize permanent seeding for final stabilization. Other BMPs will be implemented prior to the full establishment of the seed, such as surface roughening, which may be utilized as a supplementary BMP for permanent and temporary seeding, and not as the sole erosion control measure. For areas to be vegetated, roughened areas will be immediately seeded and mulched.

6.5 NATURAL BUFFER ZONES

The Project layout was designed so that maximum feasible buffer zones will remain in place to waters of the state during and after construction. The LOD is shown on the drawings in Attachment D. All areas between the LOD and waters of the state will remain undisturbed throughout construction. These natural buffer zone areas will be clearly designated during construction by orange construction fence.

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At times, the LOD is within 50 feet of waters of the state. In these locations, the following sediment control measures will be provided:

- Compost filter socks will be provided at the perimeter of the LOD. Upon inspection, if any compost filter sock has been overtopped by storm water flow, it will be replaced by a larger diameter sock, or an additional sock layer will be placed on top of it.

For slopes, either:

- Compost filter socks will be placed at intervals of any slopes discharging toward the LOD instead of the primary slope sediment control measure of straw wattles (compost filter socks provide greater surface area contact than straw wattles); or
- A compost blanket will cover the slope.

6.6 RUNOFF CONTROL MEASURES

The following runoff control BMPs will be employed during construction of the Project, as required, to divert runoff and reduce runoff velocity.

6.6.1 Run-on Diversion

Run-on will be diverted around exposed soils to the maximum extent practical. Diversion measures may include diversion swales, berms, and slope drains.

Run-on will be diverted around stockpiles. Diversion measures may include diversion swales and berms.

6.6.2 Runoff Diversion

The standard BMP for runoff diversion will be diversion swales and/or berms, which may be installed at the top of steep slopes where excess runoff may cause erosion problems or at the top of cuts or around disturbed areas. The diversion swales and/or berms will divert clean runoff until the disturbed areas are permanently stabilized. An alternative BMP that may be utilized will be pipe slope drains, which may be installed along cut or fill slopes until permanent storm water drainage structures are installed.

6.6.3 Velocity Reduction

The standard BMPs for velocity reduction are riprap apron outlet protection, check dams, and surface roughening.



6.6.3.1 Outlet Protection

6.6.3.1.1 Riprap Aprons

Riprap aprons will be used for culvert and storm pipe outlet protection that discharge to level ground or swales. The riprap aprons will spread the flow to reduce runoff velocity and minimize erosion. Riprap aprons will be sized for velocity and flow of the storm water pipe for the permanent configuration so that the riprap is placed once and used for both construction and operation.

6.6.3.1.2 Chutes

Riprap chutes will be used for culvert and storm pipe outlet protection that discharge to the top or middle of a slope. The chute will consist of a depressed riprap channel perpendicular to the slope

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that will convey the storm water discharge to the bottom of the slope. At the bottom, a riprap apron will spread the flow to reduce runoff velocity and minimize erosion.

6.6.3.2 Check Dam

Check dams will be placed in storm water transport swales. Spacing for check dams is based on an 18-inch height. Check dams may be field adjusted for height and spacing. Materials shall meet the aggregate, biofilter bags, sand bags, stakes, or prefabricated requirements in accordance with ODOT Specification Section 00280.15(a) (Reference 6). The standard check dam type will be aggregate (Type 1). Fiber roll (Type 2) check dams will not be used. Alternative check dam types that may also be utilized as needed are as follows:

- Type 3 – biofilter bags.
- Type 4 – sand bags.
- Type 5 – prefabricated check dam system.
- Type 6 – compost filter sock.

6.6.3.3 Surface Roughening

A variety of methods may be implemented to create ridges or furrows in the soil to trap seed and reduce runoff velocity. Surface roughening will not be implemented as a sole BMP but will be used in conjunction with other BMPs.

6.6.4 Site Entry Runoff Control

The standard BMPs for runoff diversion at site ingress/egress will be gravel construction entrances and wheel wash facilities.



6.6.4.1 Construction Entrance

A construction entrance containing a stabilized aggregate pad will be placed at all ingress and egress locations to the Project areas where traffic leaving the site consists of at least 25 trips per day in accordance with Section 3.2.1.1 of Reference 5. Areas with an existing paved entrance will not require an aggregate construction entrance.

6.6.4.2 Wheel Wash

A wheel wash facility will be installed at all construction entrances, whether they are existing asphalt or gravel construction entrances. All earthwork equipment leaving the site will undergo a wheel wash. Wheel wash water must be captured and treated to remove solids and turbidity before being discharged from the site.

ODOT Type 1 tire wash facilities will be the primary selection for all wheel washes. These are stabilized gravel pads, similar to a stabilized construction entrance. They will be graded to convey wash water to a sediment trap or sediment basin. This type of wheel wash facility utilizes manual labor to wash the vehicle's tires. An ODOT Type 2 tire wash will be the secondary selection for wheel wash facilities. This type of wheel wash consists of a shallow concrete-lined basin, partially filled with water, through which exiting vehicles drive.

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6.7 SEDIMENT CONTROL MEASURES

The location and installation details of the sediment controls are shown on the drawings located in Attachment D.

6.7.1 Sediment Barriers

6.7.1.1 Compost Filter Socks

Sediment barrier BMPs will be provided along the Project site perimeter and internally to the site to capture and retain sediment and other pollutants in storm water. The standard BMP for sediment control for relatively flat areas and shallow slopes of approximately 10:1 (H:V) or less will be compost filter socks. Compost filter socks will be placed at the following locations:

- Site perimeter.
- Long overland flow paths.
- Around the base of stockpiles.
 - Approximately 5 feet away from the toe.
- At the toe of side slopes.
 - Approximately 5 feet away from the toe.
 - Alternatively, a runoff diversion BMP may be utilized instead.

The compost filter sock is a close weave sock either of synthetic or cotton fiber filled with mixed yard debris compost. Studies have shown compost filter socks to be effective in the removal of not only total suspended solids, but also oil and grease sheen, coliform bacteria, *E. coli*, metals, and nutrients (Reference 8). No trenching is required. The primary removal mechanism is filtration.



The compost used shall be odor free and have no recognizable original feedstock materials. Composts should adhere to Title 40 CFR, Part 503, which ensures safe standards for pathogen reduction and heavy metals contents. The material used in the compost filter socks may be incorporated as a mulch or soil amendment after completion of the site.

Compost filter socks typically come in 8-inch, 12-inch, 18-inch, and 24-inch diameters. The standard sock size for the Project will be 12 inches. Other sizes may be used if they are spaced appropriately. Socks may be stacked if extra protection is determined to be needed.

When placed on a slope, the ends of the compost filter socks will be pointed upslope to prevent storm water from flowing around the sock. Compost filter socks will be spaced according to Table 6-1.

Table 6-1 Compost Filter Sock Spacing

GROUND SLOPE %	MAXIMUM SLOPE LENGTH ABOVE COMPOST FILTER SOCK (FEET)			
	SOCK DIAMETER			
	8"	12"	18"	24"
2	300	375	500	650

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MAXIMUM SLOPE LENGTH ABOVE COMPOST FILTER SOCK (FEET)				
GROUND SLOPE %	SOCK DIAMETER			
	8"	12"	18"	24"
0	200	300	400	500
10	100	125	150	200
20	50	65	70	100
30	30	40	45	65
40	30	40	45	60
50	20	25	30	35



6.7.1.2 Straw Wattles

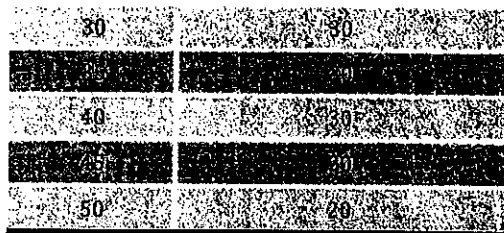
Sediment barrier BMPs will be placed on all exposed side slopes. Side slopes that contain temporary stabilization BMPs, such as mulching, will not typically include sediment barrier BMPs on the slopes as well. If the top-of-slope sediment barriers are not performing adequately in this case, sediment barriers will be applied to the side slopes in addition to the temporary stabilization BMPs.

The standard sediment barrier BMP for side slopes is straw wattles. Straw wattles will be approximately 9 inches in diameter. Small trenches (2 to 3 inches) will be dug to place the wattles in. The wattles will be staked into position at approximately 3- to 4-foot intervals. The wattles will be installed perpendicular to the slope at the spacing indicated in Table 6-2.

Table 6-2 Straw Wattle Spacing

GROUND SLOPE %	MAXIMUM SLOPE LENGTH ABOVE STRAW WATTLE (FEET)
0	300
10	100
20	50

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6.7.1.3 Alternative Sediment Barriers

The following sediment control devices are acceptable alternatives to compost filter socks and straw wattles on both relatively flat ground and shallow and steep slopes. These barriers will be installed parallel along contours. These barriers will be spaced as specified in Table 3-7 of Reference 5. If the compost filter socks or straw wattles do not perform adequately, the following additional BMPs may be utilized:

- Sediment fence (silt fence).
 - Sediment fences may be implemented as the sole sediment control treatment when the contributing drainage area is less than 3/4 acre per 300 feet of sediment fence and the average slope is 3:1(H:V) or less.
 - Silt fences will be installed at the spacing specified in Section 2.24 of Reference 4.
- Brush barrier:
 - Brush barriers may be used on shallow slopes of 2:1(H:V) or flatter, where the disturbed area runoff is sheet and rill erosion, and when the contributing drainage area is less than 1/4 acre.
- Aggregate filter berm.
 - Aggregate filter berms may be used on gently sloped areas and in areas of construction traffic.
- Compost filter berm.
- Sand bags.



6.7.2 Inlet Protection

All operational on-site drainage structures and culvert entrances will contain sediment control BMPs at all times during construction. Inlets will always receive runoff from drainage areas less than 1.0 acre. The standard BMP for inlet protection for area inlets, curb opening inlets, and culvert entrances will be compost filter socks (ODOT Type 7). The following ODOT inlet protection types may be utilized as alternative BMPs for inlet protection:

Area Drains:

- Type 2 - Geotextile with aggregate filter.
- Type 4 - Biofilter bags.

Ditch Inlets:

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- Type 3 - Catch basin insert.
- Type 4 - Biofilter bags.

Curb Opening Inlets:

- Type 4 - biofilter bags.
- Type 5 - Masonry aggregate.

6.7.3 Sediment Traps and Basins

Temporary sediment traps and basins will be constructed as the standard BMPs for settlement of sediment-laden storm water. Wherever feasible, all storm water drainage within the internal portions of the site will be directed to either a sediment trap or basin. Only drainage near the perimeter of the site will discharge directly off-site and to waters of the state without passing through a sediment trap or basin, after passing through a sediment barrier. Drainage from all stockpiles will be directed to a temporary sediment trap or basin unless it is not feasible. In cases where it is not feasible, multiple sediment barriers will be used in series.

Both sediment traps and basins function in similar ways to pond water and allow for detention, infiltration, and settlement of suspended solids. The ODOT Erosion Control Manual (Reference 5) differentiates sediment traps and basins as follows: A sediment trap drains less than or equal to 5 acres and a sediment basin drains more than 5 acres.

Sediment traps and basins will discharge to either Jordan Cove or the surrounding wetlands. The discharge will be either by an outlet structure, stand pipe, or overflow riprap channel. The discharge will be at a higher elevation within the basin so that a wet settling area is created upstream of the outfall.



The interior side slopes and base of the temporary sediment basins will be temporarily seeded to prevent erosion and aid in stability. If extra stability for the side slopes is needed, aggregate will be placed. Concentrated flow inlets to the sediment traps and basins will be lined with aggregate or riprap. Sediment traps and basins will not contain an added treatment layer (e.g., compost) or any amendments to slow the infiltration rate. The maximum side slopes will be 3:1(H:V).

Permanent infiltration basins and buried infiltration chambers will be constructed to support storm water management during operation of the facility. These infiltration areas will be utilized during construction after the basins/chambers are completed and in service. A permanent underground piping network will be installed for the conveyance of storm water during operation of the facility, which will discharge to these permanent infiltration basins, buried infiltration chambers, and also to cartridge filter devices. When this underground system is completed and in service, it will be utilized during construction.

6.7.4 Additional Sediment Control Practices

6.7.4.1 Reducing Sediment Tracking

Prior to any land disturbing activities, the site will have graveled or paved construction entrances and wheel washes designed to reduce the tracking of soils onto public or private roads. All unpaved

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roads on the site will be graveled or use an equivalent effective measure to minimize tracking of soil away from the construction site. Regular street cleaning near the entrances will also be employed.

6.7.4.2 Dewatering



Dewatering will be performed in a manner to ensure that sediment-laden water does not flow into a waterbody. Dewatering water may be filtered or directed to a sediment trap or sediment basin.

6.8 SUMMARY

Table 6-3 provides a summary of the standard and alternative BMPs selected for the Project. See Appendix M for a flowchart depicting these standard and alternate BMPs.

Table 6-3 BMP Summary for Erosion, Runoff, and Sediment Control

	STANDARD BMP	ALTERNATE BMPs
EROSION CONTROL		
Stabilization	Mulching	Temporary Seeding, Compost, Hay Matting
Side Slopes (Cut/Fill)	Mulching	Temporary Seeding, Tackifier, Erosion Control Blankets, Peat, Roughening, Aggregate, Compost
Side Slopes (Swales)	Aggregate	Temporary Seeding
Flat Areas	Temporary Seeding, Mulching	Loose Straw, Wood Chips, Compost
Final Contour	2 Year Grass Buffer, or Perennial Grass Buffer, or Native Grass Buffer	Barbwire, Compost, Hay Matting
RUNOFF CONTROL		
Permeable Pavement	Permeable Paving Structures	Slope Drains
Runoff Diversion	Diversion Swales and Berms	Slope Drain
Swale Installation	Grass Swales, or Grass Swales with Riprap Apron (Flat Areas)	Waterways, Rillways, or Grass Swales
Outlet Protection	Riprap Apron (Flat Areas), Grout (Side Slopes)	
Final Contour	2 Year Grass Buffer (Flat Areas)	Barbwire, Hay Matting, or Grass Swales, or Grass Swales with Riprap Apron (Flat Areas)
Surface Roughening	Track Walking	Other Mechanical Means
SEDIMENT CONTROL		
Settlement	Sediment Trap, Sediment Basin	

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	STANDARD BMP	ALTERNATE BMPs
Inlet Protection - Aggregate	Type 2 - Aggregate Filter Sock	Type 2 - Aggregate Filter Sock, Type 2 - Biofilter Bags
Inlet Protection - Ditch Inlet	Type 2 - Compost Filter Sock	Type 2 - Catch Basin Insert, Type 2 - Biofilter Bags
Inlet Protection - Catch Basin	Type 2 - Compost Filter Sock	Type 2 - Catch Basin Insert, Type 2 - Biofilter Bags
Sediment Barrier - Shallow Slopes of 5:1 or flatter	Compost Filter Sock	Compost Filter Berm, Sediment Fence (Silt Fence), Brush Barrier, Sand Bags, Aggregate Filter Berm
Sediment Barrier - Steep Slopes of 3:1 or steeper	Compost Filter Sock	Compost Filter Berm, Sediment Fence (Silt Fence), Brush Barrier, Sand Bags, Aggregate Filter Berm

6.9 SCHEDULE

The ESCP implementation schedule form is included in Attachment E. The implementation schedule will be determined during detailed design and will be completed prior to construction.

7.0 Local Government Requirements

The city of North Bend requires a clearing and grading permit in accordance with Section 19.10.030 of the North Bend Municipal Code. This ESCP will also satisfy these erosion and sediment control requirements when required.

Coos County does not have erosion and sediment control requirements.



8.0 Demobilization of Temporary Construction Facilities

The temporary construction facilities will be removed from the Project site as manpower levels and the need for resources steadily decreases ahead of Project commissioning. Planning for the removal of temporary construction facilities will occur well in advance to reduce potential impacts on operations; however, all buildings, storage tanks, temporary utilities, and any surplus building material will be removed. Surfacing of the laydown areas will be left as construction aggregate post-construction. This will be confirmed according to land use agreements. The erosion and sediment control BMPs implemented during construction of the Project are expected to be the same BMPs implemented during demobilization activities.

At completion of construction activities, coverage under the 1200-C permit will be terminated using the Notice of Termination Form. A sample is included in Attachment B.

9.0 Authorized and Prohibited Non-Storm Water Discharges

This section identifies authorized and prohibited non-storm water discharges according to the current General Permit.

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9.1 AUTHORIZED NON-STORM WATER DISCHARGES

The following non-storm water discharges from construction are authorized under the General Permit provided all necessary controls are implemented to minimize sediment transport, the discharge is not contaminated, and the discharge is not prohibited by Coos County:

- Water from emergency firefighting activities.
- Fire hydrant flushings.
- Potable water including water line flushing.
- Vehicle washing and external building washing that does not contain solvents, detergents, or hot water.
- Pavement wash waters where stockpiled material, spills, or leaks of toxic or hazardous materials have not occurred (unless all stockpiled and spilled material has been removed) and where solvents, detergents, or hot water are not used. Directing pavement wash waters into any surface water, storm drain inlet, or storm water conveyance is prohibited unless the conveyance is connected to a sediment basin or there is similarly effective control.
- Dust control water.
- Air conditioning or compressor condensate.
- Construction dewatering activities, including groundwater dewatering and well drilling discharge, provided the following applies:
 - The water is land-applied and results in complete infiltration.
 - BMPs are used to ensure compliance with discharge and water quality requirements.
- Foundation or footing drains, provided there is no contamination from solvents or other hazardous materials or waste.
- Landscape irrigation.

9.2 PROHIBITED DISCHARGES



The following discharges are not authorized under the General Permit:

- Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials.
- Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
- Soaps or solvents used in vehicle and equipment washing.

10.0 Erosion and Sediment Control Inspection

10.1 ESCP INSPECTIONS

The inspections will be conducted by a person certified in an erosion and sediment control program that has been approved by DEQ (Schedule A.12.b.iii(2)). KBJ will follow the state program for

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certified inspectors. The certified inspector will be determined prior to installation of erosion and sediment controls. A specific erosion control inspector will be identified for specific applications when they are submitted for approval.

JCEP will identify the erosion and sediment control inspector (ESCI), including the name of the ESCI and the 24-hour contact phone number for erosion control-related issues associated with the permit. The ESCI will identify and evaluate all erosion control measures and will be responsible for compliance with permit approvals.

10.2 PERSONNEL TRAINING

As part of the employee orientation, all supervisory personnel working on the Project will be trained as to the requirements of this ESCP. As part of the required environmental training program, the certified ESCP inspector will maintain a list of personnel that have attended the training. Periodic refresher training will be required, and all new construction personnel will receive ESCP training prior to starting work.

11.0 Monitoring and Recordkeeping



11.1 VISUAL MONITORING

The following will be monitored visually by the certified ESCI and documented on the inspection form located in Attachment H:

- All areas of the site disturbed by construction activity to ensure that BMPs are in working order.
- Discharge point(s) identified in the ESCP for evidence of or the potential for the discharge of pollutants, and to ascertain whether erosion and sediment control measures are effective in preventing significant impacts to surface waters. Where discharge points are inaccessible, nearby downstream locations will be inspected to the extent that such inspections are practicable.
- BMPs identified in the ESCP and any ESCP revisions to assess whether they are functioning properly.
- Locations where vehicles enter or exit the site for evidence of off-site sediment tracking.
- Areas used for storage of materials that are exposed to precipitation for evidence of spillage or other potential to contaminate storm water runoff.

All ESCP controls and practices will be inspected visually according to the following schedule (site condition and minimum frequency):

- During the active construction period, controls will be inspected when there has been 1/2 inch of precipitation within a 24-hour period.
- Prior to the site becoming inactive or in anticipation of site inaccessibility, controls will be inspected once to ensure that erosion and sediment control measures are in working order. Any necessary maintenance and repair will be made prior to leaving the site.

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- During inactive periods greater than 14 consecutive calendar days, controls will be inspected once each month.
- During periods in which the site is inaccessible because of inclement weather, if practical, inspections will occur daily at a relevant and accessible discharge point or downstream location.
- During periods when the discharge is frozen, controls will be inspected monthly.

The visual monitoring results will be documented. The following information will be included in the documentation:

- Date and certified erosion and sediment control inspector's name.
- Weather conditions, approximate amount of precipitation since last inspection and within last 24 hours.
- Observations of the discharge location and 50 feet downstream and upstream.
- Turbidity and color of the discharge.
- Identification and location of BMPs requiring maintenance.
- Identification and location of where additional BMPs are necessary.
- Corrective actions required and required implementation dates.

This ESCP may be revised based on the findings of the inspection. The ESCP revisions are recorded in the Record of Plan Amendments in Attachment I.

11.2 RECORDKEEPING

This ESCP, all revisions to this ESCP, and all visual monitoring records will remain on the Project site. All visual monitoring records will be retained for 3 years from termination of permit coverage.

11.3 BMP MAINTENANCE



11.3.1 General Site Maintenance

Significant amounts of sediment that leave the site will be cleaned up within 24 hours, placed back on the site, and stabilized or disposed of properly. In addition, the source(s) of the sediment will be controlled to prevent continued discharge within 24 hours. Any instream cleanup of sediment will be performed according to requirements and timelines set by the Oregon Department of State Lands.

11.3.2 Maintenance of Erosion and Sediment Controls

All measures will be maintained in good working order. If repair is necessary, it will be initiated within 24 hours of a negative report. The following BMPs will be maintained in the manner described:

- **Seeding, Mulching, and Tackifier:** Regular watering of the seed will occur in the first 2 weeks for healthy growth. Reapplication of BMP will take place if necessary.

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- **Erosion Control Blankets (Matting):** Measures will be checked regularly for rips or locations where the matting is no longer in place. Verification will occur after storms that runoff has not seeped under the matting.
- **Plastic Sheeting:** Torn sheets will be replaced, and open seams will be repaired. The anchoring system will be checked and repaired or replaced if necessary, and the plastic will be removed once it is no longer needed.
- **Surface Roughening:** Slopes will be checked for erosion rills and washes. Problematic areas will be filled slightly above the original grade, re-seeded, mulched, or matted as soon as possible.
- **Check Dams:** Removal of trapped sediment will occur when the sediment has reached half the dam's height.
- **Diversions:** Permanent diversions will be checked after each rainfall until disturbed areas are stabilized. Temporary diversions will be inspected daily when runoff is occurring and at least once every 2 weeks.
- **Sediment Fence:** For a sediment/silt fence, the trapped sediment will be removed before it reaches one-third of the aboveground fence height.
- **Other Sediment Barriers (Straw wattles, compost filter socks, etc.):** The sediment will be removed before it reaches 2 inches depth above ground height.
- **Sediment Trap/Basin Protection:** Removal of trapped sediment will occur when the sediment basin design capacity has been reduced by 50 percent.

11.3.3 Storm Water Treatment Systems



If an active storm water treatment system (chemical flocculation, filtration, etc.) for sediment or other pollutant removal is employed, an Operations and Maintenance (O&M) Plan will be submitted to DEQ for approval before startup of the treatment system. Upon DEQ approval of the O&M Plan, JCEP will implement the plan. At this time, no active storm water treatment systems are planned.

11.4 CORRECTIVE ACTIONS

In addition to routine inspections to evaluate, maintain, repair and enhance BMPs, corrective actions will be taken if any of the following events occur:

- Significant amounts of sediment or turbidity are observed downstream of the permitted activities in the conveyance system, surface waters 50 feet or more downstream or upstream, or surface waters at any location where more than half of the width of the receiving stream is affected.
- Construction activities cause or contribute to a violation of in-stream water quality standards.
- DEQ requires JCEP to take corrective actions to prevent or control the discharge of sediment-laden storm waters.

If corrective actions are required, JCEP will complete the following:

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- Control sources of sediment within 24 hours to prevent discharges.
- Implement additional BMPs or other corrective actions no later than 24 hours after initial detection.
- Document on the inspection form the corrective actions taken.
- Evaluate the control measures to determine the cause of the noncompliance.
- Submit a written report to DEQ within 10 calendar days. The report will contain the following information:
 - Site name and DEQ file number.
 - Identification of discharge points that were out of compliance.
 - Inspector's name.
 - Description of the noncompliance and its cause.
 - Period of noncompliance.
 - Actions taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
 - ESCP revisions, if necessary.

12.0 References

1. Oregon Department of Environmental Quality (DEQ), Water Quality Assessment Database: Oregon's 2012 Integrated Report, Website: <http://www.deq.state.or.us/wq/assessment/rpt2012/results.asp>.
2. Oregon DEQ, Oregon Drinking Water Protection Program, Drinking Water Source Areas and Potential Contaminants Sources, Online map viewer available at: <http://hdcgex2.deq.state.or.us/HVR291/index.html?viewer=drinkingwater>. Accessed on September 7, 2017.
3. US Geological Survey, US Geological Survey Open-File Report 90-563, Groundwater Availability from a Dune-Sand Aquifer Near Coos Bay and North Bend, Oregon, 1992.
4. Oregon DEQ – Water Quality Division, Construction Stormwater Best Management Practices Manual, March 2013.
5. Harza Engineering Company and Oregon Department of Transportation (ODOT) Geo/Environmental Section, ODOT Erosion Control Manual, April 2005.
6. ODOT, Oregon Standard Specifications for Construction, 2015.
7. Oregon DEQ – Water Quality Division, Construction Stormwater Erosion and Sediment Control Manual, January 2013.
8. United States Department of Agriculture, Utilization of Compost Filter Socks – Agronomy Technical Note No. 4, January 2011.



Eureka, CA | Arcata, CA | Redding, CA | Willits, CA | Coos Bay, OR | Klamath Falls, OR

Estuary Flood Risk and Hazard Study, Jordan Cove LNG Project Site

Jordan Cove LNG
5615 Kirby Drive
Houston, TX 77005



Prepared for:

Jordan Cove LNG



Revised July 2019
615034



Phone: (541) 266-9890 Email: info@shn-engr.com Web: shn-engr.com
275 Market Avenue, Coos Bay, OR 97420-2228

Reference: 615034

July 19, 2019

Mr. Mick Rowlands, PE
JC LNG, LLC
5615 Kirby Drive
Houston, TX 77005

Subject: Estuary Flood Risk and Hazard Study (Revised July 2019), Jordan Cove LNG Project Site

Dear Mick:

Enclosed please find SHN's revised analysis of flood risk and related hazards for the JC LNG project site. This study takes into consideration, an additional fill area (Appendix D, Figure 1), and an additional certification letter associated with flood impacts of all the fills including the additions (Appendix D). To prepare this study, we have relied on published data and have attached the reference materials for review. Readers may also review the Coos County Land Use code and the Comprehensive Plan to learn more about flood plain regulations in Coos County, Oregon.

Please feel free to contact me at 541-266-9890 if you have any questions.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.

A handwritten signature in black ink, appearing to read "Ron F. Stillmaker", is written over a horizontal line.

Ronald F. Stillmaker, PE
Regional Principal

RFS:dkl

Reference: 615034

Estuary Flood Risk and Hazard Study, Jordan Cove LNG Project Site

Prepared for:

JC LNG, LLC

5615 Kirby Drive
Houston, TX 77005



EXPIRES: 06-30-2020

Prepared by:



Consulting Engineers & Geologists, Inc.
275 Market Avenue
Coos Bay, OR 97420-2228
541-266-9890

Revised July 2019

August 2015

QA/QC: RFS

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Acronyms and Abbreviations

BFE	base flood elevations
FEMA	Federal Emergency Management Agency
FIRM	flood insurance rate mate
FIS	flood insurance study
JCEP	Jordan Cove Energy Project
LOMA	letter of map amendment
NFIP	National Flood Insurance Program
RM	river mile
SFHA	special flood hazard area
SHN	SHN Consulting Engineers & Geologists, Inc.
SLR	sea level rise

Introduction

The Jordan Cove Energy Project (JCEP) is located on properties bordering the Coos Bay Estuary where unique zoning and flood plain restrictions influence development. The proposed project will include removal of an upland area, turning it into intertidal and sub tidal lands, serving as a ship berthing/loading facility. The project will also require small amounts of fill to be placed into the Estuary to accommodate necessary upland improvements. This Study provides background for a reader to understand the Flood Plain and Flood Zone associated with the JCEP site, how flood regulations affect the use of the property, and how flood zoning should be addressed on the site. The Study also describes the flood zone and flood elevations affecting the project and defines how elevations and zoning limits were established.

Associated Terms

When considering established flood plains and flood plain management, the following terms are defined for better understanding of the issues and processes.

Flood Zones

Flood zones are land areas identified by the Federal Emergency Management Agency (FEMA). Each flood zone defines the risk of flooding associated with a land area. Land areas that are at high risk for flooding are called Special Flood Hazard Areas (SFHAs), or floodplains. These areas are indicated on Flood Insurance Rate Maps (FIRMs). Planning Issues addressed by the JCEP are associated directly with the SFHAs and their associated Base Flood Elevations (BFEs) mapped for the Coos Bay Estuary.

100-Year flood

100-year flood zones are areas that fall within the “high” risk of flooding boundary are called special flood hazard areas (SFHAs) and they are further divided into insurance risk zones. The term 100-year flood indicates that the area has a one-percent chance (1 in 100) of flooding in any given year, not that a flood will occur every 100 years.

500-Year flood

500-year flood zones are areas that fall within the “moderate” risk of flooding. The term 500-year flood indicates that the area has a two tenths-percent chance (1 in 500) of flooding in any given year.

FIRMs (Flood Insurance Rate Maps)

A FIRM is an official map of an area where FEMA has delineated both the special hazard areas and the risk premium zones applicable to building in the area. FIRMs display areas that fall within the flood risk boundaries. Changing weather patterns, erosion, and development can affect floodplain boundaries. Therefore, FEMA continually updates and modernizes the nations FIRMS. In Coos County, FIRM updates have been performed periodically with the latest updates occurring in 2014 and 2018 (Appendix A).

Special Flood Hazard Area

The National Flood Insurance Program's (NFIP's) maps show land area covered by the floodwaters of the base flood in Special Flood Hazard Area (SFHA). The SFHA is the area where the NFIP's floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies. In Coos County the SFHA includes Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, V1-30, VE, and V. Each area designation relates to the type of hazard associated with the flood in that area. Areas within the community studied by detailed engineering methods have Base Flood Elevations (BFEs) established in AE and VE Zones. The SFHA Zone associated with the JCEP is an AE Zone. The A represents that the Zone is based on a 100-year flood event and the E indicates that the BFE has been established through a comprehensive study.

Flood Insurance Study

To identify an area's flood risk, FEMA conducts a Flood Insurance Study (FIS). The study includes statistical data for river flow, storm tides, hydrologic/hydraulic analyses, and rainfall and topographic surveys. FEMA uses this data to create the flood hazard maps that outline the different flood risk areas.

Floodplains and areas subject to coastal storm surge are shown as high-risk areas or SFHAs. Some parts of floodplains may experience frequent flooding while others are only affected by severe storms. However, areas directly outside of these high-risk areas may also be at considerable risk.

Flood Insurance Study, Coos County, Oregon and Incorporated Areas

The Coos County FIS revises and updates information on the existence and severity of flood hazards in the geographic area of Coos County, including the Cities of Bandon, Coos Bay, Coquille, Lakeside, Myrtle Point, North Bend and Powers; and the unincorporated areas of Coos County (referred to collectively herein as Coos County).

Base map information shown on the County's FIRMs was derived from LiDAR ground and first return digital elevation models produced at a scale of 1:2300, from surveys conducted between June 8, 2008 and September 28, 2008. The projection used in the preparation of this map is Universal Transverse Mercator Zone 10 North, and the horizontal datum used is North American Datum 1983 (NAD 83).

The analysis prepared by FEMA established BFEs for the Coos Bay Estuary; however, no floodway has been designated for the portion of estuary adjacent to the JCEP project area. The September 25, 2009 (Revised March 17, 2014 and December 7, 2018), Flood Insurance Study for Coos County Oregon and Incorporated Areas states: "...the floodway concept is not applicable in areas where flooding is controlled by tidal influences." Estuary flood elevations for the area were developed assuming a combination of riverine, astronomical tide, and storm surge influences.

The JCEP properties associated with the proposed project are bordering the Coos Bay Estuary and include portions of land, which have been identified on NFIP maps (FIRMs, Revised March 17, 2014), that are contained within the Special Flood Hazard Areas. The two major land areas associated with the project (Ingram Yard & South Dunes) are addressed on two separate Coos County FIRM panels, (Appendix B). The

100-year BFE for Ingram Yard is established at eleven feet (11.0) by Coos County Panel 0167E. The 100-year BFE for the South Dunes site is established at twelve feet (12.0) by Coos County Panel 0186E.

The September 25, 2009 (Revised March 17, 2014 and December 7, 2018), Flood Insurance Study for Coos County Oregon and Incorporated Areas contains a table listing a summary of peak water elevations for waters within incorporated areas of Coos Bay. The following table represents the water surface elevations presented in the Coos County FIS which are directly across the bay from the JCEP:

Table 1 Peak Water Surface Elevation (Feet NAVD 88)

Coos Bay Flooding Source (JCEP Area of Similar Effect)	10-Percent-Annual-Chance (10-yr flood)	2-Percent-Annual-Chance (50-yr flood)	1-Percent-Annual-Chance (100-yr flood)	.02-Percent-Annual-Chance (500-yr flood)
Pony Slough (South Dunes)	11.3	12.0	12.2	12.8
West Corporate Limit of North Bend (Ingram Yard)	11.2	11.8	12.1	12.6

The South Dunes Site is located across the bay from Pony Slough and the Ingram Yard Site is located across the bay from the West Corporate Limit of North Bend. Therefore the 500 year flood elevation for the estuary adjacent to the Ingram Yard Site has been established by FEMA at 12.6 feet (NAVD 88) and the 500 year flood elevation for the bay adjacent to the South Dunes Site is established at 12.8 feet (NAVD 88).

Coos County Special Hazard Overlay Zone

Management of development within identified flood zones in unincorporated areas within Coos County is administered by the County. Flood plain management is addressed through the County's zoning ordinance as an "Overlay zone" which is super-imposed over the primary zoning district and adds further requirements or replaces certain requirements of the underlying zoning district. The requirements of the overlay zone are fully described in the text of the Floodplain overlay zone designation F/P (Appendix C).

Filling within the SFHA could have an effect on the BFE and is therefore the only identified JCEP activity that is required to be addressed by the County's Overlay Zone. It is proposed that the Ingram Yard Site will have a portion of the existing upland property dredged out resulting in new sub-tidal and intertidal area in the estuary. A proposed barge berth will be constructed inside the current estuary boundary. While the slip will increase the flood water storage volume in the Bay, the barge berth requires fill within the SFHA which will displace water. The County Overlay Zone requires the barge berth fill impact on the BFE to be addressed without allowing for consideration of the proposed increase in flood water storage volume associated with the slip.

The South Dunes portion of the proposed project will require a small amount of fill to be placed along the edge of the floodplain. This fill activity is also required to be addressed by the County's Overlay Zone.

Flood Level issues addressed by JCEP

Fill within SFHA

The JCEP proposes new fill within the SFHA of Coos Bay in FEMAs flood zone AE, between River Mile (RM) 8.0 to RM 9.3. The AE zone is an area designated by Coos County Code Section 4.6.205 as a Special Flood Hazard Area (SFHA). According to Coos County floodplain regulations in LDO Section 4.6.230(4), development within the SFHA cannot increase the base flood elevation by more than 1-foot (or create an increase in the flood hazard). SHN has prepared letters of "Certification of Impacts of Fill on the Flood Hazard of Coos Bay" which presented the determination that there would be no significant rise or detrimental effect on the BFE resulting from the proposed fill activities, (Appendix D).

LOMAs (Letters of Map Amendment)

In conjunction with the performance of land use and site planning work related to JCEP, SHN Consulting Engineers & Geologists, Inc. (SHN) applied to the Federal Emergency Management Agency, and received approval for two separate LOMA associated with the location of the Special Flood Hazard Area boundary on the South Dunes Site and the Ingram Yard Site. A LOMA is an amendment to the currently effective FEMA map which establishes that a property is not located in a Special Flood Hazard Area (SFHA). The LOMA process involved the following:

Determine Base Flood Elevation: The BFE and SFHA boundaries were defined by FEMA and identified on FIRM #41011C0186D. The BFE(s) for the project areas were established at an elevation of 12 feet on the September 25, 2009 FIRMs relative to the North American Vertical Datum of 1988 (NAVD 88).

Initial Comparison of Site Specific topographic information with published SFHA boundaries: Project site contours and a digital terrain model were developed by David Evans & Associates from project specific data acquisition of the site using Light Detection and Ranging (LiDAR) technology. Through the use of drafting software (Autodesk Civil 3D), SHN compared the LiDAR-established 12-foot elevation contour with that defined by the FIRMs. It was apparent that the LiDAR-defined contour was significantly different than those presented on the FIRMs.

LOMA Application: Due to significant variations between the location of the 12-foot elevation defined by LiDAR contours and the FIRM, a determination was made to apply to FEMA to obtain a LOMA to adjust the SFHA boundary to more accurately reflect elevations in the area. The LOMA process was developed by FEMA for verification of areas that may have been inadvertently mapped in a SFHA. Two MT-1 applications were completed and submitted by SHN along with supporting information including Autodesk DWG digital files, Metes and Bounds descriptions of the areas to be removed from the SFHA, and other mapping that depicted the areas of conflict compared to the FIRM depiction. FEMA evaluated the digital information and verified the extent of the BFE before issuing the LOMA.

On September 6, 2012 SHN received a LOMA Determination Document approving the LOMA Application (Case No.: 12-10-1228A) for the Ingram Yard Site and on May 7, 2013 SHN received a LOMA Determination Document approving the LOMA Application (Case No.: 13-10-0670A) for the South Dunes Site. The approval determinations are attached in Appendix E.

Both of the approved LOMAs were submitted based upon making adjustments to the BFEs published on the September 25, 2009 FIRMs. The September 25, 2009 FIRMs were revised and adopted by NFIP on March 17, 2014. Along with adoption of the revised versions of the FIRMs, previous LOMAs, including those discussed above, have been revalidated by FEMA, (see Appendix E).

Sea Level Rise

There have been a number of recent studies that provide predictions as to the amount of future sea level rise (SLR) in the eastern pacific and a few focusing on the west coast. Among them the most notable include the following:

CCCCSLR	California Coastal Commission SLR guidance document, Public Review Draft January 1014.
NRC 2012	Local sea level rise projections from the U.S. National Research Council, developed for California, Oregon and Washington.
NOAA 2012	Combined sea level rise model and emissions scenario system developed by federal agencies led by NOAA in 2012, to inform the U.S. National Climate Assessment.
Army Corps of Engineers	Global sea level rise projections from U.S. Army Corps of Engineers guidelines, and also used as the basis for the unified projections of the four-county Southeast Florida Regional Climate Change Compact. Based on an earlier National Research Council study.
IPCC 2014	Global sea level projections developed by the U.N. Intergovernmental Panel on Climate Change (Assessment Report 5, Working Group 1).
Semi-empirical	Global sea level projections developed by Vermeer and Rahmstorf in 2009, based on the historic relationship between global warming and the rate of sea level rise.

The maximum SLR estimates in the California Coastal Commission SLR guidance document for the year 2030 is 12 inches, for the year 2050 is 24 inches, and for the year 2100 is 66 inches. The US Army Corps of Engineers has a high estimate of 4.5 feet in the year 2100, an intermediate estimate of 1.5 feet by the year 2100 and a low estimate of 6 inches by the year 2100. While it is clear that there is some agreement over the next 20 years, beyond 20 years from now there is little agreement on SLR projections as evidenced by the large range of SLR in the year 2100. Because they are purposely focused on the California and Oregon Coast, we recommend the SLR estimates from National Research Council (2012) be used when considering the effects on future flood levels. The NRC (2012) projections include a lower, middle and upper range of sea level rise. The lower level projected for the year 2070 (using a 50-year life for the facilities) is 0.4 ft.; middle range projection of 1.1 ft; and an upper range projection of 2.2 ft.

Conclusion

The proposed project area is located within and adjacent to the Coos Bay estuary which includes a special flood hazard area managed by Coos County through flood plain overlay zoning. The overlay zoning requires that the affects of fill proposed to be placed within the flood plain overlay zone be evaluated and determined to have no detrimental affects on flooding in the estuary. The JCEP project has determined that

the minimal amounts of fill placed below the BFE will have no measurable effect on the estuary nor will it affect flooding elsewhere within the estuary.

Flood risks (determined by FEMA) for the Coos Bay estuary near the project site and the water elevations associated with that risk are presented in Table 2.

Table 2 Flood Risk Elevations

	Ingram Yard	South Dunes
100-year base flood elevation	11	12
500-year base flood elevation	12.6	12.8
Upper range projected sea level rise ¹	2.2	2.2
1. Increase to base elevation		

Recommendations

Structures located within the flood zone but below the desired flood elevation, should be flood proofed to one foot higher than the design flood elevation. Flood proofing will involve but is not necessarily limited to the following flood resistant techniques:

- Be designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement and shall be installed using methods and practices that minimize flood damage.
- Be constructed with materials and utility equipment resistant to flood damage.
- Be constructed by methods and practices that minimize flood damage. and
- Electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

FIRM Maps **1**

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources or small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or Floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Significant Encroachment Tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with

the FIRMs for purposes of construction and/or floodplain management.

Boundaries of the floodways were compiled at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for the jurisdiction.

The projections used in the preparation of this map was Universal Transverse Mercator (UTM) zone 10. The horizontal datum was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of datasets for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this IPRA.

NGS Information Services
 These flood elevations may be referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGAA, NINGUS12
National Geodetic Survey
SCMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3232
(301) 713-3242

The topographic base map for this FIRM revision is derived from aerial lidar surveys conducted between June and August 2003. Orthorectification acquired in 2009 was used where lidar coverage was unavailable for portions of eastern Cook County.

Based on updated topographic information, this map reflects more detailed and up-to-date stream channel configurations and floodplain delineations than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Roadway Data tables for multiple streams in the Flood Insurance Study Report which contains authoritative hydraulic data may reflect stream channel distances that differ from what is shown on the map. Also, the distance between stream channels may deviate significantly from the printed distance or appear outside the CHHA.

shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed Map Index for an overview map of the available themes. The Index of Map Index provides a map number and address to enable theme use.

Contact the FEMA Map Service Center (MSC) via the FEMA Map Information eXchange (FMIX) at 1-877-339-2027 for information on available products associated with this FMIX. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The MSC may be reached by e-mail at fmap@fema.gov and website at www.fema.gov/fmap.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-362-6227) or visit the FEMA website at <http://www.fema.gov/outilsmap2/>.



SPECIAL FLOOD HAZARD AREAS (SFHA): SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

[illegible]

ZONE A1
Special flood hazard areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently destroyed. Zone A1 indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99
Area to be protected from 1% annual chance flood by a Federal flood control system under construction; no final flood elevations determined.

ZONE V
Coastal flood zone with velocity hazard (wave action); no final flood elevations determined.

ZONE VE
Channel flood zone with velocity hazards (value at risk): Bay of Fundy (Atlantic)

FLOODWAY AREAS IN ZONE AE
Floodways in the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment to limit the 1% annual chance flood can be carried without substantial increases in water heights.

OTHER FLOOD AREAS

AREA X Areas of 0.2% annual chance flood, areas of 1% annual chance flood with average depths of less than 1 foot or with average peak less than 2 square miles, and areas protected by levees from 1% annual chance flood.

AREA X Areas determined to be outside the 0.2% annual chance floodplain.

AREA D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
CBRS Areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas
1% Annual Chance Floodplain Boundary
0.2% Annual Chance Floodplain Boundary

 Floodway boundary
 Zone 2 boundary
 CWS and CPA boundary
 Boundary dividing Special Flood Hazard Area Zones and boundary enclosing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
 Base Flood Elevation line and value; elevation in feet*
 12

(11.88%):

Interpreted by the North American Vertical Datum of 1988

Base Elevation value where uniform within zone; elevation is flat*

Bridge

0° 02' 00" 91° 02' 12"

Applicant: N

22510 X

M15

Super Rice

MASSDOT/02001701

Geographic coordinates referenced in the North American Datum of 1983 (NAD 83) within parentheses

1000-meter Universal Transverse Mercator grid values, zone 18

Search more (see explanation in Notes to Users section of this 2014

EFFECTIVE DATE OF REVISIONS TO THIS PANEL

March 17, 2014 - In update numerous towns, to change Special Flood Hazard Areas, to change flood insurance rates, to update water bodies and roads and rail routes, to incorporate newly available digital elevation data, to update flood hazard information, to change boundary, and to make other updates.

For community map renewal history and to ensure wide mapping, refer to the Community Map History file located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-435-4629.

FIRM
FLOOD INSURANCE RATE MAP
PANEL 0167E

**COOS COUNTY,
OREGON
AND INCORPORATED AREAS**

PANEL 167 OF 1200
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:		HINCHER	PANEL	SURFING
COMMUNITY	COOL BAY CITY OF	41044	3041	C
	COOL COUNTY	41042	3042	E
	NORTH WIND CITY OF	41044	3043	E

Notice to User: The Map Number shown below should be used when placing map orders. The

Community Number shown above should be used on insurance applications for this subject community.

MAP NUMBER
41011C0167E

MAP REVISED



 MARCH 17, 2014
 Federal Emergency Management Agency
 Exhibit 11
 Page 13 of 221

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Flood Insurance Study **2**

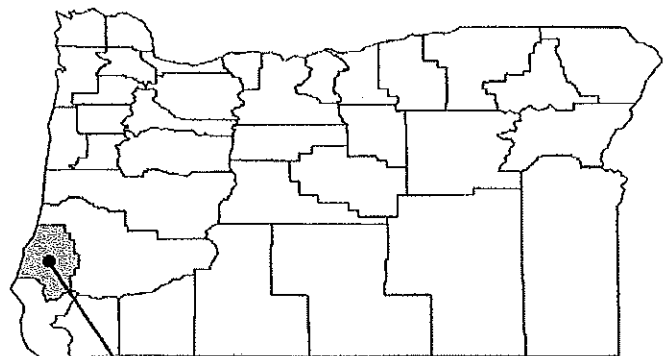
FLOOD INSURANCE STUDY

Volume 1 of 2



COOS COUNTY, OREGON AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
BANDON, CITY OF	410043
CONFEDERATED TRIBES OF COOS, LOWER UMPQUA AND SIUSLAW	410292
COOS BAY, CITY OF	410044
COOS COUNTY (UNINCORPORATED AREAS)	410042
COQUILLE, CITY OF	410046
COQUILLE INDIAN TRIBE	410102
LAKESIDE, CITY OF	410278
MYRTLE POINT, CITY OF	410047
NORTH BEND, CITY OF	410048
POWERS, CITY OF	410049



Coos County

REVISED:
DECEMBER 7, 2018



Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
41011CV001C

NOTICE TO FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) report may not contain all data available within the Community Map Repository. Please contact the Community Map Repository for any additional data.

The Federal Emergency Management Agency (FEMA) may revise and republish part or all of this FIS report at any time. In addition, FEMA may revise part of this FIS report by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS report. Therefore, users should consult with community officials and check the Community Map Repository to obtain the most current FIS report components.

Initial Countywide FIS Effective Date: September 25, 2009

Revised Countywide FIS Date: March 17, 2014
December 7, 2018

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December 7, 2018

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South Fork Coquille River	10P-11P
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East Fork Millacoma River	13P
West Fork Millacoma River	14P
Pony Creek	15P-16P
Tenmile Creek	17P-18P

Exhibit 2 - Flood Insurance Rate Map Index Flood Insurance Rate Map

FLOOD INSURANCE STUDY COOS COUNTY, OREGON AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of Coos County, including the Cities of Bandon, Coos Bay, Coquille, Lakeside, Myrtle Point, North Bend and Powers; the unincorporated areas of Coos County (referred to collectively herein as Coos County); the Coquille Indian Tribe; and the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw; and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood-risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

1.2 Authority and Acknowledgments

The sources of authority for this FIS are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

Pre-Countywide Analyses

Coos County Unincorporated Areas. Flood Hazard Boundary Maps for Coos County, Oregon, were produced by the U.S. Department of Housing and Urban Development in September 1977 (community panel numbers 0001-0021).

City of Bandon. Flood Hazard Boundary Maps for City of Bandon, Coos County, Oregon, were produced by the U.S. Department of Housing and Urban Development in December 1973 and revised in April 1976 (community panel numbers 410043A 01-03).

City of Coos Bay. Flood Hazard Boundary Maps for City of Coos Bay, Coos County, Oregon, were produced by the U.S. Department of Housing and Urban Development in March 1977 (community panel numbers 410044 0001-0005).

City of Coquille. Flood Hazard Boundary Maps for City of Coquille, Coos County, Oregon, were produced by the U.S. Department of Housing and Urban Development in November 1973 and revised October 1975.

City of Myrtle Point. Flood Hazard Boundary Maps for City of Myrtle Point, Coos County, Oregon, were produced by the U.S. Department of Housing and Urban Development in November 1973 and revised December 1975.

City of North Bend. Flood Hazard Boundary Maps for City of North Bend, Coos County, Oregon, were produced by the U.S. Department of Housing and Urban Development in June 1974 (community panel numbers 410048A 01-03).

Coos County Unincorporated Areas. The detailed riverine and estuarine hydrologic and hydraulic analyses for this study were performed by CH2M Hill Northwest, Inc., for FEMA, under Contract No. EMW-C-0283. This work was completed in April 1982 and represents a portion of the original FIS performed for Coos County.

City of Bandon. The original FIS was revised to update coastal flood information from the south jetty to the southern city limit of Bandon. The work was performed by CH2M Hill, Inc., under FEMA Contract No. EMW-94-C-4526 and was completed in September 1995. Note that the present countywide update revises this area and supersedes this update.

Countywide Analyses

A countywide update and vertical datum conversion was performed by WEST Consultants, Inc., for FEMA, under Contract No. EMS-2001-CO-0068. This countywide update occurred under FEMA's Map Modernization program, the purpose of which was to create digital versions of the Flood Insurance Rate Maps (DFIRMs), create a single layout format for the entire area within the county, and compile a single FIS report that includes all FIS information and data for the entire county area. During this countywide update revised hydraulic data were incorporated for Pony Creek (in the cities of Coos Bay and North Bend). See Section 3.2 for more information about the hydraulic data revision for Pony Creek. Portions of Pony Creek, Coos Bay, and the Pacific Ocean flood zones were redelineated with 2 foot contours provided by the City of North Bend. Portions of the Pacific Ocean flood zones were also redelineated with LiDAR provided by NOAA. All other flood mapping was incorporated as-is from the original FIS. This update was completed in July 2008.

The present countywide update was performed by the Oregon Department of Geology and Mineral Industries (DOGAMI), for FEMA, under Contract No. EMS-2008-GR-0013. During this countywide update, revised detailed and approximate coastal hydrologic and hydraulic analyses were performed for the entire coastline. Revised approximate riverine hydrologic and hydraulic analyses were also performed for county where new, high quality topographic data (LiDAR) was available. Finally, revised mapping of detailed riverine and estuarine study areas (from original FIS) was performed by redelineating to LiDAR provided by the Oregon LiDAR Consortium. This redelineation work

supersedes all similar work performed for the previous countywide analysis. This update was completed in March 2014.

Base map information shown on the Flood Insurance Rate Map (FIRM) was derived from LiDAR ground and first return digital elevation models produced at a scale of 1:2,300, from surveys conducted between June 8, 2008 and September 28, 2008. The projection used in the preparation of this map is Universal Transverse Mercator Zone 10 North, and the horizontal datum used is NAD 1983.

1.3 Coordination

An initial meeting is held with representatives from FEMA, the community, and the study contractor to explain the nature and purpose of a FIS, and to identify the streams to be studied or restudied. A final meeting is held with representatives from FEMA, the community, and the study contractor to review the results of the study.

The initial and final meeting dates for previous FIS reports for Coos County and its communities are listed in the following table:

Table 1. Initial, Intermediate, and Final CCO Meetings

<u>Community</u>	<u>Initial CCO Date</u>	<u>Intermediate CCO Dates</u>	<u>Final CCO Meeting</u>
Coos County (Unincorporated Areas)	May, 1979	--	November, 1980
Bandon, City of	May, 1979	March 22, 1983	August 23, 1983
Coos Bay, City of	May, 1979	--	August 24, 1983
Coquille, City of	May, 1979	--	July 20, 1983
Lakeside, City of	May, 1979	March 22, 1983	August 25, 1983
Myrtle Point, City of	May, 1979	--	December 4, 1980
North Bend, City of	May, 1979	--	August 24, 1983
Powers, City of	-- ¹	-- ¹	-- ¹

¹Information not available

Streams, lakes, estuarine and coastal areas requiring detailed study were identified at a meeting attended by the CH2M Hill Northwest, Inc., FEMA, and representatives of Coos County in May 1979. The U.S. Geological Survey (USGS), the U.S. Army Corps of Engineers (USACE), and the Coos-Curry Council of Governments were contacted for information used in the initial study.

Streams, lakes, estuarine and coastal areas requiring revision were identified at a meeting attended by the CH2M Hill Northwest, Inc., FEMA, and representatives

of the City of Bandon on March 22, 1983. The USGS was contacted for hydrologic information. The USACE, the Bandon Historical Society, and the Port of Coquille were contacted for information on past flooding in the city.

An initial community coordination meeting for Coos County was held on March 14, 2006, to address the first-time countywide update and vertical datum conversion. This meeting was attended by representatives of the cities and county, State of Oregon, FEMA and WEST Consultants.

The results of the update were reviewed at the final Consultation Coordination Officers' meeting held on November 5, 2008, and attended by representatives of FEMA, the City of Coos Bay, the City of Coquille, the City of Lakeside, the City of Myrtle Point, the City of North Bend, Coos County, the Oregon Department of Land and Development (DLCD) and DOGAMI.

Present Countywide Update

The initial meeting was held on January 7, 2009, and attended by representatives of FEMA, Coos County, the City of Bandon, the City of Coos Bay, the City of North Bend, the City of Coquille, the Coquille Indian Tribe, DLCD, and DOGAMI.

The results of the study were reviewed at the final meeting held on June 7, 2011, and attended by representatives from the Coquille Indian Tribe, the Cities of Bandon, Coos Bay, Lakeside, Myrtle Point, and North Bend, and representatives from DOGAMI, STARR, DLCD, and FEMA. All problems raised at that meeting have been addressed.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the geographic area of Coos County, Oregon, including the incorporated communities listed in Section 1.1. The areas studied by detailed methods were selected with priority given to all known flood hazards and areas of projected development or proposed construction through 1987, determined during scoping of the original FIS.

The following flooding sources were studied by detailed methods in this FIS report:

Table 2. Summary of Flooding Sources Studied by Detailed Methods

<u>Flooding Source</u>	<u>Limits of Detailed Study</u>
Tenmile Creek	From Lake Front Road bridge to Tenmile Lake within the City of Lakeside
Tenmile Lake	Within corporate limits (as of 1982) of the City of Lakeside
North Tenmile Lake	Within corporate limits (as of 1982) of the City of Lakeside
Millicoma River	From river mile (RM) 8.2 to the confluence of the East and West Forks Millicoma River
East Fork Millicoma River	From its confluence with West Fork Millicoma River to RM 10.7
West Fork Millicoma River	From its confluence with East Fork Millicoma River to RM 2.0
Coquille River	Within the corporate limits (as of 1982) of the City of Bandon, from RM 16 to RM 17 at Riverton, from RM 23 to RM 27.5 at the City of Coquille, and from RM 32 to RM 33 at Arago
South Fork Coquille River	From RM 36.4 to RM 38.4 at the City of Myrtle Point
Pony Creek	From the Virginia Avenue bridge in the City of North Bend to Ocean Boulevard in the City of Coos Bay
Cunningham Creek	Within corporate limits (as of 1982) of the City of Coquille
Calloway Creek	Within corporate limits (as of 1982) of the City of Coquille

Table 2. Summary of Flooding Sources Studied by Detailed Methods
(continued)

<u>Flooding Source</u>	<u>Limits of Detailed Study</u>
Ferry Creek	From its confluence with Coquille River to upstream of Harlem Avenue within the City of Bandon
Coos River	From its confluence with Coos Bay to 2 miles upstream (area of tidal influence)
Cooston Channel	From its confluence with Coos Bay to its confluence with Coos River
Catching Slough	Within corporate limits (as of 1982) of the City of Coos Bay
Coos Bay	From its confluence with the Pacific Ocean to its confluence with Coos River and Cooston Channel
Isthmus Slough	From its confluence with Coos Bay to 0.3 miles upstream of Coos-Summer Lane bridge
Coalbank Slough	From its confluence with Isthmus Slough to Shinglehouse Road
Pony Slough	From its confluence with Coos Bay to its confluence with Pony Creek within the City of North Bend
Haynes Inlet	From its confluence with Coos Bay to its confluence with Larson and Palouse Sloughs
North Slough	From its confluence with Coos Bay to the Highway 101 bridge near North Bay Road at Hauser

Table 2. Summary of Flooding Sources Studied by Detailed Methods
(continued)

<u>Flooding Source</u>	<u>Limits of Detailed Study</u>
South Slough	From its confluence with Coos Bay to Valino Island

This revision used LiDAR to re-delineate Special Flood Hazard Areas (SFHAs) to the flood elevations determined by detailed methods in the original FIS. This approach was applied in all detailed study areas listed above.

The following flooding sources are studied by revised detailed methods in this FIS report:

Table 3. Summary of Flooding Sources Studied by Revised Detailed Methods

<u>Flooding Source</u>	<u>Limits of Revised Detailed Study</u>
Pacific Ocean	From the north jetty at Coos Bay to Sunset Bay, and from the south jetty at Coquille River to the southern extent of the City of Bandon Urban Growth Boundary

The limits of detailed study are indicated on the Flood Profiles (Exhibit 1) and on the FIRM (Exhibit 2).

Approximate analyses were used to study those areas having low development potential or minimal flood hazards. These areas were adopted from previously effective flood hazard boundary maps (U.S. Department of Housing and Urban Development, 1977). The scope and methods of study were proposed to and agreed upon by FEMA, the communities, and the study contractor, DOGAMI.

The following flooding sources are studied by revised approximate methods in this FIS report:

Table 4. Summary of Flooding Sources Studied by
Revised Approximate Methods

<u>Flooding Source</u>
Pacific Ocean, excluding areas studied by revised detailed methods

Table 4. Summary of Flooding Sources Studied by Revised
Approximate Methods (continued)

Flooding Source

Tenmile Creek Basin, including these tributaries and lakes:

Saunders Creek, Clear Lake, Saunders Lake, Eel Creek, Eel
Lake, Tenmile Lake, North Tenmile Lake, Murphy Creek, Big
Creek, Noble Creek, Alder Gulch, Benson Creek, Roberts
Creek, Johnson Creek, Adams Creek, Shutter Creek

Lakes of the Oregon Dunes National Recreation Area:

Lyons Reservoir, Snag Lake, Sandpoint Lake, Spirit Lake,
Horsfall Lake

Coos River Basin, including these tributaries and lakes:

Winchester Creek, John B Creek, Talbot Creek, Talbot
Slough, Elliott Creek, Joe Ney Slough, North Fork Joe Ney
Slough, South Fork Joe Ney Slough, Tarheel Creek, Fourth
Creek, First Creek, Chickses Creek, Lower Empire Lake,
Upper Empire Lake, North Slough, Palouse Slough, Palouse
Creek, Larson Slough, Larson Creek, Kentuck Slough,
Kentuck Creek, Mettman Creek, Willanch Slough, Willanch
Creek, Johnston Creek, Coalbank Creek, C. A. Smith
Reservoir, Noble Creek, Delmar Creek, Davis Slough, Upper
Isthmus Slough, Ross Slough, Catching Slough, Catching
Creek, Millicoma River, Marlow Creek, East Fork Millicoma
River (Not Revised), Glenn Creek (Not Revised), West Fork
Millicoma River, Elk Creek, South Fork Coos River, Williams
River

Coquille River Basin, including these tributaries and lakes:

Ferry Creek, Fahy's Creek, Fahy's Lake, Sevenmile Creek,
Bear Creek, Lampa Creek, Hatchet Slough, Beaver Creek, Fat
Elk Creek, Calloway Creek, Cunningham Creek, Rink Creek,
Fishtrap Creek, Hall Creek, North Fork Coquille River, East
Fork Coquille River, Elk Creek, Brummit Creek (Not
Revised), Middle Creek, Cherry Creek, Evans Creek,
Woodward Creek, Catching Creek, Middle Fork Coquille
River, Big Creek, Myrtle Creek, Rock Creek, Sandy Creek

Table 4. Summary of Flooding Sources Studied by Revised
Approximate Methods (continued)

Flooding Source

New River Basin, including these tributaries and lakes:

Fourmile Creek, Laurel Creek, Laurel Lake, Lost Lake, Davis
Creek, Muddy Lake, Croft Lake, Conner Creek, Bethel Creek,
New Lake, Butte Creek, Morton Creek

Threemile Creek

Twomile Creek

Cut Creek Basin, including Chrome Lake and Round Lake

Johnson Creek

Crooked Creek

China Creek Basin, including Bradley Lake

Twomile Creek Basin, including Lower and South Twomile Creeks

2.2 Community Description

Coos County is located in southwest Oregon. The county is bounded on the west by the Pacific Ocean, on the south by Curry County, and on the east and north by Douglas County. Coos County is about 66 miles long, 36 miles wide, and covers an area of 1,629 square miles. About one-third of the county is publicly owned. The U.S. Bureau of Land Management, the U.S. Forest Service, the U.S. Fish and Wildlife Service, and the Oregon State Land Board own most of the public lands (Sidor and Brown, 1967). Only about 1 percent of the area in the county has been urbanized or built up. The county was founded on December 22, 1853. According to the U.S. Census Bureau, Coos County's population was 63,043 in 2010 (U.S. Department of Commerce, 2010). In 1990, the population was 60,273 (U.S. Department of Commerce, 2010). The Coos County economy is based on tourism, agriculture, forest products, and fishing (Coos County Emergency Management Department, 2005).

The Coquille River basin, with a drainage area of 1,058 square miles, covers most of the southern two-thirds of the county. Flow from the basin enters the Pacific Ocean at Bandon. Upstream at RM 36.3, about a mile south of Myrtle Point, the river branches into the South Fork and North Fork Coquille Rivers. The South Fork Coquille River has a drainage area of 598 square miles and a length of 62.8

miles. The North Fork Coquille River has a drainage area of 289 square miles and a length of 53.3 miles (Pacific Northwest River Basins Commission, 1968). Both forks begin in the Coast Range Mountains. The cities of Myrtle Point and Powers are located on the South Fork Coquille River, and the cities of Coquille and Bandon are located on the main stem of the Coquille River. Tidal influences extend as far upstream as Myrtle Point on the South Fork Coquille River. About 70% of the Coquille River basin is forested. Private industrial forest holdings make up 40% of the watershed. The remaining 30% of forested lands are federal, state, and county lands. (Coos County Emergency Management Department, 2005) Two federal agencies, the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS), administer the largest of these public holdings.

The Coos River basin, with a drainage area of 415 square miles covers most of the northeast corner of the county. The Coos River flows into Coos Bay at the City of Coos Bay. Upstream at RM 5.5, the Coos River branches into the Millicoma River and the South Fork Coos River. The Millicoma River has a drainage area of 151 square miles while the South Fork Coos River has a drainage area of 254 square miles. The Millicoma River branches into the East Fork and West Fork Millicoma Rivers at RM 8.1. Tidal influences extend upstream to Dellwood on the South Fork Coos River and to the confluence of the East and West Forks on the Millicoma River. The East Fork Millicoma River has a drainage area of 79 square miles and a length of 23.9 miles. The West Fork Millicoma River has a drainage area of 55 square miles and a length of 34.9 miles (Pacific Northwest River Basins Commission, 1968). About 80% of the Coos River basin is forested.

Coos Bay, located in the west-central part of Coos County, is the largest estuary in Oregon. The bay covers an area of about 17 square miles and drains a total of 605 square miles (Percy and Sutterlin, 1974). Tributaries such as the South Slough, North Slough, Larson and Palouse Creeks, Isthmus Slough, and Catching Slough account for 190 square miles of the drainage area. The Coos River accounts for the remaining 415 square miles. The Cities of Coos Bay and North Bend are located on the bay.

The original natural estuarine environments of Coos Bay have been altered by the community's dependence on wetland and estuarine resources and the need for flat, dry land. Diking, draining, and filling of marshes began in the 1870's to create the present city of Coos Bay, expand rail and road routes, and accommodate more ranches and homes. In 1970, when only 15% of the original marsh remained, state and federal laws slowed the conversion process (Coos County Emergency Management Department, 2005).

The eastern two-thirds of the Coos River basin is sparsely populated and made up of steep forested slopes. This area has been managed exclusively for time since the late 1800's. About 36,000 people live in the basin, with the bulk of the population clustered about the eastern half of the estuary and lower riverbanks. Until the late 1980's the area was heavily reliant on natural resource extraction,

such as timber production, fishing, and agriculture. Many family wage jobs have been lost as these industries saw a decline in the availability of resources. The area is struggling with a transition to utilize other economic opportunities, such as tourism (Coos County Emergency Management Department, 2005).

The Tenmile Creek basin, with a drainage area of about 86 square miles, covers most of the northwest corner of the county. Tenmile Creek flows generally west for 5.1 miles from the outlet of Tenmile Lake at Lakeside to the Pacific Ocean. The drainage area above the outlet of Tenmile Lake is 70.6 square miles. This drainage area includes North Tenmile Lake which is connected to Tenmile Lake by a 0.4-mile-long canal. The drainage area above the outlet of North Tenmile Lake is 29.0 square miles. North Tenmile Lake and Tenmile Lake cover about 980 and 1,350 acres, respectively (Sidor and Brown, 1967). Most of the steep forested slopes in the upper basin are found in the Elliott State Forest, which is managed by the Oregon Department of Forestry (Coos County Emergency Management Department, 2005).

The native fishery in the Tenmile Creek basin was primarily Coho salmon, steelhead, and sea-run cutthroat trout. In the 1930's, yellow perch, small mouth bass, brown bullhead catfish and other non-native fish were introduced to the lakes. In 1996, the lakes in the Tenmile Creek basin were placed on the Department of Environmental Quality's list for water quality problems with bacteria, aquatic weeds, temperature, and algae (Coos County Emergency Management Department, 2005).

Coos County has a temperate marine climate with typically mild temperatures, wet winters, and dry summers. The average temperature in January is about 50°F and in July, about 60°F. The average annual temperature ranges from 50 to 54°F. The average yearly rainfall along the coast is about 60 inches. Further inland in the Coast Range, average yearly rainfall may reach 100 inches or more, depending on the location and elevation. Approximately 75 percent of the rainfall occurs from November through March. In coastal areas prevailing winds during March through October are from the northwest with an average speed of 17 miles per hour. During November through February, prevailing winds are from the southwest with an average speed of 15 miles per hour (Sidor and Brown, 1967).

The topography of Coos County is predominately steep and mountainous. The Coast Range Mountains begin near the coastline and rise to average peak elevations of 2,500 to 3,500 feet at the crest of the Coast Range. The Coast Range in Coos County is predominately composed on marine sedimentary rock with some igneous and metamorphic rock occurring in the southern end of the county. The sedimentary rock is composed of alluvium, siltstone, mudstone, sandstone, shale, and conglomerates. The igneous rock is composed of basalt, breccia, tuff, diorite, and peridotite. The metamorphic rock is composed of gneiss, schist, and serpentine. Soils in the county are generally clayey (Sidor and Brown, 1967).

Land located in the river valleys of Coos County is used predominately for agriculture.

City of Bandon

The City of Bandon is located on the Pacific Ocean at the mouth of the Coquille River in southwestern Coos County. Bandon is located 23 miles southwest of Coos Bay along U.S. Highway 101, 27 miles north of Port Orford along U.S. Highway 101, and 18 miles southwest of Coquille along State Highway 42S. The city was incorporated in 1891. According to the U.S. Census Bureau, the population of Bandon was 3,066 in 2010 (U.S. Department of Commerce, 2010). In 1990, the population was 2,215 (U.S. Department of Commerce, 2010).

The Coquille River flows through the northwestern corner of Bandon and empties into the Pacific Ocean. Most of the city is located on a high bluff overlooking the ocean and river estuary. The Coquille River is 99 miles long from the beginning of the South Fork Coquille River to the Pacific Ocean, and drains an area of 1,058 square miles covering most of the southern two-thirds of Coos County (City of Bandon, 1977). The average annual precipitation over the Coquille River basin is 66 inches (Beaulieu and Hughes, 1975).

Ferry Creek flows through the southeast corner of Bandon to the Coquille River. Ferry Creek is 3.8 miles long and drains an area of 5.2 square miles.

The corporate limits of Bandon enclose 3.2 square miles. Most of this area is lightly developed. The two most densely developed areas are along U.S. Highway 101 and near Harbor Lights High School. All of the flood plain areas studied are lightly developed and predominantly residential areas, except for the old downtown area between U.S. Highway 101 and the Coquille River. Development within the old downtown area is mainly commercial, with some industrial development, including a fish processing plant and a lumber mill.

The average annual rainfall at Bandon is approximately 60 inches. The mean temperature in January is approximately 50° F, and in July, approximately 60° F. From May through August, the prevailing winds are from the northwest, while the prevailing winds in winter are from the southwest. Winter winds are usually less than those experienced during the summer except during an occasional winter storm (Coos County Emergency Management Department, 2005).

Soils in the City of Bandon are predominantly sandy loams. The coastal cliffs and offshore rocks are a mixture of sandstone, siltstone, volcanic rock, chert, and blue schist. In undeveloped areas of Bandon south of the Coquille River estuary, vegetation includes salal, wild rhododendron, pine, cypress, and gorse. The Bandon tidal marsh covers approximately 25 percent of the Coquille River estuary (City of Bandon, 1978).

Bandon is served by U.S. Highway 101 and State Highway 42S.

City of Coos Bay

The City of Coos Bay is located in western Coos County at the southern end of a peninsula that extends north into the Coos Bay estuary. The City of Coos Bay is located approximately 4 miles east of the Pacific Ocean, approximately 27 miles south of Reedsport, and approximately 17 miles north of Coquille. The City of Coos Bay is bounded by the City of North Bend to the north, the Coos Bay estuary to the east and west, and Coos County to the south. The city covers 16.1 square miles. The city was incorporated in 1874. According to the U.S. Census Bureau, the population of Coos Bay was 15,967 in 2010 (U.S. Department of Commerce, 2010). In 1990, the population was 15,076 (U.S. Department of Commerce, 2010).

The downtown area of the City of Coos Bay is located on Isthmus Slough, which enters the Coos Bay estuary near the intersection of Date Avenue and Front Street. Coalbank Slough follows the southeast corporate limits and enters Isthmus Slough east of the intersection of Hall Avenue and Front Street. Isthmus Slough and Coalbank Slough drain an area of 33.3 square miles south of the bay.

The Coos River, the major tributary of Coos Bay, flows into the bay through the Marshfield and Cooston Channels east and north of the developed portion of the City of Coos Bay. The Coos River drains an area of 415 square miles and has several forks including the Millicoma River, the East and West Fork Millicoma Rivers, the South Fork Coos River, and the Williams River. Catching Slough also flows into Coos Bay through the Marshfield Channel and has a drainage area of 25.2 square miles above the southern corporate limits of the City of Coos Bay.

Pony Creek has its headwaters in the hills southwest of the City of Coos Bay and flows north to the Coos Bay estuary. Pony Creek drains the central portion of the peninsula on which Coos Bay and North Bend are located. The creek has a length of 5.6 miles and a drainage area of 6.4 square miles above Virginia Avenue in North Bend. The Coos Bay North Bend Water Board operates two dams on Pony Creek for municipal water supplies. The drainage area above the upper dam is 2.9 square miles, while the drainage area above the lower dam is 3.9 square miles. At normal winter pool elevation, the storage volume in the reservoir behind the upper dam is 2,090 acre-feet, and the storage volume in the reservoir behind the lower dam is 123 acre-feet (CH2M HILL, 1978).

Blossom Creek has its headwaters in the hills between the Pony Creek basin and downtown Coos Bay, and drains an area of 1.0 square mile above 10th Street. At 10th Street, Blossom Creek enters the Mill Slough Box, a major storm sewer that drains several smaller systems in downtown Coos Bay and then discharges into Isthmus Slough 3,200 feet downstream of 10th Street.

Average annual precipitation at Coos Bay is approximately 60 inches. The majority of the rainfall occurs from November through March (Erichsen et al., 1966). In January, the coldest month, the mean temperature is approximately 46.6°F, and in July, the warmest month, the mean temperature is approximately 59.0°F. From May through August, prevailing winds are from the northwest, while in winter prevailing winds are from the southwest. Winter winds are usually milder than those during the summer, except during an occasional winter storm.

Soils in Coos Bay are predominantly sandy loams. In areas affected by tidal action along the bay, Coalbank and Isthmus Slough, and Pony Creek, the soils range from silty clay loams to sandy loams (U.S. Department of Agriculture, 1975). Most of Coos Bay is underlain by either coarse- to fine-grained sandstone of the Coaledo formation or Quaternary marine terrace deposits (Beaulieu and Hughes, 1975).

Most of the developed part of the City of Coos Bay that was formerly known as Eastside is underlain by the Bastendorff Formation consisting of shale and siltstone with minor sandstone interbeds (City of Eastside, 1978). A substantial amount of land north and west of the developed area has been, and will continue to be, filled with dredged material. Soils are predominantly silt loams where no fill has been placed.

A large portion of all land within the Coos Bay corporate limits is undeveloped or open lands including rights-of-way, city parks, and land owned by the Coos Bay-North Bend Water Board. Most residential areas are centered around downtown Coos Bay, in the Empire area, and along major arterials such as Southwest Boulevard, Ocean Boulevard, and Newmark Street (Coos Bay City Council, 1981). Development in areas affected by flooding is predominantly commercial and industrial with only limited residential areas affected.

Coos Bay is served by U.S. Highway 101 and the Southern Pacific Railroad.

City of Coquille

The City of Coquille is located in western Oregon, in the south-central portion of Coos County. The closest incorporated community is the City of Myrtle Point, located 9 miles to the south along State Highway 42. The coastal community of Coos Bay is located approximately 18 miles to the north and is connected to Coquille by a branch line of the Southern Pacific Railroad. State Highways 42 and 42S are the major routes between the coast, Coquille, and inland areas. The city is bounded by the unincorporated areas of Coos County. The city was incorporated in 1885. According to the U.S. Census Bureau, the population of Coquille was 3,866 in 2010 (U.S. Department of Commerce, 2010). In 1990, the population was 4,121 (U.S. Department of Commerce, 2010).

The Coquille River forms the southwest boundary of Coquille and extends approximately 99 river miles inland from the coastal community of Bandon to the headwaters of the South Fork Coquille River. It drains a total of 1,058 square miles. Coquille occupies an area of high ground on the east bank of the river, between RM 23 and RM 25. Above the State Highway 42S bridge in Coquille, the Coquille River has a drainage area of 930 square miles. The Coquille River has two major tributaries, the North Fork Coquille River and the South Fork Coquille River that meet about 12 miles upstream of Coquille, near Myrtle Point. The North Fork Coquille River drains approximately 288 square miles, while the South Fork Coquille River drains 591 square miles (Pacific Northwest River Basins Commission, 1968). Tidal influences extend as far upstream as Myrtle Point on the South Fork Coquille River.

Cunningham Creek flows southwest through the City of Coquille to its confluence with the Coquille River at RM 24.0. The Cunningham Creek floodplain divides the developed portion of Coquille into two distinct areas that are joined by State Highway 42 (West Central Boulevard). Total drainage area of the Cunningham Creek basin at its confluence with the Coquille River is 14.2 square miles. Calloway Creek is a tributary of Cunningham Creek and has a drainage area of 2.7 square miles above its confluence with Cunningham Creek. Calloway Creek and Cunningham Creek share the flood plain for about 1,500 feet north of West Central Boulevard.

Total land area within the corporate limits of Coquille is 2.7 square miles. About 60 percent of the city is undeveloped. Approximately one-third of this undeveloped land is in the flood plain (City of Coquille and Coos-Curry Council of Governments, 1978a). Existing development in the City of Coquille has occurred mainly on the terraced area northeast of the Coquille River. Approximately two-thirds of the developed land is currently used for residential purposes. Commercial development, consisting almost entirely of service-oriented business, is concentrated in the central business district. At present, commercial development is expanding eastward along West Central Boulevard. Lands developed for industrial purposes are primarily outside the corporate limits and, in most cases, are near the river. Little development has occurred within the Coquille River and Cunningham Creek flood plains because of a lack of roadway access and the need for extensive fill.

The Coquille River valley is a productive agricultural area that also supports dairy and beef production. With the exception of the river valley, much of the land surrounding Coquille is hilly and wooded.

Annual precipitation at Coquille averages 55.2 inches (City of Coquille and Coos-Curry Council of Governments, 1978a). Rainfall is heaviest in December and January, when a series of frontal storms frequently pass through the area. These storms are formed when cold, polar air from the Aleutian region merges with the warm air of the Central Pacific. On average, only about 4 percent of the total

annual rainfall occurs in June, July, and August. The average annual temperature in Coquille is approximately 50 to 55°F.

Most of Coquille is underlain by Quaternary fluvial terrace deposits. Flood plain areas along Cunningham Creek and the Coquille River are underlain by unconsolidated deposits of sand, silt, clay, and mud (City of Coquille and Coos-Curry Council of Governments, 1978b).

City of Lakeside

The City of Lakeside is located in the northwestern corner of Coos County on Tenmile and North Tenmile Lakes. Lakeside is approximately 15 miles north of Coos Bay, 15 miles south of Reedsport, and 3 miles west of the Pacific Ocean. The city was incorporated in 1974. According to the 2010 U.S. Census, the population of Lakeside was 1,699 in 2010 (U.S. Department of Commerce, 2010). In 1990, the population was 1,437 (U.S. Department of Commerce, 2010).

The southwest corner of North Tenmile Lake, the west end of Tenmile Lake, and 1.2 miles of Tenmile Creek are within the city limits of Lakeside. North Tenmile Lake and Tenmile Lake cover approximately 980 acres and 1,350 acres, respectively (Sidor and Brown, 1967). The drainage area above the North Tenmile Lake outlet near the North Lake Road Bridge is 29.0 square miles. North Tenmile Lake drains into Tenmile Lake through a 0.4-mile-long canal. The drainage area above the Tenmile Lake outlet and near the Hilltop Drive Bridge is 70.6 square miles. Tenmile Creek flows west from Tenmile Lake for 5.1 river miles before entering the Pacific Ocean. Above the Wildwood Drive Bridge and the confluence of Tenmile and Eel Creeks, Tenmile Creek drains an area of 97 square miles.

Several recreation areas border Lakeside: William M. Tugman State Park is to the north, and the Oregon Dunes National Recreation Area and the Siuslaw National Forest are to the west. Both Tenmile Lake and North Tenmile Lake are known for their sports fishing. U.S. Highway 101 and the Port of Coos Bay Railway serve the area, and Lakeside Municipal Airport is located in Lakeside.

The City of Lakeside covers 2.3 square miles. Development is primarily residential with most commercial development located along North 8th and South 8th Streets. Development in the flood plain includes a tourist resort on North Tenmile Lake, several residences along Tenmile Creek, and the city's sewage treatment plant.

Average annual precipitation at Lakeside is approximately 70 inches (Pacific Northwest River Basins Commission, 1969). Approximately 80 percent of the rainfall occurs between October and March. January is the coldest month, with an average temperature of approximately 45°F. August is the warmest month, with an average temperature of approximately 60°F. The predominant soil type found

in Lakeside is composed of loamy sand, sand, and fine sand formed in wind-deposited material. Gravelly loams and silty loams formed from weathered sedimentary rock occur around Tenmile and North Tenmile Lakes (U.S. Department of Agriculture, 1975).

City of Myrtle Point

The City of Myrtle Point is located in the south-central portion of Coos County. The closest incorporated community is the City of Coquille, located 9 miles to the north along State Highway 42. The coastal community of Coos Bay is located approximately 27 miles to the north and is connected to Myrtle Point by a branch line of the Southern Pacific Railroad. The city is bounded by the unincorporated areas of Coos County. The city was incorporated in 1887. According to the U.S. Census Bureau, the population of Myrtle Point was 2,514 in 2010 (U.S. Department of Commerce, 2010). In 1990, the population was 2,712 (U.S. Department of Commerce, 2010).

The South Fork Coquille River flows along the western boundary of Myrtle Point. The City of Myrtle Point occupies an area of high ground on the east bank of the South Fork Coquille River, between RM 37.0 and RM 38.0 (Pacific Northwest River Basins Commission, 1968). The confluence of the South Fork Coquille River and the North Fork Coquille River is at RM 36.4, a short distance downstream of Myrtle Point. State Highway 42 is the major highway between the coast, Myrtle Point, and inland areas. A bridge, roadway, and overflow bridge have been constructed across the South Fork and its floodplain at Spruce Street (RM 37.4) to serve access to a secondary highway to Bandon.

Total land area within the corporate limits of Myrtle Point is 1.6 square miles. The majority of residential and commercial development in the City of Myrtle Point is located on a plateau some 75 feet above the river valley. Scattered residential and industrial development exists within and along the fringes of the floodplain boundary. Commercial development includes a wide spectrum of retail- and service-oriented businesses centered along State Highway 42 and Spruce and Maple Streets. Limited light industrial development exists close to the Southern Pacific Railroad tracks along the western edge of the city.

The Coquille River valley is a productive agricultural area that also supports dairy and beef production. With the exception of the river valley, much of the land surrounding Myrtle Point is hilly and wooded.

Annual precipitation at Myrtle Point averages 56 inches. Rainfall is heaviest in December and January, when a series of frontal storms frequently pass through the area. On average, only about 4 percent of the total annual rainfall is received in June, July, and August. The average daily temperature in Myrtle Point is 62°F. Temperature extremes have been recorded as low as 0°F in winter and over 100°F in summer (City of Myrtle Point and Coos-Curry Council of Governments, 1979).

Sandstone, basalt, poorly sorted gravel, sand, silt, and clay are the predominate rock and soil types found in the area (Beaulieu and Hughes, 1975).

City of North Bend

The City of North Bend is located in western Coos County. The city lies on the northern end of a peninsula that extends north into Coos Bay estuary. North Bend is located approximately 2 miles west of the Pacific Ocean, approximately 25 miles south of Reedsport, and approximately 19 miles north of Coquille. North Bend is bounded by Coos Bay to the north and east, and by the City of Coos Bay to the south and west. The City of North Bend covers 5.1 square miles. The elevation in North Bend varies below sea level in the bay to approximately 160 feet at the western city limits. The city was incorporated in 1903. According to the U.S. Census Bureau, the population of North Bend was 9,695 in 2010 (U.S. Department of Commerce, 2010). In 1990, the population was 9,614 (U.S. Department of Commerce, 2010). The economy of North Bend is based on shipping, retail trade, and tourism.

Pony Creek flows north through the center of North Bend to the Coos Bay estuary, and drains the central portion of the peninsula on which the Cities of Coos Bay and North Bend are located. The creek has a length of 5.6 miles and a drainage area of 6.4 square miles above Virginia Avenue. As previously mentioned, the Coos Bay-North Bend Water Board operates two dams on Pony Creek for municipal water supplies.

The average annual rainfall at North Bend is 61.2 inches (Pacific Northwest River Basins Commission, 1968). The mean temperature in January, the coldest month, is approximately 46.6°F and in July, the warmest month, the mean temperature is approximately 59.0°F. In winter, the prevailing winds are from the southwest, while from May through August, the prevailing winds are from the northwest. Winter winds are usually milder than those during the summer except during an occasional winter storm.

Development in the floodplain is clustered around the Pony Creek and includes a shopping mall on Virginia Avenue and several businesses along Broadway Avenue. Some residential developments are also in the floodplain.

Soils in North Bend are predominantly sands and sandy loams. In areas affected by tidal action along the bay and Pony Creek, the soils range from silty clay loams to sandy loams (U.S. Department of Agriculture, 1975). Most of North Bend is underlain by coarse- to fine-grained sandstone of the Coaledo formation (Beaulieu and Hughes, 1975).

North Bend is served by U.S. Highway 101, the Union Pacific Railroad, and is the site of the Southwest Oregon Regional Airport.

City of Powers

The City of Powers is located in southern Coos County. The closest incorporated community is the City of Myrtle Point, located 21 miles to the north along State Highway 42. The coastal community of Coos Bay is located approximately 42 miles to the north. The city is bounded by the unincorporated areas of Coos County. The city was incorporated in 1945. According to the U.S. Census Bureau, the population of Powers was 689 in 2010 (U.S. Department of Commerce, 2010). Total land area within the corporate limits of Powers is approximately 416 acres.

The South Fork Coquille River flows through the center of Powers. Powers is located 28 miles upstream of the confluence of the South and North Forks of the Coquille River. Although the City of Powers participates in the National Flood Insurance Program, a Flood Insurance Study had not been previously developed.

2.3 Principal Flood Problems

Riverine and Estuarine

Most flooding in Coos County occurs on the Coquille River and its tributaries. The Coquille River at Coquille and the South Fork Coquille River at Myrtle Point typically exceed flood stage at least once each winter. Most other rivers and streams in the county flood less frequently. Riverine flooding usually occurs from November through February when storms moving inland off the Pacific Ocean cause heavy rainfall.

In the lower reaches of the Coquille River, higher than normal tides combining with high runoff can cause extensive flooding. Storm runoff is high because of moderately steep to steep terrain and the characteristic low soil permeability in the upper Coquille River valley. A natural constriction in the Coquille River valley downstream of Riverton and tidal influences control the flood elevations at the City of Coquille. The river valley at Coquille is flooded an average of 3 months each year (City of Coquille and Coos-Curry Council of Governments, 1978a). Natural levees along the riverbanks result in poor drainage from overbank areas as floodwaters recede. The worst flooding occurs when high tides combine with high runoff and onshore winds during major winter storms.

Flood stage at Coquille is 21 feet while the flood stage at Myrtle Point is 33 feet (National Oceanic and Atmospheric Administration [NOAA], 2010). Extreme riverine floods have occurred in February 1890, December 1955, December 1964, and November 1996. Major flooding occurred in the Coquille River valley in December 1951, January 1953, November 1953, January 1971, January 1974, December 1980, December 1981, January 1995, and December 2005.

The largest observed flood in the basin, in February 1890, crested at 23 feet at the State Highway 42S Bridge in Coquille. In both December 1955 and December

1964, the river crested at 21.1 feet at Coquille with an estimated discharge of 120,000 cubic feet per second (cfs) (City of Myrtle Point and Coos-Curry Council of Governments, 1979). The estimated return period for both the 1955 and 1964 floods is 200 years. During floods of this magnitude, an estimated 300,000 acre-feet of water covers the Coquille River flood plain to an average depth of 15 feet. Damages to the Coquille River basin during the December 1964 flood totaled \$3.1 million. About one-half of the damages were agricultural (USACE, 1969). Flooding in the Coquille River basin during the February 1999 flood totaled \$5 million in crop damage (Coos County Emergency Management Department, 2005).

Flood stage in the Myrtle Point area is higher than in the areas downstream because of a natural constriction in the flood plain immediately downstream of the confluence of the North and South Forks of the Coquille River. In December 1964, the Spruce Street Bridge staff gage at Myrtle Point, indicated that the South Fork Coquille River crested at approximately 11 feet above flood stage (bankfull discharge) (City of Myrtle Point, 1964) with an estimated discharge of 100,000 cfs. This flow has a return period greater than 500 years. Stream Gage No. 14325000 on the South Fork Coquille River at Powers recorded a peak flow of 48,900 cfs. This flow has a return period of about 500 years.

Flooding on the North Fork Coquille River is often affected by backwater from the South Fork Coquille River. However, a localized storm system could cause flooding on the North Fork with resulting water-surface elevations that are not significantly affected by South Fork flows. During the December 1964 flood, the North Fork Coquille River near Myrtle Point (Stream Gage No. 14327000) peaked at 38,400 cfs. This flow has a return interval of 55 years (Beaulieu and Hughes, 1975).

Flooding on Cunningham Creek and Calloway Creek is affected by backwater from the Coquille River. During the December 1964 flood, flow from Cunningham and Calloway Creeks was 1 to 1.5 feet deep over West Central Boulevard in the City of Coquille.

Most flooding on Ferry Creek, located within the corporate limits of Bandon, results from high tides and storm surge in the Coquille River estuary backing up flow in the creek. During the 1955 flood, there were 18 inches of water in the Bandon Cheese Cooperative building on the west bank of Ferry Creek between U.S. Highway 101 and 3rd Street E. In December 1981, the creek overflowed near the intersection of 3rd Street E. and Grand Avenue. Water was 18 inches deep in one building southeast of the intersection. The overflow traveled down 3rd Street E. and Fillmore Avenue to the Coquille River estuary.

In December 1964, the flow at the only stream gage in the Coos River basin, No. 14324500, on the West Fork Millicoma River near Allegany, peaked at 5,560 cfs. This flow has a return period of only two years. The peak recorded flow at the

Allegheny gage was 8,100 cfs in November 1960. This flow has a return period of about 8 years.

Until 1980, the flood plain along Pony Creek, located in the cities of North Bend and Coos Bay, had not been developed. As development occurs in this area, the potential for flood damage could increase substantially. In December 1980, water levels almost reached the Woodland Medical Village on Pony Creek east of Broadway Avenue after a period of heavy rainfall. The peak flow recorded at USGS Stream-Gage No. 14324580 below the lower Pony Creek dam for December 1980 was 73 cfs. The peak flow of record at the gage was 181 cfs in December 1981.

Flooding on North Tenmile Lake, Tenmile Lake, and Tenmile Creek in Lakeside usually occurs from October through March, during periods of heavy rainfall. Major floods in Lakeside typically have occurred in December or January. The largest recorded flood on Tenmile Creek came in December 1964 during a period of extensive flooding throughout western Oregon. The peak recorded flow at the USGS gage, Number 14323200, Tenmile Creek near Lakeside, was 3,330 cfs. This flow has a return frequency of approximately 36 years. The maximum elevation of Tenmile Lake during the 1964 flood was 18.8 feet measured at a staff gage maintained by the USGS near the outlet of Tenmile Lake. This elevation has a return frequency of approximately 17 years. East of South 8th Street, floodwaters almost reached North Lake Avenue. The Lakeside Division of Bohemia Lumber Company was flooded. West of North 6th Street floodwaters reached the second step of the Northlake Resort grocery store.

In January 1953, before the Tenmile Creek stream gage and Tenmile Lake staff gage were installed, Tenmile Lake reached an elevation of 19.8 feet. This elevation has a return frequency of approximately 53 years. Other major floods have occurred in 1969, 1977, and 1982 as a result of heavy rainfall. Flooding in December 1982 was close to what would be expected during the 1-percent-annual-chance event.

There is limited development along the shoreline of the Coos Bay estuary except in the incorporated areas of Coos Bay and North Bend, and in the unincorporated communities of Barview, Charleston, and Glasgow. Flooding in Coos Bay is most likely to occur from November through March, when rainfall is greatest and major storms are most likely to occur. In the past, most severe flooding in the City of Coos Bay has been caused by high tides in the Coos Bay estuary occurring during periods of high rainfall and runoff. In December 1964, a high tide of 6.1 feet combined with strong southerly winds to flood Bayshore Drive and several homes along Front Street to a depth of 6 inches. In December 1965, high water flooded the lobby of the Fitzpatrick Building, the basement of the old City Hall, and the intersection of South Broadway and Hall Avenue. In January 1966, December 1967, December 1968, December 1969, and December 1972, high tides of approximately 6 feet caused flooding along South Broadway and U.S.

Highway 101. In January 1973, several businesses along Front Street and North Bayshore were flooded. Development in Eastside, North Bend, Barview, and Glasglow has generally occurred in areas unaffected by flooding. Flooding in Charleston has reached some of the lower-lying commercial areas in the past when storm surge combined with high tides.

Coastal

The Coos County shoreline is the product of a variety of processes that have helped shape the morphology of the beaches and shorelines over the past several thousand years. These include the effects from great earthquakes associated with the Cascadia subduction zone that produced giant tsunamis that inundated significant areas of the coast as well as having lowered the coastal land elevations, thereby initiating a new sequence of shoreline evolution. More recent effects are due to humans, including the construction of the jetties at the mouth of the Coquille and Coos estuaries, and indirectly through the introduction of non-native dune grasses that have stabilized significant stretches of the coast, enhancing the growth of dunes and dramatically changing the character of the coast.

Beach morphodynamics along the Bandon shoreline today is a function of the response of the coast to the most recent Cascadia subduction zone earthquake (1700), with the coast now being emergent due to tectonic uplift, and human effects associated with the construction of the Coquille jetties. The primary sediment sources for the Bandon beaches are fine sands that are carried down the Coquille River and gravels (sand to pebbles) supplied by the erosion of Blacklock Point, located to the north of Cape Blanco in northern Curry County. Sand has also been lost from this stretch of shore due to Aeolian processes that have carried the finer sand inland where it has accumulated and formed dunes, a loss that is particularly significant south of Bradley Lake near Bandon where a field of dunes has formed. Sand dunes have also accumulated at the back of the beach along the length of the New River Spit, a ridge of foredunes that separates the ocean beach from the channel of the river.

Erosion of Blacklock Point north of Cape Arago is actively contributing coarser sediments to the beach system. Analyses of changes in the position of the bluff-top using historical aerial photos indicate that the bluffs along Blacklock Point are eroding at rates of ~0.09 m per year (Komar et al., 2001). These coarser sediments move along the shore in a predominantly northward direction, where they have mixed with the finer sands contributed by the Coquille River, producing a longshore variation in beach sediment grain-sizes along this shore. Pebbles dominate the beach sediments along the southern portion of the New River Spit, while the sand content decreases away from the Coquille River southward toward the southern end of the New River Spit; this southward decrease of sand in the beach reflects both the increasing distance away from the Coquille River, its source, as well as the loss of the sand inland to form dunes. The general patterns of sediment movement identified by Komar et al. (2001) does not reflect any

prevailing net longshore sediment transport in any one particular direction, since within the "pocket beach" littoral cells of the Oregon coast the net transport is effectively zero (Komar, 1997). Nevertheless, sand and gravel derived from the mixing of these two sediment sources has enabled the New River Spit to prograde as the mouth of the river has slowly migrated to the north in recent decades, and with the elevations of the foredunes having increased with time, aided by the introduction of European dune grass. Over approximately 1.5 km near the tip of the Spit nearest the present day position of the river's mouth, the beach is characterized by intermittent clumps of low dunes, separated by zones where winter storm waves actively wash over the Spit. With increasing distance southward, the dunes become progressively higher and more effective at preventing overwash during storms.

In the north along the Bandon bluffs, the beach and shoreline is considered to be stable and appears geomorphically to be unchanged from photographs taken in the early 1900s. The bluffs are covered by dense vegetation, mainly impenetrable brush, such as salal and gorse, and have not been subject to wave-induced toe erosion during the 140 years of settlement of Bandon (Komar et al., 1991).

The Bandon jetties were constructed in the late 1800s at the mouth of the Coquille River, and this locally resulted in significant changes in the shorelines. Construction of the jetties was initiated in December 1883 and the response of the shoreline is documented in Figure 1, derived from periodic surveys undertaken by USACE (Komar et al., 1976). As can be seen in Figure 1, the shoreline response in 1884 indicates rapid accretion that took place south of the jetty. This occurred as a sand spit that grew northward where it became attached to the south jetty. East of the spit, the northward advance of the spit effectively trapped a low area within the accreted land, forming a lagoon shown in the 1891 survey that still exists today (Figure 1). Aside from the build-up of sand south of the south Coquille jetty, sand also began to aggrade in the north adjacent to the north jetty. Based on this evidence and from similar studies undertaken elsewhere on the coast, this type of response demonstrates the existence of a seasonally reversing longshore sediment transport, northward during the winter and to the south in the summer, but with the long-term net transport being effectively zero (Komar et al., 1976).

The shoreline adjacent to the Coquille jetties have been broadly stable for some decades, although the dunes and low lying land characteristic of this area remain susceptible to both dune erosion and flooding from extreme ocean waves coupled with high tides (Figures 2 and 3). Figure 4 is an historical 1939 aerial photo of the 'triangle' adjacent to the jetties. Included in the figure is a dashed line that demarcates blowouts in the foredune that is likely to have been caused by a recent major storm(s), possible an event in January 1939 (Figure 4). Evidence for the blowouts includes significant amounts of logs and flotsam that have been carried well inland from the coast. The January 1939 storm resulted in extensive erosion elsewhere on the Oregon coast and is thought to be one of the most significant

events to affect the coast in historical times (Dr. Paul Komar, Emeritus Professor, Oregon State University, December 2009). According to Dr. Komar, the 1939 aerial photographs were flown by USACE to document the effects of the storm, and is the first coastwide suite of aerial photographs of the Oregon coast. A comparison of the shoreline mapped in 1939 with the 2009 shoreline indicates little difference in the general position, reaffirming the fact that there has been little net change in the position of the shoreline over the past 70 years.

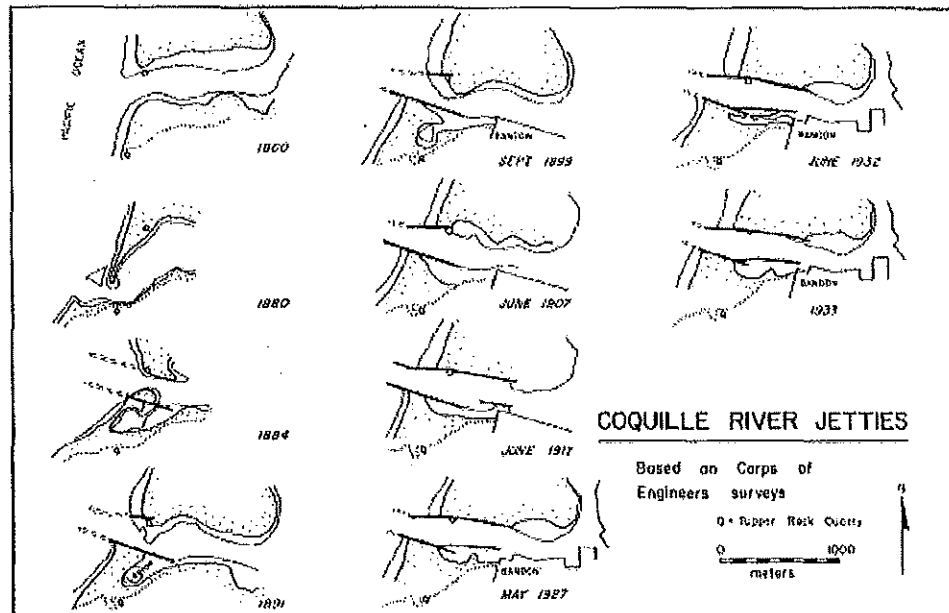


Figure 1 - USACE Coquille River Survey Lines at Bandon
Survey line drawings prepared by USACE prior to and during construction of the Coquille jetties adjacent to Bandon (Komar et al., 1991).



Figure 2 - December 22, 2000 Coastal Flooding Debris at Bandon
High wave runup and overtopping during a major storm (December 22, 2000) near the south Coquille jetty at Bandon carried logs onto the main parking lot, adjacent to a public restroom (Photo courtesy of Dr. J. Marra, pers. comm., May 2010).



Figure 3 - December 22, 2000 Wave Runup at Bandon
Wave overtopping during a major storm (22 December, 2000) surrounds the restroom and covers the parking lot adjacent to the south Coquille jetty at Bandon (Photos courtesy of Dr. J. Marra, pers. comm., May 2010).



Figure 4 - 1939 Aerial Photo of Wave Blowouts at Bandon

1939 aerial photograph of the Bandon 'triangle' adjacent to the Coquille jetties showing evidence of blowouts in the developing foredune that likely occurred during a major storm in January 1939.

As part of the revised FIS undertaken in Bandon, CH2MHILL (1996) compiled a history of past flood events. These are summarized in Table 5, while Figures 2 and 3 highlight the effects of several recent storms along the Bandon 'triangle'. For example, one local resident described one storm between 1945 and 1977, which generated ocean flooding near the Bandon triangle that reached an estimated 5.6 m (NAVD88) elevation at the shore.

Table 5. History of Coastal Flooding Events at South Jetty Area of Bandon, Oregon (CH2MHILL, 1998)

<u>Date</u>	<u>Comments</u>	(Note 1) <u>Observed</u> <u>Tide Level</u> (ft. NGVD)	(Note 2) <u>Estimated</u> <u>Return-</u> <u>Period of</u> <u>Tide</u> <u>Level</u> (yrs)
2/9/60	Beach erosion at foot of South Jetty with drift logs 1-2 ft. dia. and stumps (est. from photos) washed est. 200' into parking lot.	NHT	---
11/20/60	62 mph southwest winds at Bandon with high tides and surf. No reported flooding, but flood damage at Newport and Tillamook.	NHT	---
10/12/62	Columbus Day wind storm "hurricane-like" winds caused much wind damage but no reported flooding.	5.45	2
1/18/64	Stormy SW wind. Seafoam 2-3 ft. deep drifted into parking lot at S. Jetty.	NHT	---
12/1/67 - 12/2/67	Very high tides and "ferocious" winds wash logs into S. Jetty parking lot and jetty access road. 10.1 ft tide (no datum reported) associated with flooding.	NHT	---
1/17/73	S. Jetty Road and top of S. Jetty littered with stumps 2-3 ft. dia. and 1 ft. (est.) logs. Sand deposited on S. Jetty Road.	6.05	< 1
11/9/75	Worst windstorm since 10/12/62. 145 mph gusts at C. Blanco. 100 mph W-NW gusts Bandon airport. No flooding mentioned.	MD	---
10/28/77	Highest waves in years. "Water surged 9.5 feet (?) instead of normal 1 foot in Bandon Harbor." Drift logs 1-2 ft. dia. washed into S. Jetty parking lot approximately 200 feet.	4.63	< 1
12/13/77	Foam and sheets of water surge over foot of S. Jetty.	NHT	---
2/7/78	3 ft. dia. drift logs and sand on S. Jetty Road from high tide and breaking waves	6.25	18
11/22/79	2-3 ft. diameter stumps and sand washed onto S. Jetty Road. High waves reported.	NHT	---
11/13/81 - 11/14/81	Est. 100 mph gusts at Bandon. Much wind damage. No reported flooding.	5.91	7
1/28/83 - 1/29/83 (dates approx.)	Waves wash across S. Jetty Road opposite Bandon lighthouse into freshwater pond. Coos County in process of placing rock along road shoulder to prevent further damage.	6.90	141
11/22/88	High tides and waves scattered foam over S. Jetty parking lot.	5.24	1.1
1/29/90	62-98 mph wind gusts. Driftwood tossed into S. Jetty parking lot. "[Significant] waves measured at 26 feet " at wave buoy 5 miles off Bandon's Bar.	NHT	---

Table 5. History of Coastal Flooding Events at South Jetty Area of Bandon, Oregon (CH2MHILL, 1998) (continued)

<u>Date</u>	<u>Comments</u>	(Note 1)	(Note 2)
		<u>Observed</u> <u>Tide Level</u> <u>(ft.</u> <u>NGVD)</u>	<u>Estimated</u> <u>Return-</u> <u>Period of</u> <u>Tide</u> <u>Level</u> <u>(yrs)</u>
1/30/92	- "Huge piles" of driftwood washed up on beach at the S. Jetty.	NHT	---
1/31/92			
12/10/92	- "Heavy surge" cuts through the bank behind Bandon Boatworks Restaurant with new channel cut to Redman Pond. Small driftwood logs (4" dia.) deposited next to 2 houses immediately south of parking lot.	5.28	1.2
12/11/92			
12/9/93	- Ocean waves and river erode backshore shoreline vicinity of Redman Pond	N/A	---
12/10/93			

Notes:

1. Tide elevations based on observed tides at Crescent City, which is the primary reference station for tides at Bandon. Elevations shown are for recorded monthly maximums. NHT = not highest monthly tide observed at Crescent City. MD = Missing data for month. N/A = Not available as of late 1994 from NOAA.

Beach morphodynamics along Bastendorff Beach are similar to those observed along the Bandon shore. Prior to construction of the Coos Bay jetties, the entrance to Coos Bay reflected a rocky stretch of coast along its south bank, while an extensive barrier spit was located to the north that protected the Coos Bay estuary from the direct effects of ocean waves. Jetty construction was initiated first on the north spit and by the beginning of the 20th century the shoreline had prograded seaward by about 1 km (~3000 ft), while the shoreline had straightened significantly as sand piled up against the north jetty. With the construction of the south jetty early in the 20th century, a similar response was observed in the south (Figure 5). Sand accreted against the jetty and against the rocky shore and the shoreline began to prograde seaward. As can be seen in Figure 5, the shoreline rapidly prograded seaward up until the 1960s. Since 1967, however, the shoreline has essentially remained much the same as it is today suggesting that the beach has reached a quasi-equilibrium state with the sediment transport processes. With the shoreline progradation having all but ceased by 1967, the back shore portion of the beach rapidly became stabilized due to the introduction of non-native beach grasses, particularly European Beach grass, and from growth of shore pines immediately landward of the primary dune (Figures 6 and 7). This type of response is characteristic of the entire length of Bastendorff Beach. Further south at Lighthouse Beach, the shoreline in the 1920's is essentially unchanged from its position in 1967 and again in 2008. This indicates that the effects of jetty construction did not extend south of Bastendorff Beach and furthermore that the shoreline has been broadly stable over the past 80-90 years.



Figure 5 - Historical Shorelines at Bastendorff Beach Overlaid on 1939 Aerial Photo
Historical shoreline changes at Bastendorff Beach adjacent to the Coos Bay jetties. The photo is of the beach in 1939.



Figure 6 - Historical Shorelines of Bastendorff Beach Overlaid on 1967 Aerial Photo
Historical shoreline changes at Bastendorff Beach adjacent to the Coos Bay jetties. The photo is of the beach in 1967 and shows the degree to which the backshore has become stabilized due to introduction of European beach grass and from growth of shore pines.

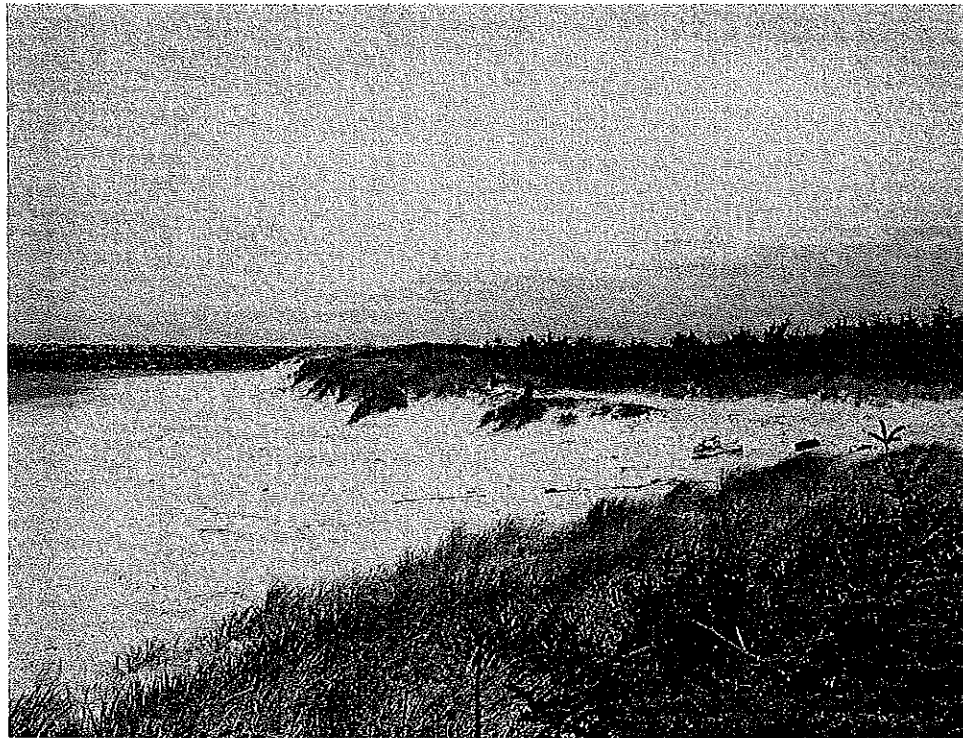


Figure 7 - April 9, 2010 Photo of Bastendorff Beach Foredune
Photo of Bastendorff Beach on April 9th 2010 showing the well vegetated foredune and backshore. Photo taken by Jonathan Allan, DOGAMI.

2.4 Flood Protection Measures

Several structural measures providing flood protection have been taken in Coos County. The USACE stabilized the Coos Bay and Coquille River entrances by building jetties on either side of the entrance channels. The Coos Bay jetties were completed in 1929. The Coquille River jetties were completed in 1908. The USACE has also maintained navigation channels in Coos Bay, in the Coquille River estuary, and on the Coos and Millicoma Rivers. The Coos Bay navigation channel is maintained at 45 feet across the outer bar, at 35 feet from Coos Head to the junction of Coalbank and Isthmus Sloughs, and at 22 feet on Isthmus Slough between Coalbank Slough and the community of Millington. The Coquille River navigation channel is maintained at 13 feet between RM 0 and RM 1.3. The Coos River and Millicoma River navigation channels are maintained at 5 feet to RM 8.3 on the Millicoma and 8.8 on the South Fork Coos River. From RM 8.8 to RM 9.2, the South Fork Coos River navigation channel is maintained at 3 feet. All depths in the navigation channels are measured below mean lower low water.

Low-lying areas of Palouse and Larson Creeks, Kentuck Slough, and Willanch Slough have been diked with tide gates at their outlets. The tide gates prevent inundation of the low-lying areas by high tides in the bay. Most of these dikes and tide gates have been built by local drainage districts. Some areas along the South

Slough, Isthmus Slough, Coalbank Slough, Catching Slough, and the Coos River have also been diked. Most of these dikes are not high enough to completely prevent flooding. In the Coos Bay estuary, 2,000 acres of tidelands have been diked for agricultural use (Beaulieu and Hughes, 1975).

Since 1920, 1,500 acres of tidelands have been filled (Beaulieu and Hughes, 1975). Many of these fills are not high enough to completely prevent flooding. Major fills have occurred at the mouth of Pony Slough, at the mouths of Coalbank and Isthmus Sloughs, in the area north of the developed part of eastern Coos Bay (formally known as Eastside), and at Graveyard Point along the Coos River. The first three fill areas will be flooded to some extent during a 1-percent-annual-chance event.

Since the downtown area has flooded so frequently in the past, the City of Coos Bay has taken several structural measures to reduce flood damage. A dike was built along Isthmus Slough from Commercial Avenue to Coalbank Slough to protect the downtown area during high tides. The dike is frequently checked for damage and settling. The dike provides limited protection because the lowest dike elevation is 7.6 feet NGVD (11.2 feet NAVD) and in places the dike would be overtopped during a 10-, 2-, or 1-percent-annual-chance tide in the bay. During a 0.2-percent-annual-chance tide, the entire length of dike would be overtopped.

To minimize ponding behind the dike when high local runoff occurs during a high tide, the City of Coos Bay has built two pumping stations. One pumping station is located near the intersection of Front Street and Johnson Street and protects most of the area bounded by Golden Avenue to the north, 4th Street to the west, Kruse Avenue to the south, and the dike to the east. The other pumping station is located at the intersection of Commercial Avenue and 3rd Street and protects most of the area bounded by Commercial Avenue on the north, 4th Street to the west, Curtis Avenue to the south, and North Broadway to the east. These pumps can only provide complete protection when there is little or no overtopping of the dike.

Several storm sewer systems in the City of Coos Bay, including the Mill Slough Box that drains Blossom Creek, have tide gates at their outlets to prevent high tides from backing up into the systems. During periods of high tide combined with high runoff, ponding will occur behind the tide gates.

Some flood protection is provided on Pony Creek because flow downstream of Ocean Boulevard is regulated by two reservoirs operated by the Coos Bay-North Bend Water Board for municipal water supplies. The reservoirs are not operated for flood control, but some flood control is provided because runoff is stored during the rainy season for use during the dry season. Typically, the upper reservoir reaches its lowest level in late fall and refills during the rainy season. Once the water level reaches an elevation of 82 feet (85.6 feet NAVD88), the pool level will be maintained until mid-March, and no more runoff will be stored. During the winter, the lower reservoir is operated with free flow over the spillway

because of dam safety considerations. Unless the reservoir has been drawn down below the spillway lip during the dry season, no storage volume will be available to store runoff.

The South Fork Coquille River stream gage at Powers, the staff gage at Coquille, and the staff gage at Myrtle Point are three of 15 key stations in Subregion 10 of the Flood Forecasting System operated by the National Weather Service (Pacific Northwest River Basins Commission, 1971). Subregion 10 covers coastal systems in Oregon and part of Washington. Flood warnings are issued when forecasts indicate that near bankfull stages are expected. When flood stage is reached, bulletins are issued at 12-hour intervals until the streams recede and the danger has passed.

In the City of Bandon, several property owners along the Pacific Ocean have placed berms and riprap around their homes to protect them from wave action.

The Portland Weather Forecast Office issues storm tide warnings indicating expected tidal flooding along low-lying coastal areas. Warnings include expected tidal stages above mean lower low water or departure from normal high tide, degree of flooding, possible wave or surf battering, and significant beach erosion.

The U.S. Coast and Geodetic Survey prepared warnings and advisories of tsunamis. Local officials have the responsibility for advising the local population.

The Cities of Bandon, Coos Bay, Coquille, Lakeside, Myrtle Point, North Bend, Powers, and Coos County participate in the National Flood Insurance Program and each have a floodplain ordinance approved by FEMA for controlling development in flood hazard areas.

Levees exist in the study area that provide the county with some degree of protection against flooding. However, it has been ascertained that some of these levees may not protect the community from rare events such as the 1-percent-annual-chance flood. The criteria used to evaluate protection against the 1-percent-annual-chance flood are 1) adequate design, including freeboard, 2) structural stability, and 3) proper operation and maintenance. Levees that do not protect against the 1-percent-annual-chance flood are not considered in the hydraulic analysis of the 1-percent-annual-chance floodplain.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 1-percent-annual-chance (100-year) flood in any 50-year period is approximately 40 percent (4 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for each flooding source studied by detailed methods affecting the community.

Hydrology for Detailed Riverine Studies

Regionalized flood prediction equations were developed for the 10-, 2-, 1-, and 0.2-percent-annual-chance floods based on statistical analysis of the data recorded at USGS stream gages listed in Table 6. The statistical analyses of these gages followed the standard log-Pearson Type III method as outlined by the U.S. Water Resources Council (1977).

Table 6. USGS Stream Gages Used for Statistical Analysis

<u>Gage Number</u>	<u>Location</u>	<u>Years of Record²</u>
14299000 ¹	South Fork Necanicum River near Seaside	16
14301500	Wilson River near Tillamook	46
14302500 ¹	Trask River near Tillamook	37
14303600	Nestucca River near Beaver	11
14305500	Siletz River at Siletz	60
14306100	North Fork Alsea River at Alsea	18
14306400	Five Rivers near Fisher	14
14306500	Alsea River near Tidewater	37
14324500	West Fork Millicoma River near Allegany	25

Table 6. USGS Stream Gages Used for Statistical Analysis (continued)

<u>Gage Number</u>	<u>Location</u>	<u>Years of Record²</u>
143246001	South Fork Coquille River above Panther Creek, near Illahe	14
14324700 ¹	South Fork Coquille River near Illahe	18
14324900 ¹	South Fork Coquille River near Powers	14
14325000	South Fork Coquille River at Powers	60
14326500 ¹	Middle Fork Coquille River near Myrtle Point	17
14326800 ¹	North Fork Coquille River near Fairview	16
14327000 ¹	North Fork Coquille River near Myrtle Point	22

¹ Discontinued gages

² As of 1982

Flow records for 23 other gages were initially considered but were not used in this study for several reasons. These reasons included significant regulation by lakes, stream flow records from abnormally dry periods, and gauging of watersheds less than 10 square miles where local hydrologic conditions are not representative of regional conditions.

Flood flows for the Coquille River, South Fork Coquille River, Millicoma River, East Fork Millicoma River, and West Fork Millicoma River were calculated using the regional flow equation:

$$Q=KA^n$$

"Q" and "A" are the discharge in cubic feet per second (cfs) and drainage area in square miles at the study site, respectively. The constant "K" and the exponent "n" were determined for each flood using logarithmic plots of drainage area versus frequency-discharge relationship of the stream gages given in Table 4. The values determined for "K" and "n" are 550 and 0.71 for the 10-percent-annual-chance flood, 661 and 0.73 for the 2-percent-annual-chance flood, 708 and 0.74 for the 1-percent-annual-chance flood, and 830 and 0.74 for the 0.2-percent-annual-chance flood. These equations are only valid when the drainage area at the site is greater than 10 square miles.

Drainage areas at points in the study area were measured on USGS topographic maps or taken from the River Mile Index for Coastal Tributaries (Pacific Northwest River Basins Commission, 1975).

Flood flows on Calloway, Cunningham and Ferry Creeks were determined using the USGS regional method presented in Magnitude and Frequency of Floods in Western Oregon (Harris et al., 1979). Ferry Creek has been gaged near the fish hatchery by the Oregon Department of Water Resources since 1977 (No. 14327120) (Oregon Department of Water Resources, 1978). This gage has a drainage area of 4.2 square miles. At the time of the original study (1983), the gage record was too short to produce accurate estimates of low-frequency flood flows. Flows from a log-Pearson Type III frequency analysis done by the USGS (1980) on Gieger Creek flows, when transferred to the mouth of Ferry Creek were only slightly lower than those determined using regional equations.

The USGS operated the Tenmile Creek gage, Number 14323200 from August 1957 to September 1976. Because of a shifting rating curve and regulation by the two lakes, the USGS discontinued operation of the gage.

Storage volume analyses were carried out to determine the 10-, 2-, 1-, and 0.2-percent-annual-chance outflows from Tenmile Lake and the resulting elevation of Tenmile and North Tenmile Lakes.

The 10-, 2-, 1-, and 0.2-percent-annual-chance, 24-hour precipitation values (Miller et al., 1973) were used to generate inflow hydrographs to the lakes. Most major storms in this area have durations longer than 24 hours. The 24-hour precipitation amounts were used because the analyses showed peak outflow from Tenmile Lake was not very sensitive to duration and because precipitation records for longer durations were not available. Hourly precipitation amounts during a 24-hour storm were calculated using the U.S. Soil Conservation Service Type 1A precipitation distribution (U.S. Department of Agriculture, 1970). Precipitation excess was calculated assuming near-saturation conditions with a constant infiltration rate of 0.02 of an inch per hour. Snyder's unit hydrograph method was used to generate inflow hydrographs from precipitation excess.

Base flow at the Tenmile Lake outlet was set equal to 680 cfs. The respective base flows for North Tenmile and Tenmile Lake inflow hydrographs were estimated using ratios of the tributary drainage areas to the total drainage area.

The infiltration rate, base flow, and lag times were assumed to be equal for the 10-, 2-, 1-, and 0.2-percent-annual-chance events. The infiltration rate, base flow, and lag times were determined by calibrating a hydrograph, generated from precipitation at Reedsport and Allegany recorded during the December 1964 flood (USACE, 1966; U.S. Department of Commerce, 1965), to the recorded flood hydrograph at the Tenmile Creek gage (City of Myrtle Point, 1964). The 24-hour precipitation was taken as the only variable for the 10-, 2-, 1-, and 0.2-percent-annual-chance events.

The USACE HEC-1 flood hydrograph computer program (USACE, 1973) was used to generate the inflow hydrographs from precipitation and to route the

hydrographs through the lakes. Routing through the lakes required storage-capacity curves that were developed from USGS topographic maps (Harris et al., 1979). The outflow rating curve for Tenmile Lake was developed from a backwater analysis on Tenmile Creek. The outflow rating curve for North Tenmile Lake was approximated by a normal depth calculation for a canal cross section at the North Lake Avenue Bridge.

The peak lake elevation for Tenmile Lake was determined from its outflow rating curve using the peak 10-, 2-, 1-, and 0.2-percent-annual-chance outflows. A backwater analysis on the short canal between the two lakes showed that North Tenmile Lake would peak at the same elevation as Tenmile Lake regardless of the flow through the canal connecting the lakes. These analyses reflect stillwater levels (SWLs) only. A summary of the elevation-frequency relationship for the two lakes is shown in Table 8, "Summary of Elevations".

Flows in Pony Creek downstream of Ocean Boulevard are regulated by two Coos Bay – North Bend Water Board water-supply reservoirs. For this reason, the USACE HEC-1 computer program was used to generate inflow hydrographs through the reservoirs downstream to the former location of the tide gates at Crowell Lane.

Inflow hydrographs were generated from the 10-, 2-, 1-, and 0.2-percent-annual-chance, 24-hour precipitation (Miller et al., 1973) for each drainage subarea along Pony Creek. The precipitation was distributed over a 24-hour period using the U.S. Soil Conservation Service's Type 1A precipitation distribution (U.S. Department of Agriculture, 1970). Excess precipitation was calculated using an infiltration rate of 0.43 inches per hour estimated from local soil data (U.S. Department of Agriculture, 1975).

Peak flows from the upper reservoir inflow hydrographs were compared to peak flows transferred from the USGS Geiger Creek Gage No. 14327100 near Bandon using the relationship

$$Q=Q_g(A/A_g)^{0.92}$$

Where:

- Q is the flow in cubic feet per second at the study site.
- A is the drainage area in square miles at the study site.
- Q_g is the flow in cubic feet per second at the gage.
- A_g is the drainage area in square miles at the gage.

The USGS performed a log-Pearson Type III frequency analysis on the Geiger Creek flows following the U.S. Water Resources Council Guidelines (1977). The hydrograph lag time was adjusted until the two frequency-discharge relationships were in close agreement.

The upper reservoir inflow hydrographs were then routed through the upper reservoir assuming the water level was initially at 82 feet (85.6 feet NAVD88). The upper reservoir outflow rating curve was developed from spillway geometry with stop logs placed to elevation 82 feet (85.6 feet NAVD88). The storage-capacity curve was taken from a CH2M HILL Pony Creek Water Supply report (1978). The outflow hydrographs were combined with local inflow between the two reservoirs and routed through the lower reservoir assuming the water level was initially at the spillway lip elevation of 28.4 feet (32 feet NAVD88). The lower reservoir outflow rating curve was developed from the spillway geometry with no stop logs in place. The storage capacity curve was taken from the Pony Creek Water Supply report (CH2M HILL, 1978).

Downstream of the lower reservoir, local inflow hydrographs were generated from precipitation. Urbanization was accounted for in each drainage subarea. The percent of impervious area and the extent of storm sewers in each subarea were used to determine hydrograph coefficients for the Denver Urban Storm Drainage Criteria Manual (Wright-McLaughlin Engineers, 1969). The extent of storm sewered areas was determined using a storm sewer study for the City of North Bend (Pacific Northwest River Basins Commission, 1968) and a storm sewer master plan for the City of Coos Bay (Erichsen et al., 1975). The percent of impervious area was estimated using aerial photographs at a scale of 1:12,000 (CH2M HILL, 1980). Local inflow hydrographs were combined with the lower reservoir outflow hydrographs and routed to Crowell Lane using storage-outflow relationships developed from preliminary step-backwater calculations. Drainage areas for Pony Creek were measured on USGS 7.5-Minute topographic maps (USGS, various years).

Hydrology for Approximate Riverine Studies (Revised)

Stream flow data for revised approximate studies of riverine flooding in Coos County were provided by the USGS web tool StreamStats for Oregon (Cooper, 2005). Discharges were acquired for the 1-percent-annual-chance peak flow at each stream confluence and downstream terminus (i.e. the Coquille River's confluence with the Pacific Ocean).

There were several exceptions where StreamStats for Oregon was not used to acquire stream flow data. Due to the unsuitability of using StreamStats for reaches downstream of large water bodies, stream flow data for the approximate study sections of Tenmile Creek was acquired from the hydrologic model prepared by CH2M HILL for the detailed study of Tenmile Creek. Coastal lakes in the Oregon Dunes National Recreation Area (Lyons Reservoir, Snag Lake, Sandpoint Lake, Spirit Lake, Horsfall Lake) are not hydrologically connected to any riverine flooding source and were therefore re-delineated to a representative 1-percent-annual-chance flooding elevation based on the previous mapping. The Empire Lake reservoirs and Tarheel Lake reservoir were mapped to a 1-percent-annual-chance flooding elevation equal to the elevation of dam-overtopping.

Hydrology for Detailed Estuarine Studies

The methodology developed by CH2M HILL for study of Pacific Northwest storms was used to study the coastal flooding influence on estuaries in Coos County. This method involves statistical analysis of the various components of ocean flooding caused by storms and a combined probability analysis to determine the effect of these components on flood levels. It is applicable to detailed study areas in the cities of Bandon, Coos Bay, North Bend, and Lakeside where static base flood elevations have been determined for Coquille River, Ferry Creek, Coos Bay, South Slough, Pony Slough, North Slough, Haynes Inlet, Coalbank Slough, Blossom Creek, Isthmus Slough, Catching Slough, Coos River, North Tenmile Lake, and Tenmile Lake.

High astronomical tides are a major component of ocean flooding. Predicted astronomical tides were calculated on an hourly basis for the study areas based on the National Oceanic and Atmospheric Administration (NOAA) Tide Tables (1980). The hourly predicted tides were used to compute the astronomical tide height histogram (Brocherdt and Borgman, 1970).

Storm surge, or the rise in water from wind stress and low atmospheric pressure, is also a common component of flooding. Significant storm surge-producing events were selected from 3-hour surface weather maps for the period 1942 to 1980. The storm surge heights were computed for these events and grouped into three winds direction classes. Storm-surge frequency distributions were computed from a population of the highest storm surges for each class.

Waves are another component of ocean flooding. A wave forecasting computer program was used to compute wind-generated wave height (Oregon State University, 1976). The program uses wind speed, direction, and fetch data from the surface weather maps to compute significant wave height and period at 6-hour intervals. Frequency curves were plotted for the three wind direction classes of both sea waves and swell wave heights.

The peak SWL at the entrance to Coos Bay and inflow to the bay from major streams are the main causes of flooding in the Coos Bay estuary. A series of normal winter tide cycles with the 10-, 2-, 1-, and 0.2-percent-annual-chance peak SWLs superimposed on one cycle were used in the detailed estuary analysis. Subsequently, these tide cycles will be referred to as the 10-, 2-, 1-, and 0.2-percent-annual-chance tide cycles.

SWL is a function of two components. The first component, astronomical tide, is caused by the gravitational forces exerted on the earth by the sun and the moon. The second component, storm surge, is the rise in water level due to wind stress and low atmospheric pressure.

A peak SWL-frequency curve was developed for the Coos Bay entrance using 47 years of observed tide data from an open-coast tide gage at Crescent City, California, and 12 years of observed tide data from a tide gage located in Coos Bay at Charleston. The Crescent City gage is located 100 statute miles south of the Charleston gage but both gages were found to respond similarly to major storms monitored at both gages. A frequency curve developed for the Crescent City gage was transferred to the Coos Bay entrance by adjusting for datum and location differences and compared with an elevation-frequency curve developed for the Charleston gage. The Charleston curve was then adjusted slightly to show the effects of a longer period of record the Crescent City frequency curve. SWLs at the Coos Bay entrance were then taken from the revised Charleston frequency curve.

The peak SWLs were superimposed on one cycle of a series of normal winter tide cycles predicted using the West Coast of North and South America Tide Tables (1980). It was assumed that the surge component would cause an increase in water level above the normal predicated tide level for a period of 12 hours, and that the largest increase in water level would occur half-way through that period.

Peak inflows to the Coos Bay estuary from the South Slough, North Slough, Palouse and Larson Creeks, Isthmus Slough, Catching Slough, and the Coos River were determined using the regional flow equation given previously. Triangular hydrographs were then developed using the peak inflows and assumed times to peak. A time of 20 hours was used for the Coos River basin. A time of 4 hours was used for the South Slough, Isthmus Slough, Catching Slough, Larson and Palouse Creeks, and the North Slough. The peak inflows are summarized in Table 6.

Estuary elevation-frequency curves were developed assuming a combination of riverine and tidal influences. Inflow hydrographs for the major streams entering Coos Bay were developed for the detailed estuary analysis. The peak hydrograph flows were calculated using regional flood prediction equations. These equations were developed for the 10-, 2-, 1-, and 0.2-percent-annual-chance flows based on statistical analysis of the data recorded at the USGS stream gages listed in Table 6. The statistical analyses at these gages followed the standard log-Pearson Type III method outlined by the U.S. Water Resources Council (1977).

Drainage areas for each stream used in the estuary analysis were measured on a South Coast Drainage Basin Map (Oregon State Water Resources Board, 1971) or taken from the River Mile Index for Coastal Tributaries (Pacific Northwest River Basins Commission, 1968).

Hydrology for Detailed Coastal Studies (Revised)

Measurements of tides on the Oregon coast are available from various tide gages operated by the National Ocean Service (NOS). Hourly tidal records are available

from the following long-term (30+ years) coastal sites: the Columbia River (Astoria, #9439040), South Beach (Newport, #9435380), Port Orford (#9431647), and at Charleston (#9432780) located midway along the Coos County shoreline. Long-term tidal records are also available from the Crescent City tide gage (#9419750), located in northern California, and have been used in previous FIS carried out in Coos County (e.g. CH2MHILL, 1995). For the purposes of this study, we have based our SWL and wave runup calculations on the Charleston tide gage due to its central proximity along the Coos County coast and importantly because of its relatively long record (38 years). All hourly tide data were purchased from the NOS and were processed using various scripts developed in Matlab. In addition to the measured tides, hourly tide predictions were calculated for all years using the NOS tide prediction program, NTP4.

Tides along the Oregon coast are classified as moderate, with a maximum range of up to 14 ft and an average range of about 6 ft (Komar, 1997). There are two highs and two lows each day, with successive highs (or lows) usually having markedly different levels (Figure 8). Tidal elevations are given in reference to the mean of the lower low water levels (MLLW), and can be easily adjusted to the NAVD88 vertical datum. As a result, most tidal elevations are positive numbers with only the most extreme lower lows having negative values. Figure 8 shows the tidal elevation statistics derived from the Charleston tide gage (#9432780), with a mean range of 5.69 ft and a diurnal range of 7.62 ft. The highest tide measured at Charleston reached 11.18 ft, recorded in January 1983 during the peak of the strong 1982-83 El Niño.

The actual level of the measured tide can be considerably higher than the predicted level provided in standard Tide Tables, and is a function of a variety of atmospheric and oceanographic forces, which ultimately combine to raise the mean elevation of the sea. These latter processes also vary over a wide range of timescales, and may have quite different effects on the coastal environment. For example, strong onshore winds coupled with the extreme low atmospheric pressures associated with a major storm can cause the water surface to be locally raised along the shore as a storm surge, and have been found in tide-gage measurements to be as much as 4.9 ft along the Pacific Northwest coast (Allan and Komar, 2002). However, during the summer months these processes can be essentially ignored due to the absence of major storms systems.

On the Oregon coast, tides tend to be enhanced during the winter months due to warmer water temperatures and the presence of northward flowing ocean currents that raise water levels along the shore, persisting throughout the winter rather than lasting for only a couple of days as is the case for a storm surge. This effect can be seen in the monthly averaged water levels derived from the Charleston tide gage, but where the averaging process has removed the water-level variations of the tides, yielding a mean water level for the entire month. Based on 38 years of data, the results show that on average monthly-mean water levels during the winter are nearly 0.7 ft higher than in the summer. Water levels are most extreme

during El Niño events, due to an intensification of the processes, largely enhanced ocean sea surface temperatures offshore from the Oregon coast. This occurred particularly during the unusually strong 1982-83 and 1997-98 El Niños. Water levels during those climate events were approximately 0.8 ft higher than the seasonal peak, and as much as 1.6 ft higher than during the preceding summer, enabling wave swash processes to reach much higher elevations on the beach during the winter months, with storm surges potentially raising the water levels still further.

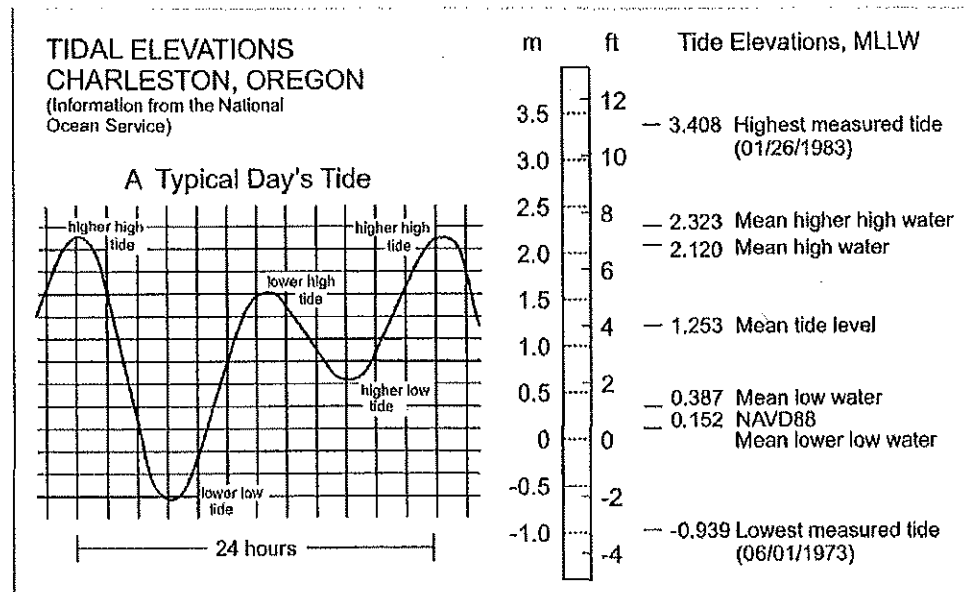


Figure 8 - Daily Tidal Elevations Measured at Charleston

Daily tidal elevations measured at Charleston on the southern Oregon coast.

Data from the National Ocean Service.

Figure 9 presents results of the generalized extreme value analyses for the Charleston tide gage. In constructing this plot, a threshold of 9.2 ft was used. The calculated SWLs in Figure 9 project to the 1-percent-annual-chance event. As can be seen in Figure 9, the 1-percent-annual-chance SWL calculated for the Charleston gage is 11.2 ft, relative to MLLW. When adjusted to the NAVD88 vertical datum, this value becomes 10.7 ft; note the adjustment from NAVD88 to MLLW is 0.5 ft. The 0.2-percent-annual-chance SWL is estimated to be 10.9 ft NAVD88. As observed previously, the highest tide measured at the Charleston gage reached 10.7 ft NAVD88. Of interest, the SWL identified in the original flood mapping calculations at Bandon, based on the Crescent City tide gage (and compared with the Charleston tide gage) indicated a SWL of 10.6 ft, close to the current estimate.

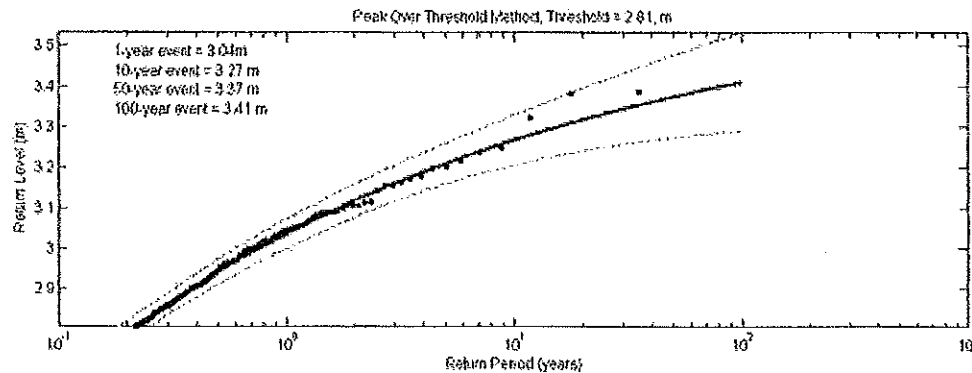


Figure 9 - Extreme-Value Analyses of SWL at Charleston Tide Gauge
Extreme-value analyses of the stillwater level (SWL) determined for the Charleston tide gage.

Flood elevations are summarized in Table 8, "Summary of Elevations". Peak discharge-drainage area relationships for each stream studied in detail are shown in Table 7, "Summary of Discharges".

Table 7. Summary of Discharges

Flooding Source and Location	Drainage Area (square miles)	Peak Discharges (cubic feet per second)			
		10-Percent- Annual-Chance	2-Percent- Annual-Chance	1-Percent- Annual-Chance	0.2-Percent- Annual-Chance
Blossom Creek					
At inlet to Mill Creek	1.0	130	170	190	240
Slough Box					
Calloway Creek					
Above Central Boulevard	2.7	280	400	440	530
Catching Slough					
At east side of Coos Bay	25.2	5,440	6,970	7,710	9,040
corporate limits					
Coos River					
At mouth	415	39,700	53,900	61,300	71,800
Coquille River					
Confluence with Pacific	1,058	77,200	107,000	122,000	143,000
Ocean					
At Riverton	980	73,100	101,000	116,000	136,000
At Coquille	930	70,500	97,100	111,000	130,000
At Arago	902	69,000	95,000	109,000	128,000
Confluence of North and	879	67,700	93,200	107,000	125,000
South Forks					
Cunningham Creek					
At mouth	14.2	1,360	1,860	2,020	2,410
Above Central Boulevard	2.7	280	400	440	530
East Fork Millilcoma River					
At confluence with West Fork	79	12,200	16,000	18,000	21,000
Ferry Creek					
Confluence with Coquille	5.2	640	890	980	1,220
River					
Above Highway 241 bridge	25	5,410	6,930	7,660	8,980

Table 7. Summary of Discharges (continued)

<u>Flooding Source and Location</u>	<u>Drainage Area (square miles)</u>	Peak Discharges (cubic feet per second)			
		<u>10-Percent- Annual-Chance</u>	<u>2-Percent- Annual-Chance</u>	<u>1-Percent- Annual-Chance</u>	<u>0.2-Percent- Annual-Chance</u>
Millicoma River					
Below Woodruff Creek	137	18,100	24,000	27,000	31,600
North Slough					
Above Highway 101 bridge	11.3	3,080	3,880	4,260	4,990
Pony Creek					
At Ocean Boulevard	3.9	84	140	180	290
At Woodland Drive	4.9	260	350	400	480
At Crowell Lane	6.2	320	420	480	590
South Fork Coquille River					
Confluence with North Fork at Myrtle Point	598	51,100	69,700	79,600	93,300
Tenmile Creek					
At Wildwood Drive	71.2	2,640	3,480	3,900	4,870
West Fork Millicoma River					
At confluence with East Fork	55	9,460	12,300	13,700	16,100

Table 8. Summary of Elevations

<u>Flooding Source</u>	Peak Water Surface Elevations (Feet NAVD88)			
	<u>10-Percent- Annual-Chance</u>	<u>2-Percent- Annual-Chance</u>	<u>1-Percent- Annual-Chance</u>	<u>0.2-Percent- Annual-Chance</u>
Blossom Creek				
City of Coos Bay	8.6 ¹	11.6 ²	12.6 ³	13.3 ³
Coos Bay				
South Slough	10.4	11.0	11.2	11.7
Ponding in the City of Coos Bay	11.2 ⁴	12.3 ³	12.6 ³	13.3 ³
West corporate limit of North Bend	11.2	11.8	12.1	12.6
Pony Slough	11.3	12.0	12.2	12.8
North Slough	11.5	12.1	12.4	13.0
Haynes Inlet	11.5	12.1	12.4	13.0
Southeast corporate limit of North Bend	11.6	12.3	12.6	13.3
Isthmus Slough at downtown Coos Bay	11.7	12.3	12.6	13.3
Isthmus Slough at Millington	11.8	12.4	12.7	13.4
Coalbank Slough	11.9	12.5	12.8	13.4
Coos River	12.3	13.1	13.5	14.5
Coquille River				
City of Bandon	12.6	14.5	15.2	17.0
Ferry Creek				
City of Bandon	12.6	14.5	15.2	17.0

¹ Peak elevation is controlled by volume of Blossom Creek hydrograph that must be stored.

² Peak elevation is controlled by the total volume of flow over the dike stored in downtown Coos Bay and Blossom Creek areas.

³ Peak elevation is controlled by elevation in slough.

⁴ Limited flow over city dike will fill low areas of downtown Coos Bay.

Table 8. Summary of Elevations (continued)

Flooding Source	Peak Water Surface Elevations (Feet NAVD88)			
	10-Percent- Annual-Chance	2-Percent- Annual-Chance	1-Percent- Annual-Chance	0.2-Percent- Annual-Chance
North Tenmile Lake				
At City of Lakeside	21.8	23.2	23.8	25.0
Pacific Ocean				
Bastendorff/Lighthouse Beach Profile 1	--	--	23.8	25.1
Bastendorff/Lighthouse Beach Profile 2	--	--	24.0	25.5
Bastendorff/Lighthouse Beach Profile 3	--	--	22.6	24.6
Bastendorff/Lighthouse Beach Profile 4	--	--	21.6	23.3
Bastendorff/Lighthouse Beach Profile 5	--	--	23.7	25.5
Bastendorff/Lighthouse Beach Profile 6	--	--	23.4	25.2
Bastendorff/Lighthouse Beach Profile 7	--	--	36.2	39.0
Bastendorff/Lighthouse Beach Profile 8	--	--	31.6	34.0
Bastendorff/Lighthouse Beach Profile 9	--	--	33.2	35.7
Bastendorff/Lighthouse Beach Profile 10	--	--	31.3	33.3
Bastendorff/Lighthouse Beach Profile 11	--	--	26.5	27.9
Bastendorff/Lighthouse Beach Profile 12	--	--	29.0	30.9
Bandon Profile 1	--	--	30.1	31.6
Bandon Profile 2	--	--	32.6	34.2
Bandon Profile 3	--	--	29.9	31.2
Bandon Profile 4	--	--	29.4	30.7
Bandon Profile 5	--	--	25.3	26.4
Bandon Profile 6	--	--	23.7	24.5
Bandon Profile 7	--	--	22.5	23.5
Bandon Profile 8	--	--	21.5	22.6
Bandon Profile 9	--	--	22.9	24.6
Bandon Profile 10	--	--	23.0	24.6
Bandon Profile 11	--	--	23.1	25.1
Bandon Profile 12	--	--	32.8	34.1
Bandon Profile 13	--	--	36.2	40.4
Bandon Profile 14	--	--	31.5	32.9
Bandon Profile 15	--	--	22.2	23.7
Bandon Profile 16	--	--	20.8	22.1
Bandon Profile 17	--	--	20.8	22.0
Bandon Profile 18	--	--	20.6	21.9
Bandon Profile 19	--	--	30.6	31.3
Bandon Profile 20	--	--	26.7	29.3
Bandon Profile 21	--	--	31.6	32.1
Tenmile Lake				
At City of Lakeside	21.8	23.2	23.8	25.0

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data Table in the FIS report. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS report in conjunction with the data shown on the FIRM.

Cross sections for backwater analyses of the Coquille River at Coquille and Arago and the South Fork of Coquille River at Myrtle Point were obtained by digitizing aerial photographs at a scale of 1:12,000. The underwater sections were obtained by field measurement. Cross sections for Tenmile Creek, the Millicoma River, the West Fork Millicoma River, the East Fork Millicoma River, and the Coquille River at Riverton were obtained by field measurement. Bridges were field checked to obtain elevation data and structure geometry.

Cross sections for backwater analyses of Calloway Creek and Cunningham Creek were measured on City of Coquille topographic maps at a scale of 1:1,200 with a 5-foot contour interval. The channel geometry was based on field observation. Culvert geometry was determined using state and county bridge plans.

Cross sections for the backwater analysis of Pony Creek were scaled from City of North Bend and City of Coos Bay topographic maps at a scale of 1:1,200 with 2-foot contour intervals (Chickering-Green Empire Inc., 1976). Channel sections, obtained by field measurements, were used with the scaled cross sections. All bridges were field checked to obtain elevation data and structural geometry.

Cross sections for the backwater analysis of the Coquille River estuary were scaled from City of Bandon topographic maps at a scale of 1:2,400 (Chickering, 1973), a USACE pre-dredge survey map at a scale of 1:2,000 (1979), and a NOAA nautical chart at a scale of 1:10,000 (1981). Cross sections for Ferry Creek were scaled from the Bandon topographic maps (Chickering, 1973) with the channel section obtained by field measurement. All bridges and culverts were field checked to obtain elevation data and structural geometry. Starting water surface elevations for the Coquille River and Ferry Creek were initially calculated using the slope-area method. When the 10-, 2-, 1-, and 0.2-percent-annual-chance elevations for the Coquille River were compared with the 10-, 2-, 1-, and 0.2-percent-annual-chance ocean elevations, it was found that backwater from the ocean would control the flood elevation in the estuary. It was also found that backwater from the Coquille River estuary would control the flood elevation in Ferry Creek; therefore, no flood profiles for the Coquille River and Ferry Creek are presented.

Channel roughness factors (Manning's "n") used in the hydraulic computations were chosen by engineering judgment and based on field observation of the river channel and flood plain. The range of roughness values for all floods is shown in Table 9. The acceptability of all assumed hydraulic factors, cross sections, non-effective flow areas, and hydraulic structure data was checked by hydraulic computations that were calibrated against historic floodwater profiles.

Table 9. Range of Manning's Roughness Values

<u>Flooding Source</u>	<u>Channel "n"</u>	<u>Overbanks "n"</u>
Calloway Creek	0.040-0.060	0.040-0.080
Cunningham Creek	0.040-0.060	0.040-0.080
Coquille River	0.080-0.100	0.040-0.080
Coquille River Estuary	0.030	0.030-0.035
East Fork Millicoma River	0.045	0.050-0.080
Ferry Creek	0.035-0.040	0.040-0.070
Millicoma River	0.040	0.040-0.080
Pony Creek	0.030-0.060	0.035-0.080
South Fork Coquille River	0.050-0.060	0.040-0.080
Tenmile Creek	0.030-0.085	0.060-0.120
West Fork Millicoma River	0.045	0.040-0.080

Water surface elevations of floods of the selected recurrence intervals were computed through use of the USACE HEC-2 step-backwater computer program (USACE, 1976).

Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. Starting water-surface elevations for Tenmile Creek were estimated using the relationship between peak recorded flow and elevation at the Tenmile Creek gage. Starting water-surface elevations for the Millicoma River, the Coquille River at Riverton, Cunningham Creek and Calloway Creek were determined using the slope-area method. Starting water-surface elevations for the West Fork Millicoma River and the East Fork Millicoma River were taken from the Millicoma River profiles. It was assumed that the West Fork and East Fork Millicoma Rivers would peak at about the same time. To determine starting water-surface elevations for the Coquille River at Coquille, Arago, and at the confluence of the North and South Forks Coquille River, the backwater analysis was continued between detailed study areas using cross sections scaled from 1:24,000 USGS topographic maps (USGS, various dates).

Downstream of Crowell Lane the estuary elevations control the flood elevations. Between Crowell Lane and Newmark Street, the flood elevations are controlled by the volume of water that must be stored behind the tide gates when the gates are closed.

A series of outflow rating curves were developed for the Crowell Lane culverts and tide gates assuming a range of tidal elevations downstream. A storage-capacity curve for the area above the tide gates was developed using the City of North Bend topographic maps (Chickering-Green Empire Inc., 1976).

Using the outflow rating and storage-capacity curves, several frequency hydrographs were routed through the area above the tide gates balancing inflows and outflows with changes in the volume of stored water. The storage routing was conducted over tide cycles predicted for the mean annual event and the 10-percent-annual-chance event.

On log-probability paper, the maximum elevations resulting from the storage routing for a mean annual tide cycle were plotted against the probability of the mean annual tide cycle occurring during each runoff event. A curve was drawn through the plotted points. The maximum elevations resulting from the routing for a 10-year tide cycle were plotted against the probability of the 10-year tide cycle occurring during each runoff event. A second curve was then drawn through these points. An enveloping curve was then drawn tangent to the two curves. This resulted in a peak elevation-frequency curve valid for other combinations of inflows and tide cycles. During this analysis, it was reasoned and demonstrated that the highest elevations behind the tide gates would occur when the inflow hydrograph and tide cycle peaks coincided. This condition was assumed in the original analysis.

During the community coordination meeting held on March 14, 2006, it was learned that the above tide gates on Pony Creek located at Crowell Lane had been removed and that the portion of Pony Creek upstream is now subject to flooding due to tidal and storm surge conditions. The flood profile and FIRM have been updated to reflect this condition.

Calloway Creek and Cunningham Creek run along the edge of a very flat area. At flood stage, the two creeks form one floodplain in the study area. Approximately 30 percent of the flood flow in Cunningham Creek will pass through the culvert under Fairview Road. The remaining flow is forced across the floodplain toward the Calloway Creek bridge at West Central Boulevard. On the downstream side of West Central Boulevard, approximately half of the combined flow of Calloway Creek and Cunningham Creek overflows in the area near the Cunningham Creek Bridge. The remaining flow continues down the normal channel alignment. Although a separate floodway was developed for the Cunningham Creek Overflow channel, a flood profile was not developed as the entire reach is backwatered by the Coquille River.

The profile baselines depicted on the FIRM represent the hydraulic modeling baselines that match the flood profiles on this FIS report. As a result of improved topographic data, the profile baseline, in some cases, may deviate significantly from the channel centerline or appear outside the Special Flood Hazard Area.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the Flood Profiles (Exhibit 1) are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross section locations are also shown on the FIRM (Exhibit 2).

Hydraulics for Detailed Estuarine Studies

Tsunami and storm flood events were considered to be independent events because tsunami waves can occur at any time during the year and storm waves are seasonal. Because of the uncertainties involved in combining these events, no probabilistic mapping of tsunami hazard was undertaken in this study.

Peak elevation frequency curves were developed for the Coos Bay estuary using a computer model that simulated the hydraulic response of the estuary to the 10-, 2-, 1-, and 0.2-percent-annual-chance tidal conditions at the entrance to the bay and to the 10-, 2-, 1-, and 0.2-percent-annual-chance inflows from major streams entering the bay. The hydrodynamic algorithm of the Dynamic Estuary Computer Model (Water Resources Engineers Inc. and CH2M HILL, 1977; Federal Water Quality Administration, 1975) was used for the hydraulic simulation.

A junction and channel grid network was constructed using the NOAA Nautical Chart for Coos Bay at a scale of 1:20,000 (1980), to represent the geometric flow pattern in the estuary. A total of 50 junctions and 78 interconnecting channels were used to model the estuary and adjoining sloughs within the detailed study limits.

Inputs to the hydraulic model included surface area and depth for the area represented by each junction, channel length, width, and roughness factors (Manning's "n"), and tidal and riverine inflow boundary conditions. For the Coos Bay network, channel widths ranged from 150 to 2,000 feet and lengths ranged from 3,200 to 8,300 feet. Channel roughness values varied from 0.023 to 0.035.

The Dynamic Estuary Model computed stage and channel velocities at each junction for each time step throughout several complete tide cycles by simultaneously solving one-dimensional equations of motion and continuity. Output from the hydraulic simulation summarizes the hourly stage and channel velocity at each junction.

The estuary computer model was calibrated to historical tide cycles recorded from November 8-12, 1976. Coincident records for those days were available for tide gages located throughout the bay (Water Resources Engineers Inc. and CH2M HILL, 1977; Federal Water Quality Administration, 1975). No significant storm activity occurred during this period. The simulated tide cycles at the junctions agreed with recorded tide cycles. The range of computed velocities correlated with velocity surveys conducted by the USACE in a similar study of Coos Bay during the period October 14-22, 1976 (USACE, 1978).

Combined tidal and riverine inflows effects were used to establish the 10-, 2-, 1-, and 0.2-percent-annual-chance flood elevations within the estuary. Hydraulic simulations were made using the 10-, 2-, 1-, and 0.2-percent-annual-chance tide cycles combine with the 10-percent-annual-chance inflow hydrographs for major stream inflows. It was assumed that the inflow hydrograph peak would coincide with the peak tidal stillwater levels (SWLs), because high estuary elevations will occur when they coincide.

Hydraulic simulations were also run with the 10-year tide cycle combined with the 10-, 2-, 1-, and 0.2-percent-annual-chance stream inflows. The resulting estuary elevations were compared to those determined using the 2-, 1-, and 0.2-percent-annual-chance tide cycles. The higher computed elevation at each junction for each frequency was used. Flood profiles are not applicable for areas of tidal flooding; therefore, no flood profiles are shown for Coos Bay or the Coos River.

The estuary elevations are SWLs resulting from tidal conditions at the Coos Bay entrance. They do not include any contributions from wind setup in the estuary or from wave action. Calculations for wind setup suggested the contribution was insignificant, while the increase in flood hazard from wave action will be less than 1 foot.

Peak flood elevation in downtown Coos Bay results from high water in Isthmus Slough overtopping the city dike. Peak flood elevations in Blossom Creek are controlled by the volume of water entering the creek when the tide is high enough to prevent any outflow past the tide gates.

During the 1- and 0.2-percent-annual-chance events, the volume of water overtopping the dike along Isthmus Slough will be great enough to fill Blossom Creek and the downtown area to be same elevation as the Slough. During the 2-percent-annual-chance event, the volume of water overtopping the dike will be great enough to fill the downtown area to the same elevation as the slough, but a constriction at 6th Street between Central and Bennett Avenues will limit the volume of water reaching Blossom Creek. While the dike is being overtopped, the water level will reach an elevation of approximately 7 feet (10.6 ft NAVD) in Blossom Creek. After the bay elevation recedes to below the top of the dike, there will continue to be a hydraulic gradient causing water to flow from the downtown area into Blossom Creek. This will continue until the total volume of water that overtopped the dike reaches a constant elevation of 8 feet (11.6 ft NAVD) throughout both areas.

Whenever the tide gates are closed and the water level in the downtown area is greater than the water level in Blossom Creek area, the backflow will tend to equalize the water levels in the two areas.

During the 10-percent-annual-chance event, only a small volume of water will flow over the dike and pond in the lowest areas of downtown Coos Bay. No dike

overflows will reach Blossom Creek. The 10-percent-annual-chance peak flood elevation is Blossom Creek was determined assuming that the greatest 4-hour volume under the 10-percent-annual-chance inflow hydrograph would occur during a high tide in the bay and have to be stored. This results in a 10-percent-annual-chance peak elevation of approximately 5 feet (8.6 ft NAVD).

Storage capacity curves for Blossom Creek and the downtown area of Coos Bay were developed using the City of Coos Bay topographic maps (Chickering-Green Empire Inc., 1976). Peak flood elevations in downtown Coos Bay and Blossom Creek are summarized in Table 5.

Hydraulics for Approximate Riverine Studies (Revised)

Cross sections were developed from aerial LiDAR surveys performed in the summer of 2008 (Oregon LiDAR Consortium, 2009). LiDAR was collected at a nominal density of 8 points per square meter. On flat surfaces the average vertical accuracy of the LiDAR point cloud is within 5 centimeters of true elevation. A 1-meter resolution digital elevation model (DEM) representing ground points was derived from the LiDAR point cloud. No hydro-enforcement was applied to the LiDAR DEM (e.g. the stream water surface during the time of survey was included in the DEM).

Cross sections were developed directly from the LiDAR DEM at regularly spaced intervals along straight channels. Where channels change direction significantly or engineered structures (e.g. bridges) are present, cross sections were spaced more closely.

Cross sections, overbank flow lines, banks, and stream centerlines were developed using the HEC-GeoRAS extension (USACE, 2010) for ArcGIS Desktop 9.3.1. A representative "Manning's N" value of 0.04 was applied to all studied reaches.

Normal depth was calculated to produce output flood zone polygons. Output polygons were then checked to assure flood zones had hydraulic connection to the main channel. Output polygons were removed where no reasonable connection could be established.

Hydraulics for Detailed Coastal Studies (Revised)

Field surveys were undertaken during the 2008-09 winter along the two beach study sites (Bandon, and Bastendorff and Lighthouse Beach) in Coos County. The purpose of these surveys was to provide measurements of the beach in its most eroded state (e.g. most eroded winter profile) in order to define the morphology, elevation, and slope of the beach face for use in subsequent wave runup and overtopping computations. Surveying at Bandon was carried out over a period of three days on February 8-10, 2009, and on March 8-10, 2009 at Bastendorff and Lighthouse Beach. In both cases, the surveys were completed late in the winter season when Oregon beaches are typically in their most eroded state (Aguilar-Tunon and Komar, 1978; Komar, 1997; Allan and Komar, 2002b; Allan and Hart, 2008). A total of 21 transects were established along the Bandon shoreline, while 11 transects were established between Sunset Beach State Park and Bastendorff Beach, adjacent to the mouth of Coos Bay (Figure 10).

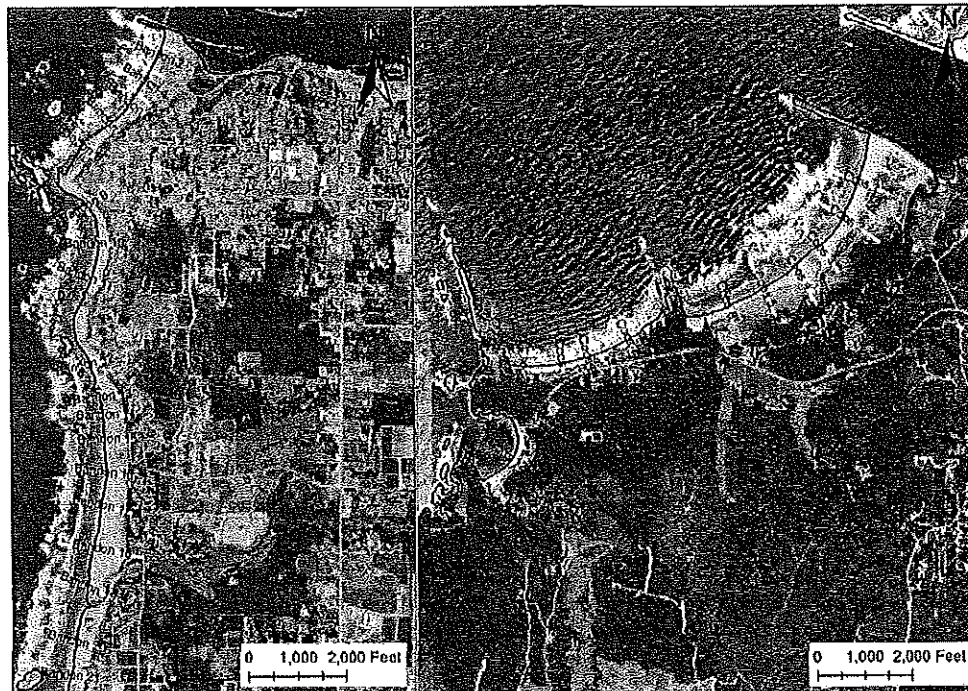


Figure 10 - Location Map of Beach Transects for Detailed Coastal Studies
Location map of beach profiles measured at Bandon (left) and at Bastendorff/ Lighthouse Beach (right) in Coos County.

Wave runup is the culmination of the wave breaking process whereby the swash of the wave above the SWL is able to run up the beach face, where it may encounter a dune, structure or bluff, potentially resulting in the erosion (Figure 11), or overtopping and flooding of adjacent land. Runup, "R", or wave swash is generally defined as the time-varying location of the intersection between the ocean and the beach, and summarized as a function of several key parameters. These include the deepwater wave height, peak spectral wave period and the wave length

(specifically the wave steepness), and through the breaker parameter (or Iribarren number), which accounts for the slope of a beach or an engineering structure and the steepness of the wave.

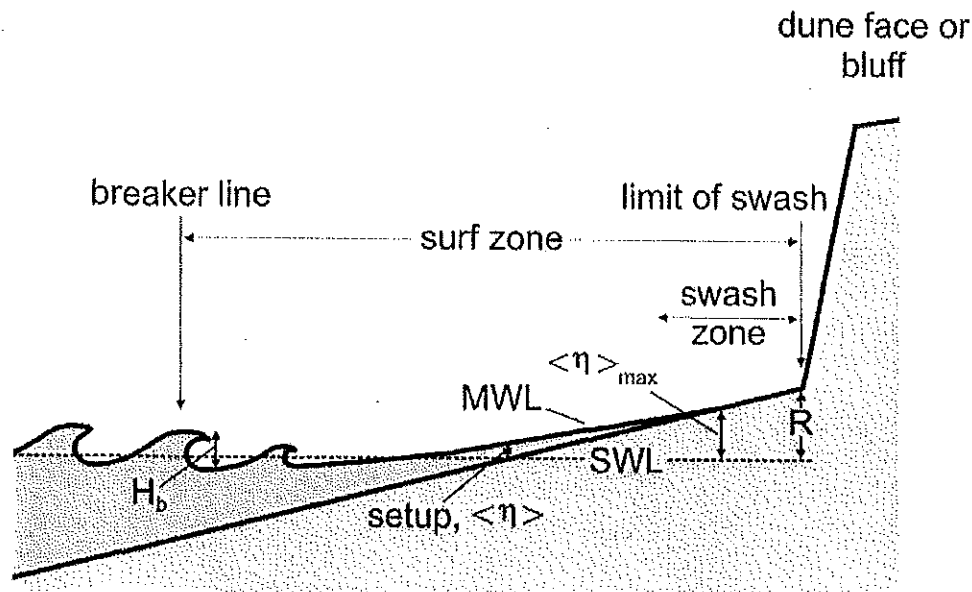


Figure 11 - Conceptual Model of Wave Runup

Conceptual model showing the components of wave runup associated with incident waves (modified from Hedges and Mase, 2004).

The total runup, “R”, produced by waves includes three main components:

- wave setup, $\langle \eta \rangle$;
- a dynamic component, η^{\wedge} ; and,
- incident wave runup, R_{inc}

$$R = \langle \eta \rangle + \eta^{\wedge} + R_{inc}$$

Along the Pacific Northwest Coast of Oregon and Washington, the dynamic component of runup, η^{\wedge} , has been demonstrated to be a major component of the total wave runup due to infragravity energy becoming trapped in the surf zone, allowing the swash to reach to much higher elevations at the shore.

A variety of models have been proposed for calculating wave runup on beaches (Ruggiero et al., 2001; Hedges and Mase, 2004; NHC, 2005; Stockdon et al., 2006). DOGAMI employed the runup model developed by Stockdon et al. (2006) due to its demonstrated ability to best represent beach environments in Coos County when compared to other models.

For calculating wave runup on barriers (e.g. bluffs) the method developed by the Technical Advisory Committee for Water Retaining Structures (TAW) was employed. Tables 10 and 11 provide the barrier runup reduction factors used for those selected profile sites along the Bandon and Bastendorff/Lighthouse beach shorelines. In the case of bluff roughness along the Bandon shore, we used a value of 0.6 due to the highly vegetated nature of the Bandon bluffs. These bluffs are located at their stable angle of repose and are covered with salal plants, where it forms a deep, nearly impenetrable thicket. Wave direction reduction factors presented in Table 10 and Table 11 are the mean values determined for all storms for each transect site.

Table 10. Barrier Runup Reduction Factors Used for Calculating Runup (Bandon)

<u>Bandon</u> <u>Profile</u>	<u>Roughness</u>	<u>Berm</u>	<u>Wave</u> <u>Direction</u>	<u>Description</u>
1	N/A	N/A	N/A	Dune-backed
2	N/A	N/A	N/A	Dune-backed
3	N/A	N/A	N/A	Dune-backed
4	N/A	N/A	N/A	Dune-backed
5	N/A	N/A	N/A	Dune-backed
6	N/A	N/A	N/A	Dune - Bluff-backed
7	0.6	1.0	0.81	Dune - Bluff-backed
8	0.6	1.0	0.89	Bluff-backed
9	0.6	1.0	0.90	Bluff-backed
10	0.6	1.0	0.99	Bluff-backed
11	0.6	1.0	0.98	Bluff-backed
12	0.6	1.0	0.99	Bluff-backed
13	0.6	1.0	1.0	Bluff-backed
14	0.6	1.0	1.0	Bluff-backed
15	N/A	N/A	N/A	Dune - Bluff-backed
16	N/A	N/A	N/A	Dune - Bluff-backed
17	N/A	N/A	N/A	Dune - Bluff-backed
18	N/A	N/A	N/A	Dune - Bluff-backed
19	0.6	1.0	0.96	Dune - Bluff-backed
20	0.6	1.0	1.0	Dune - Bluff-backed
21	0.6	1.0	1.0	Dune - Bluff-backed

Table 11. Barrier Runup Reduction Factors Used for Calculating Runup
(Bastendorff/Lighthouse Beach)

<u>Coos Profile</u>	<u>Roughness</u>	<u>Berm</u>	<u>Wave Direction</u>	<u>Description</u>
1	N/A	N/A	N/A	Dune-backed
2	N/A	N/A	N/A	Dune-backed
3	N/A	N/A	N/A	Dune-backed
4	N/A	N/A	N/A	Dune-backed
5	N/A	N/A	N/A	Dune-backed
6	N/A	N/A	N/A	Dune-backed
7	1.0	1.0	0.73	Bluff-backed
8	1.0	1.0	0.74	Bluff-backed
9	1.0	1.0	0.72	Bluff-backed
10	1.0	1.0	0.68	Bluff-backed
11	1.0	1.0	0.64	Bluff-backed
11	N/A	N/A	N/A	Dune - Bluff-backed

For both beach and barrier models, the calculated runup is combined with the appropriate measured tides to develop the total water level (TWL) conditions used to generate the 1- and 0.2-percent-annual-chance events. These extreme flood hazard statistics were calculated using the Stockdon et al. (2006) runup model at all 21 profiles at the Bandon focus site and 12 profiles along Bastendorff/Lighthouse Beach. Where applicable (Bandon 7-14 and 19-21 profile sites and for the Bastendorff/Lighthouse 7-11 profiles) these same statistics were calculated using the TAW method. TWLs produced from both the Stockdon et al. method and the TAW method are shown as the 1- and 0.2-percent-annual-chance in Table 8, "Summary of Elevations". Most TWLs come from the Stockdon et al. method. However, where the TAW method produced higher TWLs than the Stockdon et al. method (for bluff-backed beaches only), the TAW method TWLs are shown.

Overtopping of natural features such as foredunes, spits and coastal engineering structures and barriers occurs when the wave runup superimposed on the tide exceeds the crest of the foredune or structure (Figure 12). Based on TWL calculations, only Bandon profiles 1-6 and Bastendorff/Lighthouse profiles 1-5 and 12 experience overtopping during the 1-percent-annual-chance event.

Mapping flood inundation zones requires an estimate of the velocity, " V ", or discharge, " q ", of the water that is carried over the crest, the envelope of the water surface that is defined by the water depth, " h ", landward of the barrier crest, and the inland extent of green water and splash overtopping. According to NHC (2005) these hazard zones are ultimately defined based on the following two derivations:

- Base Flood Elevations (BFEs) are determined based on the water surface envelope landward of the barrier crest; and
- Hazard zones are determined based on the landward extent of green water and splash overtopping, and on the depth and flow velocity in any sheet flow areas beyond that, defined as $hV^2 = 200 \text{ ft}^3/\text{s}^2$.

A distinction can be made between whether green water (or bore) or splash overtopping predominates at a particular location, dependent on the ratio of the calculated wave runup height, “ R ”, relative to the barrier crest elevation, “ Z_c ” (Figure 11). When $1 < R/Z_c < 2$, splash overtopping dominates and for $R/Z_c > 2$, bore propagation occurs. In both cases, R and Z_c are relative to the 2% Dynamic Water Level ($DWL_{2\%}$) at the barrier (NHC, 2005).

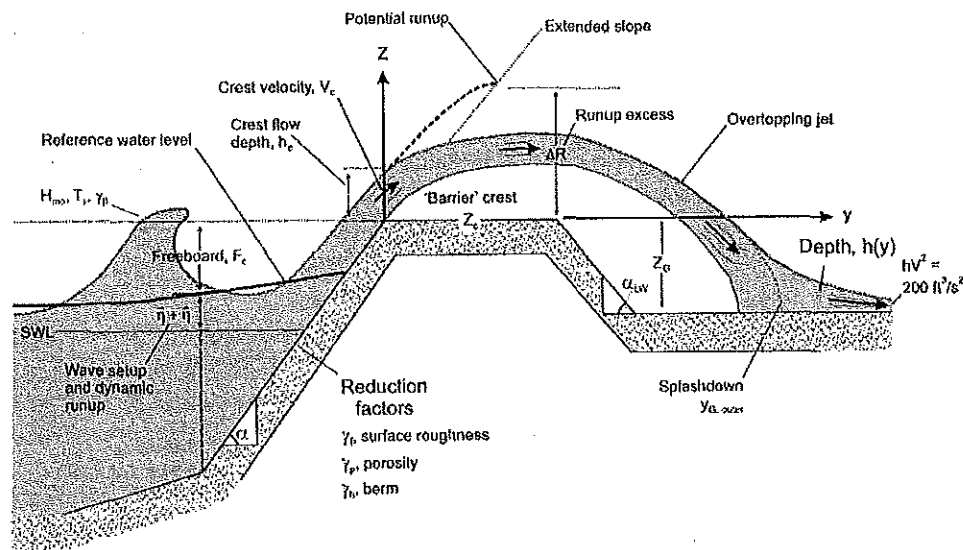


Figure 12 - Nomenclature of Wave Runup Parameters

Nomenclature of overtopping parameters available for mapping base flood elevations (BFEs) and flood hazard zones (after NHC, 2005).

Prior to calculating the mean overtopping rate at the barrier crest, it is necessary to first distinguish between four contrasting types of wave breaking situations that may impact a particular barrier or dune overtopping situation. The four conditions include (1) non-breaking or (2) breaking on normally sloped barriers, and (3) reflecting or (4) impacting on steeper barriers. Of these, the only one that applies to the Coos County detailed coastal study sites is the breaking wave situation (2), where the waves have already broken across the surf zone and are reforming as bores prior to swashing up the beach face or barrier.

At the beach or barrier crest, the relative freeboard, “ F_c ”, (Figure 11), is a particularly important parameter since changing these two parameters controls the volume of water that flows over the barrier crest. For example, increasing the

wave height or period increases the overtopping discharge, as does reducing the beach or barrier crest height or raising the water level.

A variety of prediction methods are available for calculating the overtopping discharge and are almost entirely based on laboratory experiments based on a range of structure slopes (slopes between 1:1 and 1:8, with occasional tests at slopes around 1:15 or lower). Factors that reduce the potential overtopping discharge include the barrier surface roughness, " γ_f ", the presence of a berm, " γ_b ", wave approach directions, " γ_θ ", and the porosity of the barrier, " γ_p " (Figure 11). Of the four reduction parameters, only the angle of wave attack was used to reduce the overtopping discharge along the Coos County detailed study sites. The presence of a berm can be ignored since berms are non-existent in a most eroded winter profile. The surface roughness was ignored since the beach face and backshore is composed of sand and hence has only a nominal effect on reducing overtopping. Porosity was also ignored as the beach is characterized by medium to coarse sand and during major storms the beach is typically in a saturated state due to the combination of high runup and the storm duration, such that the beach is less capable of taking up additional water.

Initial computations of the landward extent of wave overtopping using the prescribed method (NHC, 2005) yielded narrow hazard zones for Coos County. To calibrate the method for realistic application on the Coos County coast, wave overtopping calculations were performed for a site on the northern Oregon coast where field observations of wave overtopping had been observed. The site is Cape Lookout State Park located on the northern Oregon coast in Tillamook County (Allan and Komar, 2002a; Komar et al., 2003; Allan et al., 2006). The southern portion of Cape Lookout State Park is characterized by a wide, gently sloping, dissipative sand beach, backed by a moderately steep gravel berm and ultimately by a low foredune that has undergone significant erosion since the early 1980's (Komar et al., 2000).

In March 1999, the crest of the cobble berm/dune at Cape Lookout State Park was overtopped during a major storm; the significant wave heights reached 14.1 m (46.3 ft), while the peak periods were 14.3 seconds (Allan and Komar, 2002b). Wave overtopping of the dune and flooding extended 230 ft into the park (Dr. P. Komar, Emeritus Professor, College of Oceanic and Atmospheric Sciences, pers. comm., 2010), evidence for which included photos and field evidence including pock-marks at the base of the tree trunks located in the park. These pock-marks were caused by cobbles having been carried into the park from the beach by the overtopping waves, where they eventually slammed into the base of the trees as ballistics. Since the average beach slopes at Cape Lookout State park are analogous to those observed along the shore near the Bandon south jetty and that large wave events associated with extra-tropical storms affect significant stretches (hundreds to thousands of miles) of the coast at any single point in time, these data are believed to provide a reasonable means in which to investigate a range of

alpha values, " α ", (Figure 11) that may be used to determine the landward extent of wave inundation at Cape Lookout State Park.

Using beach morphology data from Cape Lookout State Park and deepwater wave statistics from a nearby National Data Buoy Center (NDBC) wave buoy (#46050), a range of alpha values were experimented with in order to replicate the landward extent of the inundation. In order to emulate the landward extent of flooding observed at Cape Lookout State Park the analyses yielded an alpha of 0.58. Using this alpha value, the extent of the hazard zone was calculated where $hV^2(y) = 200 \text{ ft}^3/\text{s}^2$, which was found to be approximately 34 meters from the crest of the cobble berm/dune, consistent with damage to facilities in the park.

Table 12 presents the results of the calibrated splashdown distances, " $y_{G \text{ outer}}$ ", (Figure 11) and the landward extent of the flow, " hV^2 ", (Figure 11) where the flows approach $200 \text{ ft}^3/\text{s}^2$. The calculated splashdown distances, " $y_{G \text{ outer}}$ ", (Table 12) were based on an enhanced wind velocity of 64.3 ft/s. This enhanced wind velocity was determined from an analysis of wind speeds measured by the Cape Arago C-MAN station located adjacent to the mouth of Coos Bay. The range of wind speeds identified at Cape Arago was examined for each storm event defined for this study and revealed a wide range of values, with the maximum being 64.3 ft/s. Since the measured wind speeds reflect a 2-minute average such that higher wind speeds have been measured throughout the entire record (e.g. the maximum 2-minute average wind speed is 96 ft/s, while the maximum 5-second wind gust reached 125.0 ft/s), it is considered justified to use the more conservative enhanced wind velocity of 64.3 ft/s rather than the default of 44 ft/s prescribed by NHC (2005).

The Bastendorff/Lighthouse Beach profile 2 site presents a situation where the calculated 1-percent-annual-chance TWL of 24 ft approximately equals the beach/dune crest elevation of 23.9 ft, suggesting that overtopping would probably not occur; in this situation the landward location of the primary frontal dune (PFD) would determine the width of the hazard zone.

Table 12. Splashdown and Flood Zone Limits for Detailed Coastal Profiles

<u>Profile</u>	<u># of Wave Overtopping Events, and Events where $hV^2 > 200$ ft^3/s^2</u>	<u>Maximum Splashdown $\gamma_{G \text{ outer}}$ (ft)</u>	<u>Maximum $hV^2(\gamma) =$ $200 \text{ ft}^3/\text{s}^2$ (ft)</u>	<u>Maximum Width of Hazard Zone (ft)</u>	<u>Distance from Profile Benchmark (ft)</u>
Bandon Profile Sites					
1	127 / 11	4.3	149.3	153.2	529.2
2	115 / 15	11.2	193.6	204.7	432.4
3	103 / 12	11.2	165.0	176.2	524.9
4	83 / 15	13.5	183.7	197.2	367.5
5	55 / 1	4.9	29.2	33.5	274.9
6	101 / 3	6.2	69.2	75.1	152.2
Bastendorff/Lighthouse Beach Profile Sites					
1	6 / 0	2.0	-	2.0	998.7
2	0 / 0	-	-	-	-
3	3 / 0	10.2	-	10.2	631.2
4	105 / 25	14.8	149.9	164.7	602.0
5	14 / 0	8.5	-	8.5	829.9
12	132 / 132	5.6	373.7	379.3	-50.9

Mapping of the SFHA for bluff-backed beaches used TWLs shown in Table 8, "Summary of Elevations", and extended them into the bluff. The contour of interest was extracted from a 1-meter resolution DEM derived from LiDAR ground points surveyed in the summer of 2008 (Oregon LiDAR Consortium, 2009). In all cases, the calculated TWLs were rounded to the nearest whole foot. The landward extent of the SFHA (Zone VE) is defined by the contour representing the TWL calculated for each of the surveyed profiles. To define the landward extent of the SFHA (Zone VE) between profile locations professional judgment was used to establish appropriate zone breaks by identifying along-shore geomorphic barriers within which a particular TWL is valid. Slope and hillshade derivatives of the LiDAR DEM, as well as 1-meter orthophotos (Oregon Geospatial Data Clearinghouse, 2009), provided base reference. An effort was made to orient zone breaks perpendicular to the beach at the location of the geomorphic barrier. In all cases, the seaward extent of the SFHA (Zone VE) was inherited from the previous FIS.

Mapping of the SFHA for dune-backed beaches was performed by calculating the degree of wave overtopping at each profile location (Figure 11; Table 12). The

furthest point landward of the dune crest that experiences coastal flooding due to overtopping and is ultimately controlled by the extent of the landward flow where it approaches $200 \text{ ft}^3/\text{s}^2$; values greater than $200 \text{ ft}^3/\text{s}^2$ are located within the Zone VE SFHA, while values that dissipate below that threshold are designated within the Zone AE SFHA. For SFHAs (Zone VE) seaward of the dune crest, TWLs shown in Table 8, "Summary of Elevations", were used. As with bluff-backed beaches, professional judgment was used to establish appropriate zone breaks between profile locations. This was achieved using the LiDAR DEM (Oregon LiDAR Consortium, 2009), supplemented by knowledge of the local geomorphology. Again, an effort was made to orient zone breaks perpendicular to the beach and the seaward extent of the SFHA (Zone VE) was inherited from the previous FIS. Elevations were identified from the LiDAR DEM to aid in establishing zone breaks due to changes in flood depth landward of the dune crest. Slope and hillshade derivatives of the LiDAR DEM, as well as 1-meter orthophotos (Oregon Geospatial Data Clearinghouse, 2009), provided base reference. Some interpretation was required to appropriately map the SFHA for the printed FIRM panel scale.



Figure 13 - Overtopping of Barrier Beach at Garrison Lake Near Port Orford
Overtopping of the barrier beach adjacent to Garrison Lake during a major storm on February 16, 1999 (Photo courtesy of a resident at Port Orford, Oregon).

Hydraulics for Approximate Coastal Studies (Revised)

FEMA guidelines direct that for mapping the SFHA in coastal areas where no detailed studies have occurred (Zone V), the location of the primary frontal dune

(PFD) be defined as the most landward extent of flooding. The PFD is defined as "a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high tides and waves during major coastal storms. The landward limit of the primary frontal dune, also known as the toe or heel of the dune, occurs at a point where there is a distinct change from a relatively steep slope to a relatively mild slope. The primary frontal dune toe represents the landward extension of the Zone VE coastal high hazard velocity zone" (Part 44 of the US Code of Federal Regulations, Section 59.1; FEMA Coastal Hazard Bulletin, No. 15).

The mapping approach developed by DOGAMI addresses three distinct geomorphic environments where the PFD is variably discernible: (1) dune-backed beaches, (2) bluff-backed beaches, and (3) areas where streams drain into the Pacific Ocean.

The approach developed by DOGAMI to define the morphology of dune-backed beaches, including the location of the PFD, was based on detailed analyses of LiDAR elevation data measured by the USGS/NASA/NOAA in 1998 and 2002, and by the Oregon LiDAR Consortium (OLC) in the summer of 2008. However, because the LiDAR flown by the USGS/NASA/NOAA is of relatively poor resolution (nominal point spacing of 1 point per square meter) and reflects only a single return (i.e. includes vegetation where present) it was not used for mapping, only geomorphic time series analysis. OLC LiDAR is of much higher precision (nominal point spacing of 8 points per square meter) and was characterized by multiple returns enabling the development of a ground LiDAR DEM. Determination of the PFD was based entirely on analysis of the OLC LiDAR.

Profiles spaced 50 meters apart were cast perpendicular to the full length of the county coastline using the Digital Shoreline Analysis System (DSAS) developed by the USGS (Thieler et al., 2009). For each profile, 3D coordinates for the 1998, 2002 and 2008 LiDAR were extracted at 1-meter intervals along each profile.

Processing of the LiDAR was performed in Matlab using a custom beach profile analysis script developed by DOGAMI that interactively defines various morphological features, including the dune/bluff crest/top, bluff slope (where applicable), landward edge of the PFD, beach/dune juncture elevations for each year, and the slope of the beach foreshore.

Time series analysis of morphological features identified in the serial LiDAR indicate that erosion predominates along both the north Coos Spit and along much of the New River Spit, while much of the shore along Bullards Beach, located north of Bandon, appears to be accreting.

Due to uncertainties in identifying the PFD (as defined by FEMA), mapping of the SFHA for dune-backed beaches required that some professional judgment be

employed. For example, where there was determined to be a high probability of erosion within ten years, the SFHA was mapped slightly landward of the PFD.

For bluff-backed beaches the landward extent of the SFHA was mapped at the top of the bluff, a readily identifiable feature in the 2008 OLC LiDAR.

Mapping of the SFHA in areas influenced by fluvial processes (e.g. near the mouth of Tenmile Creek) required professional judgment. Historical aerial photos and serial LiDAR were referred to for past evidence of flotsam and debris, wetlands, and channel migration.

3.3 Wave Height Analysis



Figure 14 - February 9, 2009 Photo of Coquille Jetties During a Winter Storm Event
Looking north toward the Coquille River jetties in Bandon, Oregon during a typical winter storm on February 9, 2009 (Photo by Jon Allan, DOGAMI).

The wave climate offshore from the Oregon coast is one of the most extreme in the world, with winter storm waves regularly reaching heights in excess of several meters. This is because the storm systems emanating from the North Pacific travel over fetches that are typically a few thousand miles in length and are also characterized by strong winds, the two factors that account for the development of large wave heights and long wave periods (Tillotson and Komar, 1997). These storm systems originate near Japan or off the Kamchatka Peninsula in Russia, and typically travel in a southeasterly direction across the North Pacific towards the

Gulf of Alaska, eventually crossing the coasts of Oregon and Washington or along the shores of British Columbia in Canada.

Wave statistics (heights and periods) have been measured in the North Pacific using wave buoys and sensor arrays since the mid 1970's. These data have been collected by NOAA, which operates the National Data Buoy Center (NDBC) and by Scripps Institution of Oceanography, which operates the Coastal Data Information Program (CDIP). The buoys cover the region between the Gulf of Alaska and Southern California, and are located in both deep and in intermediate to shallow water over the continental shelf. The NDBC operates some 30 stations along the West Coast of North America, while CDIP has at various times carried out wave measurements at 80 stations. Presently there is one CDIP buoy operating offshore from Coos Bay (#46229), and two NDBC buoys (Oregon [#46002] and Port Orford [#46015]) located offshore from the southern Oregon coast. Wave measurements by NDBC are obtained hourly. CDIP provides measurements every 30 minutes. Measurements are transmitted via satellite to the laboratory for analysis of the wave energy spectra, significant wave heights and peak spectral wave periods (NOAA, 2009).

Analyses of the wave climate offshore from Coos County were performed at Oregon State University (OSU), and included numerical analyses of the 1-percent-annual-chance extreme storm wave event and the associated wave setup to determine the degree of coastal flood risk along the coast of Coos County.

OSU performed a series of analyses including wave transformations, empirical wave runup modeling, and TWL modeling. For the purposes of this study, OSU used the SWAN (Simulating Waves Nearshore) wave model to transform deepwater waves (for a range of 1-percent-annual-chance events) to the nearshore (typically the 65.6 ft [20 m] contour). The deep-water equivalent of these refracted nearshore waves was determined using the linear shoaling relation in order to calculate wave runup levels, which were then combined with the tidal component in order to estimate the flood risk along the Bandon shore and at Bastendorff/Lighthouse Beach.

All available NDBC and CDIP hourly wave buoy data were acquired for several wave buoys in the region. In addition, wave hindcast information on the deepwater wave climate determined through the Wave Information Studies (WIS) (Baird, 2005) was acquired for station 074, located adjacent to NDBC buoy #46002, the primary wave buoy used in this study due to its high quality long record of data (1975-present). However, since this buoy is located in 11,500 ft of water and is over 250 miles from the location of the shelf edge buoys (Port Orford #46015 and Umpqua Offshore #46229), it was necessary to develop a methodology to transform these 'off-shelf' waves to the 'shelf-edge' offshore boundary condition of the SWAN model. The wave climate observed at NDBC buoy #46002 has significant differences compared to the climate observed at the Port Orford #46015 and Umpqua Offshore #46229 buoys.

To transform the NDBC buoy #46002 waves to the shelf edge, wave period bins were created to evaluate if there has been a wave period dependent difference in wave heights observed at NDBC buoy #46002 compared with the Port Orford #46015. For comparison, the time stamps associated with waves measured at NDBC buoy #46002 were adjusted based upon the group celerity (for the appropriate wave period bin) and travel time it takes the wave energy to propagate to Port Orford #46015.

After correcting for the time of wave energy propagation the differences in wave heights between the two buoys, for each wave period bin, were calculated in two ways. First, a best-fit linear regression through the wave height differences was computed for each wave period bin. Second, a constant offset was computed for the wave height differences for each period bin.

Upon examination of the empirical probability density functions (PDF) of both buoys' raw time series (using only approximately last 5 years of NDBC buoy #46002, the time of overlap with the shelf buoys) and after applying both transformation methods, it was determined that the constant offset method did a superior job of matching the PDF, particularly at high wave heights. Therefore, a constant offset adjustment dependent on the wave period was applied to the wave heights of NDBC buoy #46002.

Because the WIS hindcast data used in this study was also located well beyond the boundary of the SWAN model (effectively at the location of NDBC buoy #46002), the same series of steps comparing WIS wave heights to those from Port Orford #46015 were carried out, with a new set of constant offsets having been calculated and applied. Data from the Port Orford #46015 and Umpqua Offshore #46229 were also compared in this same manner and it was determined that their wave height differences in the alongshore extent (e.g. offshore from Coos County) are negligible. Therefore it is assumed that a constant offshore wave height boundary condition is appropriate for the SWAN model.

After applying the wave height offsets to the NDBC buoy #46002, gaps in this time series were filled in respectively with Port Orford #46015 and subsequently the Umpqua Offshore #46229. Where there were still gaps following this procedure the time series was then filled in with the corrected WIS data. Because wave transformations (particularly refraction) computed by SWAN are significantly dependent on wave direction, when this information was missing in the buoy records it was replaced with WIS data for the same date in the time series; the wave height and period data was carried over from buoy observations where applicable. For conditions in the time series that had no estimate of wave direction from either the buoys or the WIS data a value of 270 degrees (e.g. westerly waves) was assumed.

The final synthesized wave time series developed for Coos County extends from late 1979 through to the end of 2008 and consists of approximately 27.5 years of good data (measurements including at least wave height and periods) out of a possible 29.2 years.

The wave climate offshore from the Oregon coast is episodically characterized by large wave events (> 26 ft), with some storms having generated deepwater extreme waves on the order of 49 ft. The average wave height offshore from Coos County is 8.5 ft, while the average peak spectral wave period is 11.1 seconds, although periods of 20-25 seconds are not uncommon.

The Pacific Northwest wave climate is characterized by a distinct seasonal cycle evident in the variability in the wave heights and peak periods between summer and winter. Monthly mean significant wave heights are typically highest in December and January, although large wave events (> 39.4 ft) have occurred in all of the winter months except March. The highest significant wave height observed in the wave climate record is 50.9 ft, substantially exceeding the 1-percent-annual-chance wave height used in the previous Bandon FIS (1996), which was 24.6 ft and was derived from WIS data for the period of 1956 to 1975. In general, the smallest waves occur during late spring and in the summer, with wave heights typically averaging approximately 5 ft during the peak of the summer (July/August). These findings are consistent with other studies that have examined the Pacific Northwest wave climate (Tillotson and Komar, 1997; Allan and Komar, 2006; P. Ruggiero et al., 2010).

A probability density function determined for the complete time series indicates that for 50% of the time waves are typically less than 7.2 ft, and less than 14.8 ft for 90% of the time. Wave heights exceed 24.3 ft for 1% of the time. However, it is these latter events that typically produce the most significant erosion and flooding events along the Oregon coast.

With regard to wave direction along the south Oregon coast, in general, the summer is characterized by waves arriving from the northwest, while winter waves typically arrive from the west or southwest (Komar, 1997). Separate analyses of the summer and winter directional data developed from the synthesized time series, comprised of both WIS data from the shelf edge buoys, agree with this pattern. To better highlight the predominant wave directions for the winter months, wave heights less than 33 ft have been eliminated from the analyses. Summer months are characterized by waves arriving from mainly the west-northwest (~25%) to northwesterly quadrant (~21%), with few waves out of the southwest. The bulk of these reflect waves with amplitudes that are predominantly less than 9.8 ft. In contrast, the winter months are dominated by much larger wave heights out of the west (~25-35%), and to a lesser extent the northwest (~18%).

Figure 15 is a profile for a hypothetical transect showing the effects of energy dissipation on a wave as it moves inland. This figure shows the wave elevations being decreased by obstructions, such as buildings, vegetation, and rising ground elevations and being increased by open, unobstructed wind fetches. Actual wave conditions may not necessarily include all of the situations shown in Figure 15.

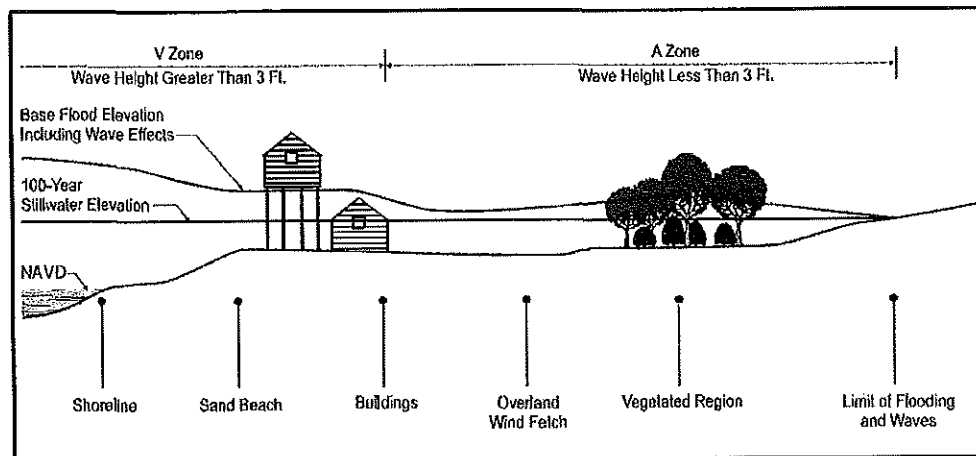


Figure 15 - Schematic of Coastal Profile

3.4 Vertical Datum

All FIS reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum in use for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the finalization of North American Vertical Datum of 1988 (NAVD88), many FIS reports and FIRMs are being prepared using NAVD88 as the referenced vertical datum.

All flood elevations shown in this FIS report and on the FIRM are referenced to NAVD88. Structure and ground elevations in the community must, therefore, be referenced to NAVD88. It is important to note that adjacent communities may be referenced to NGVD29. This may result in differences in Base Flood Elevations (BFEs) across the corporate limits between the communities.

For additional information regarding conversion between NGVD29 and NAVD88, visit the NGS website at www.ngs.noaa.gov, or contact the NGS at the following address:

Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

The conversion factor from NGVD to NAVD for all streams in this report was +3.62 feet. The conversion was performed during the initial countywide update.

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the Technical Support Data Notebook associated with the FIS report and FIRM for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks shown on this map, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at www.ngs.noaa.gov.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each FIS provides 1-percent-annual-chance (100-year) flood elevations and delineations of the 1- and 0.2-percent-annual-chance (500-year) floodplain boundaries and 1-percent-annual-chance floodway to assist communities in developing floodplain management measures. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, Floodway Data Table, and Summary of Elevations Table. Users should reference the data presented in the FIS report as well as additional information that may be available at the local map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance flood is employed to indicate additional areas of flood risk in the community.

For each flooding source studied by detailed methods, the 1- and 0.2-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using 1 meter resolution bare earth LiDAR DEMs (effective map scale of approximately 1:2,300), with a contour interval of 0.5 feet (Oregon LiDAR Consortium, 2009).

For streams studied by approximate methods, the 1-percent-annual-chance floodplain boundaries have been delineated using flood elevations at every grid cell of 1 meter resolution bare earth LiDAR DEMs (effective map scale of

approximately 1:2,300). No interpolation was performed. Note that exceptions exist where LiDAR was not available in the far eastern portion of Coos County. In these areas 1-percent-annual-chance flood boundaries were delineated using Flood Hazard Boundary Maps for Coos County (U.S. Department of Housing and Urban Development, 1977), Geologic Hazard Maps (Beaulieu and Hughes, 1975), and engineering judgment. These exceptions include areas along the upper East Fork Millicoma River, Glenn Creek, upper East Fork Coquille River, West Fork Brummit Creek, and East Fork Brummit Creek.

The 1- and 0.2-percent-annual-chance floodplain boundaries are shown on the FIRM (Exhibit 2). On this map, the 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A, AE, V, and VE), and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1- and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM (Exhibit 2).

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1-percent-annual-chance flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this FIS report and on the FIRM were computed for certain stream segments on the basis of equal-conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations have been tabulated for selected cross sections in Table 13, "Floodway Data". In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary has been shown.

Floodways for the Coquille River and the South Fork Coquille River were computed on the basis of equal-conveyance reduction from each side of the floodplain. Because of the complexity and hydraulic controls on the Calloway

Creek/Cunningham Creek floodplain, a standard floodway based on equal-conveyance reduction is not possible. Instead, the floodways for these two creeks were calculated by trial-and-error based on the flow divisions of the normal depth 1-percent-annual-chance flood.

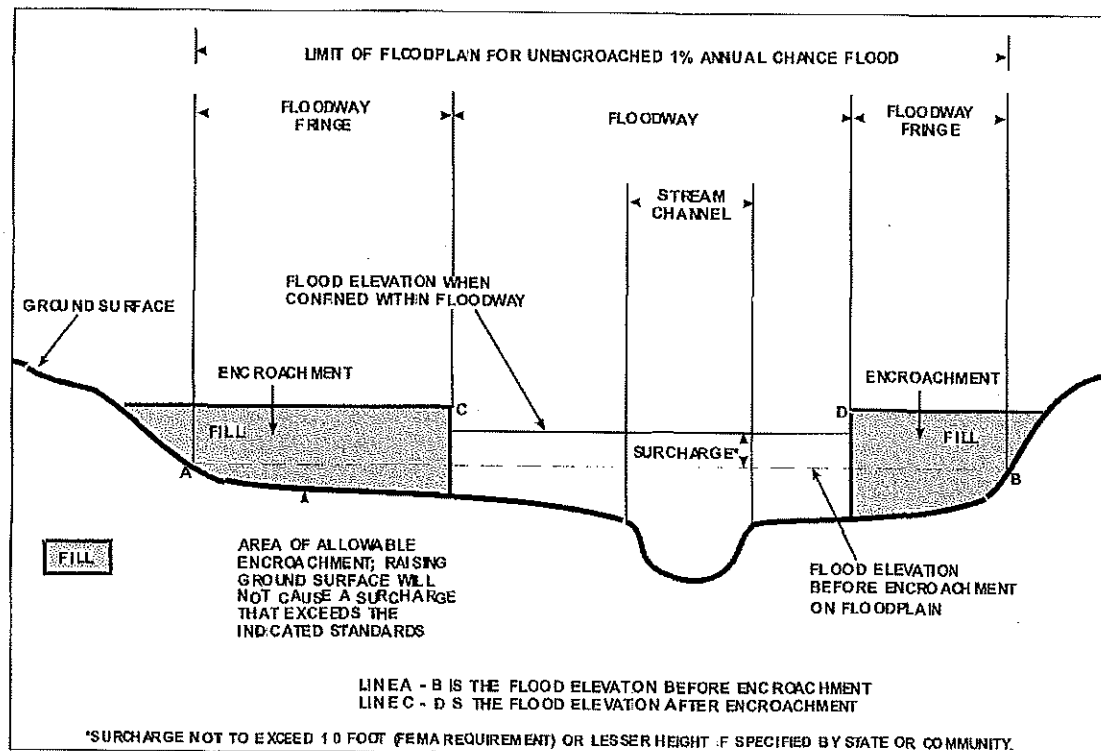
As shown on the Flood Information Rate Maps (FIRM), the floodway widths were determined at cross sections; between cross sections, the boundaries were interpolated. In cases where the boundaries of the floodway and the 1-percent-annual-chance flood are either close together or collinear, only the floodway boundary has been shown.

The floodway for Pony Creek above Newmark Street was computed on the basis of equal conveyance reduction from each side of the floodplain. No floodway was delineated on Pony Creek between Crowell Lane and Newmark Street or downstream of Crowell Lane because the floodway concept is not applicable in areas where flooding is controlled by tidal influences.

No floodway was determined for the Coquille River within the City of Bandon corporate limits and for Ferry Creek because both streams are subject to tidal influence.

The area between the floodway and 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water surface elevation of the 1-percent-annual-chance flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 16.

Figure 16. Floodway Schematic



FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FEET)	PRIOR STUDY WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD88)	WITHOUT FLOODWAY (FEET NAVD88)	WITH FLOODWAY (FEET NAVD88)	INCREASE (FEET)
Calloway Creek A B C	60 ¹	37		262	5.8	24.0	20.1	20.2	0.1
	160 ¹	61		353	4.3	24.8	21.5	22.5	1.0
	680 ¹	173		1,253	1.2	24.8	22.0	22.9	0.9
Cunningham Creek A B C D E F G H I	920 ²	56		219	4.4	24.0	14.2 ³	15.2 ³	1.0
	2,560 ²	47		188	4.6	24.0	18.0 ³	18.1 ³	0.1
	3,560 ²	47		187	4.7	24.0	20.0 ³	20.1 ³	0.1
	4,280 ²	51		169	2.5	24.0	20.1 ³	20.2 ³	0.1
	4,390 ²	N/A ⁴	38	169	2.5	24.5	20.1 ³	20.2 ³	0.1
	4,830 ²	36		102	4.2	24.6	20.6 ³	20.7 ³	0.1
	5,270 ²	38		109	3.9	24.6	21.5 ³	21.7 ³	0.2
	5,360 ²	40		109	3.9	24.6	21.5 ³	21.7 ³	0.2
	5,530 ²	45		167	2.6	24.8	22.0 ³	23.0 ³	1.0
Cunningham Creek Overflow Channel A B C	1,130 ²	121		452	2.4	24.0	10.9 ³	11.9 ³	1.0
	2,710 ²	120		660	1.6	24.0	12.4 ³	13.4 ³	1.0
	4,030 ²	195		194	5.5	24.0	19.5 ³	19.5 ³	0.0

¹Feet above Cunningham Creek outside of SFHA at this location ²Feet above mouth ³Elevations computed without effects from Coquille River ⁴Due to re-delineation floodway is now

TABLE 13 FEDERAL EMERGENCY MANAGEMENT AGENCY COOS COUNTY, OREGON AND INCORPORATED AREAS	FLOODWAY DATA
	CALLOWAY CREEK, CUNNINGHAM CREEK, CUNNINGHAM CREEK OVERFLOW CHANNEL

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD88)	WITHOUT FLOODWAY (FEET NAVD88)	WITH FLOODWAY (FEET NAVD88)	INCREASE (FEET)
Coquille River at Riverton	82,440	1,377	23,879	4.9	22.2	22.2	23.2	1.0
	84,650	2,194	42,275	2.7	22.8	22.8	23.8	1.0
	86,800	2,511	45,371	2.6	23.1	23.1	24.1	1.0
	89,600	3,945	72,926	1.6	23.3	23.3	24.3	1.0
Coquille River at Coquille	121,600	5,535	88,146	1.3	24.0	24.0	25.0	1.0
	123,550	6,949	129,249	0.9	24.0	24.0	25.0	1.0
	126,250	7,603	138,886	0.8	24.0	24.0	25.0	1.0
	128,400	6,443	125,613	0.9	24.1	24.1	25.1	1.0
	130,300	7,178	133,927	0.8	24.1	24.1	25.1	1.0
	132,250	6,716	128,508	0.9	24.1	24.1	25.1	1.0
	133,050	7,211	131,137	0.8	24.1	24.1	25.1	1.0
	135,700	6,110	113,706	1.0	24.1	24.1	25.1	1.0
	137,800	5,930	103,284	1.1	24.1	24.1	25.1	1.0
	139,600	6,293	115,736	1.0	24.2	24.2	25.2	1.0
	141,500	6,376	111,041	1.0	24.2	24.2	25.2	1.0
	143,150	6,546	101,204	1.1	24.2	24.2	25.2	1.0
	145,200	5,996	88,563	1.2	24.3	24.3	25.3	1.0

¹Feet above mouth

FEDERAL EMERGENCY MANAGEMENT AGENCY

TABLE 13

FLOODWAY DATA

COOS COUNTY, OREGON
AND INCORPORATED AREAS

COQUILLE RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD88)	WITHOUT FLOODWAY (FEET NAVD88)	WITH FLOODWAY (FEET NAVD88)	INCREASE (FEET)
Coquille River at Arago R S T	168,350	5,605	49,712	2.2	30.4	30.4	31.4	1.0
	171,350	5,669	47,885	2.3	31.2	31.2	32.2	1.0
	174,250	7,465	62,370	1.7	31.9	31.9	32.8	0.9
Coquille River at Myrtle Point U	191,520	1,106	16,630	6.4	38.0	38.0	39.0	1.0
South Fork Coquille River at Myrtle Point V W X Y Z AA AB AC AD	192,920	1,574	25,610	3.1	39.9	39.9	40.9	1.0
	194,650	1,506	17,474	4.5	40.5	40.5	41.5	1.0
	196,300	924	12,254	6.5	41.8	41.8	42.6	0.8
	196,950	1,013	15,959	5.0	42.7	42.7	43.6	0.9
	197,590	947 ²	16,806	4.7	43.0	43.0	44.0	1.0
	197,640	1,486 ²	17,025	4.7	43.1	43.1	44.1	1.0
	197,840	1,778	25,829	3.1	43.5	43.5	44.5	1.0
	200,260	2,493	32,327	2.5	43.9	43.9	44.8	0.9
	202,260	3,048	35,928	2.2	44.2	44.2	45.1	0.9

FLOODING SOURCE

DISTANCE¹

CROSS SECTION

FLOODWAY

WIDTH
(FEET)

SECTION
AREA
(SQUARE
FEET)

MEAN
VELOCITY
(FEET PER
SECOND)

REGULATORY
(FEET
NAVD88)

WITHOUT
FLOODWAY
(FEET
NAVD88)

WITH
FLOODWAY
(FEET
NAVD88)

INCREASE
(FEET)

COOS COUNTY, OREGON
AND UNINCORPORATED AREAS

FEDERAL EMERGENCY MANAGEMENT AGENCY

TABLE 13

COQUILLE RIVER, SOUTH FORK COQUILLE RIVER

FLOODWAY DATA

¹Feet above mouth ²Floodway bifurcated due to re-delineation

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD88)	WITHOUT FLOODWAY (FEET NAVD88)	WITH FLOODWAY (FEET NAVD88)	INCREASE (FEET)
Millicoma River A B C	39,950	622	16,224	1.7	36.7	36.7	37.7	1.0
	43,630	300	7,306	3.7	36.7	36.7	37.7	1.0
	45,630	291	7,335	3.7	37.0	37.0	38.0	1.0
East Fork Millicoma River D E F G H I J K L M N O P	46,590	446	7,137	2.5	37.2	37.2	38.2	1.0
	48,910	317	6,198	2.9	37.5	37.5	38.5	1.0
	50,070	451	6,885	2.6	37.7	37.7	38.7	1.0
	50,670	316	5,233	3.2	37.8	37.8	38.8	1.0
	50,760	286	5,330	3.2	38.1	38.1	39.1	1.0
	50,860	289	5,335	3.1	38.2	38.2	39.2	1.0
	52,260	205	4,812	3.5	38.4	38.4	39.3	0.9
	53,700	109	4,275	3.9	38.7	38.7	39.6	0.9
	54,080	121	3,835	4.4	38.8	38.8	39.7	0.9
	54,130	142	3,835	4.4	38.8	38.8	39.7	0.9
	54,350	179	3,784	4.4	39.0	39.0	39.8	0.8
	55,190	191	3,605	4.7	39.2	39.2	40.1	0.9
	57,150	132	3,352	5.0	39.9	39.9	40.9	1.0

¹Feet above mouth

FEDERAL EMERGENCY MANAGEMENT AGENCY

TABLE 13

FLOODWAY DATA

MILLICOMA RIVER, EAST FORK MILLICOMA RIVER

FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FEET)	PRIOR STUDY WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY FLOODWAY (FEET NAVD88)	WITHOUT FLOODWAY (FEET NAVD88)	WITH FLOODWAY (FEET NAVD88)	INCREASE (FEET)
West Fork Milllicoma River	500 ¹	319		7,466	1.8	37.2	37.2	38.2	1.0
	620 ¹	259		7,221	1.8	37.2	37.2	38.2	1.0
	1,020 ¹	284		7,632	1.8	37.3	37.3	38.3	1.0
	2,620 ¹	286		9,307	1.5	37.4	37.4	38.4	1.0
	4,580 ¹	298		6,278	2.2	37.4	37.4	38.4	1.0
	7,020 ¹	327		6,501	2.1	37.6	37.6	38.6	1.0
	7,940 ¹	234		3,395	4.0	37.6	37.6	38.6	1.0
	8,140 ¹	231		3,346	4.1	37.7	37.7	38.7	1.0
	8,190 ¹	236		3,337	4.1	37.7	37.7	38.7	1.0
	8,420 ¹	219		3,175	4.3	37.8	37.8	38.8	1.0
	10,700 ¹	180		3,745	3.7	38.6	38.6	39.6	1.0
Pony Creek A-L ³	13,165 ²	N/A ⁴	25	98	4.5	12.2	12.2	13.2	1.0
	13,315 ²	66		210	2.1	12.2	12.2	12.9	0.7
	13,835 ²	81		279	1.6	12.2	12.2	13.0	0.8
	14,345 ²	42		85	4.7	12.2	12.2	12.5	0.3
	14,425 ²	36		95	4.2	12.2	12.2	12.5	0.3
	14,695 ²	29		91	4.4	12.2	12.2	12.3	0.1

¹Feet above mouth ²Feet above Coos Bay ³Floodway not shown for these cross sections due to tidal influence ⁴Due to re-delineation floodway is now outside of SFHA at this location

FEDERAL EMERGENCY MANAGEMENT AGENCY

FLOODWAY DATA

COOS COUNTY, OREGON
AND INCORPORATED AREAS

WEST FORK MILLICOMA RIVER, PONY CREEK

TABLE 13

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD88)	WITHOUT FLOODWAY (FEET NAVD88)	WITH FLOODWAY (FEET NAVD88)	INCREASE (FEET)
Pony Creek S T U V	14,985 ¹	93	144	2.8	12.6	12.6	12.7	0.1
	15,785 ¹	31	98	2.2	13.6	13.6	13.8	0.2
	16,465 ¹	40	80	2.7	14.8	14.8	15.7	0.9
	17,965 ¹	27	69	3.2	19.8	19.8	20.3	0.5
Tenmile Creek A B C D E F G H I	17,700 ²	93	1,273	3.1	21.5	21.5	22.5	1.0
	19,180 ²	350	3,260	1.2	22.3	22.3	23.3	1.0
	21,380 ²	215	2,389	1.6	22.9	22.9	23.9	1.0
	22,900 ²	812	7,235	0.5	23.1	23.1	24.1	1.0
	24,680 ²	964	6,866	0.6	23.2	23.2	24.2	1.0
	26,200 ²	127	1,577	2.5	23.4	23.4	24.4	1.0
	26,570 ²	109	1,602	2.4	23.6	23.6	24.6	1.0
	26,597 ²	112	1,602	2.4	23.7	23.7	24.7	1.0
	26,807 ²	116	1,680	2.3	23.8	23.8	24.8	1.0

¹Feet above Coos Bay ²Feet above mouth

FEDERAL EMERGENCY MANAGEMENT AGENCY

COOS COUNTY, OREGON
AND UNINCORPORATED AREAS

FLOODWAY DATA

PONY CREEK, TENMILE CREEK

TABLE 13

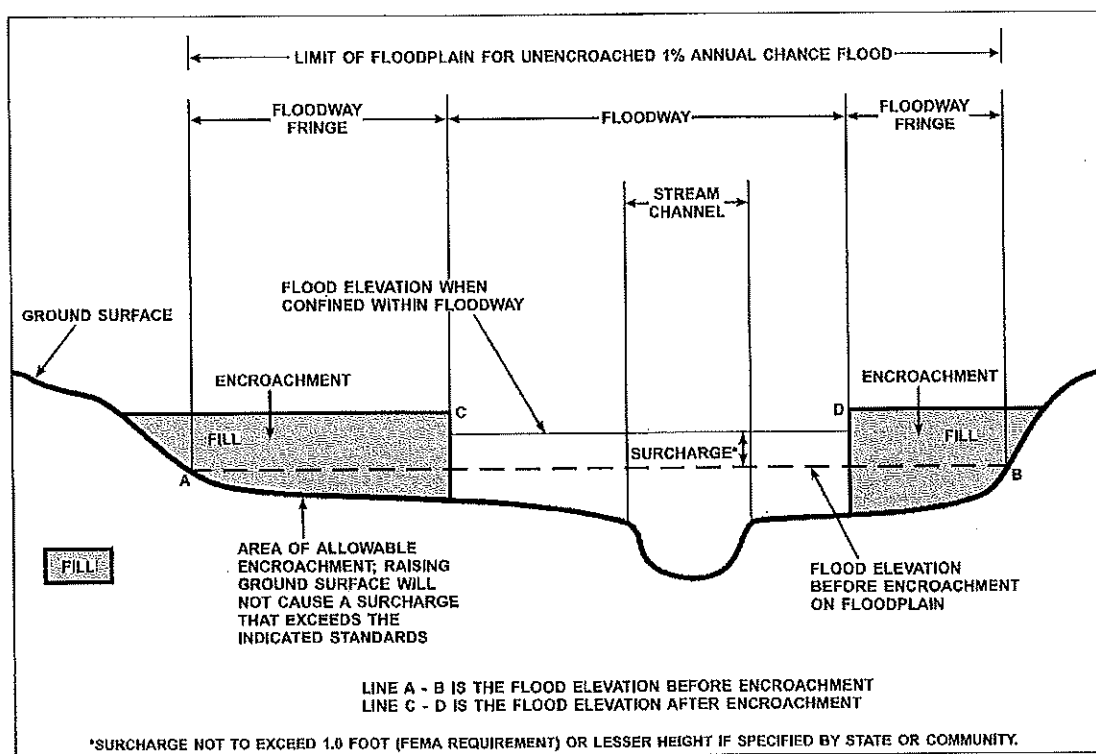


Figure 16 - Floodway Schematic

4.3 Base Flood Elevations

Areas within the community studied by detailed engineering methods have BFEs established in AE and VE Zones. These are the elevations of the 1-percent-annual-chance (base flood) relative to NAVD88. In coastal areas affected by wave action, BFEs are generally maximum at the normal open shoreline. These elevations generally decrease in a landward direction at a rate dependent on the presence of obstructions capable of dissipating the wave energy. Where possible, changes in BFEs have been shown in 1-foot increments on the FIRM. However, where the scale did not permit, 2- or 3-foot increments were sometimes used. BFEs shown in the wave action areas represent the average elevation within the zone. Current program regulations generally require that all new construction be elevated such that the first floor, including basement, is elevated to or above the BFE in AE and VE Zones.

4.4 Velocity Zones

The USACE has established the 3-foot wave height as the criterion for identifying coastal high hazard zones (USACE, 1975). This was based on a study of wave action effects on structures. This criterion has been adopted by FEMA for the determination of VE zones. Because of the additional hazards associated with high-energy waves, the NFIP regulations require much more stringent floodplain management measures in these areas, such as elevating structures on piles or piers. In addition, insurance rates in VE zones are higher than those in AE zones.

The location of the VE zone is determined by the 3-foot wave as discussed previously. The detailed analysis of wave heights performed in this study allowed a much more accurate location of the VE zone to be established. The VE zone generally extends inland to the point where the 1-percent-annual-chance stillwater flood depth is insufficient to support a 3-foot wave.

5.0 INSURANCE APPLICATIONS

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance risk zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no BFEs or base flood depths are shown within this zone.

Zone AE

Zone AE is the flood insurance risk zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS by detailed methods. In most instances, whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone V

Zone V is the flood insurance risk zone that corresponds to the 1-percent-annual-chance coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no BFEs are shown within this zone.

Zone VE

Zone VE is the flood insurance risk zone that corresponds to the 1-percent-annual-chance coastal floodplains that have additional hazards associated with storm waves. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance risk zone that corresponds to areas outside the 0.2-percent-annual-chance floodplain, areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1-percent-annual-chance flood by levees. No BFEs or base flood depths are shown within this zone.

Table 14 lists the flood insurance zones that each community is responsible for regulating.

Table 14. Flood Insurance Zones within Each Community

<u>Community</u>	<u>Flood Zone(s)</u>
Bandon, City of	A, AE, V, VE, X
Coos Bay, City of	A, AE, X
Coos County, Unincorporated Areas	A, AE, V, VE, X
Coquille, City of	A, AE, X
Lakeside, City of	A, AE, X
Myrtle Point, City of	A, AE, X
North Bend, City of	AE, X
Powers, City of	A, X

6.0 FLOOD INSURANCE RATE MAP

The FIRM is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance risk zones as described in Section 5.0 and, in the 1-percent-annual-chance floodplains that were studied by detailed methods, shows selected whole-foot BFEs or average depths. Insurance agents use the zones and BFEs in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 1- and 0.2-percent-annual-chance floodplains, floodways, and the locations of selected cross sections used in the hydraulic analyses and floodway computations.

The countywide FIRM presents flooding information for the entire geographic area of Coos County. Previously, FIRMs were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. This countywide FIRM also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps, where applicable. Historical data relating to the maps prepared for each community are presented in Table 15, "Community Map History".

7.0 OTHER STUDIES

The Federal Insurance Administration previously published Flood Hazard Boundary Maps for Coos County (U.S. Department of Housing and Urban Development, 1975), City of Bandon (U.S. Department of Housing and Urban Development, 1976), City of Coos Bay (U.S. Department of Housing and Urban Development, 1977), City of Coquille (U.S. Department of Housing and Urban Development, 1975), the City of Myrtle Point (U.S. Department of Housing and Urban Development, 1975), the City of North Bend (U.S. Department of Housing and Urban Development, 1974). The present Flood Insurance Study is more detailed and thus supersedes the earlier maps.

The USACE Tsunami Prediction Study (Garcia and Houston, 1978) was used in the coastal flood analysis.

This report either supersedes or is compatible with all previous studies published on streams studied in this report and should be considered authoritative for the purposes of the NFIP.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting FEMA, Federal Insurance and Mitigation Division, Federal Regional Center, 130 228th Street Southwest, Bothell, WA 98021-8627.

For previous versions of the FIRM Index, the Map Repository information was included on the FIRM Index itself. The map repositories are listed in Table 16 in the FIS.

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE	FIRM EFFECTIVE DATE	FIRM REVISION DATE
Bandon, City of	December 21, 1973	April 16, 1976	August 15, 1984	February 18, 1998
Coos Bay, City of	August 23, 1974	March 25, 1977	August 1, 1984	
Coos County (Unincorporated Areas)	November 1, 1974	September 6, 1977	November 15, 1984	
Confederated Tribes of the Coos, Lower Umpqua and Siuslaw ¹	November 1, 1974	September 6, 1977	November 15, 1984	
Coquille, City of	November 3, 1973	October 10, 1975	September 28, 1984	
Coquille Indian Tribe ¹	November 1, 1974	September 6, 1977	November 15, 1984	
Lakeside, City of	November 22, 1977	N/A	August 1, 1984	
Myrtle Point, City of	November 23, 1973	December 5, 1975	July 16, 1984	
North Bend, City of	June 28, 1974	July 11, 1975	August 1, 1984	
Powers, City of	November 23, 1973	October 17, 1975	June 30, 1976	

¹This community does not have map history prior to the first countywide mapping

TABLE 15

FEDERAL EMERGENCY MANAGEMENT AGENCY

**COOS COUNTY, OREGON
AND INCORPORATED AREAS**

COMMUNITY MAP HISTORY

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<u>Map</u>	<u>Date</u>	<u>Scale</u>	<u>Contour Interval in Feet</u>
Reedsport	1956	1:62,500	80
Scottsburg	1955	1:62,500	80
Ivers Peak	1955	1:62,500	80
Tyee	1955	1:62,500	80
Bandon	1942	1:62,500	50
Coquille	1942	1:62,500	50
Sitkum	1955	1:62,500	80
Camas Valley	1955	1:62,500	80
Langlois	1954	1:62,500	80
Powers	1954	1:62,500	80
Bone Mountain	1954	1:62,500	80
Dutchmen Butte	1946	1:62,500	50
Agness	1954	1:62,500	80
Marial	1954	1:62,500	80
Empire	1970	1:24,000	20
North Bend	1971	1:24,000	40
Coquille	1971	1:24,000	40
McKinley	1971	1:24,000	40
Bandon	1970	1:24,000	40
Bill Peak	1971	1:24,000	40
Myrtle Point	1971	1:24,000	40
Bridge	1971	1:24,000	40
Allegany	1971	1:24,000	40
Cape Arago	1970	1:24,000	40
Charleston	1970	1:24,000	40
Coos Bay	1971	1:24,000	40
Daniels Creek	1971	1:24,000	40
Bullards	1970	1:24,000	20
Riverton	1971	1:24,000	40

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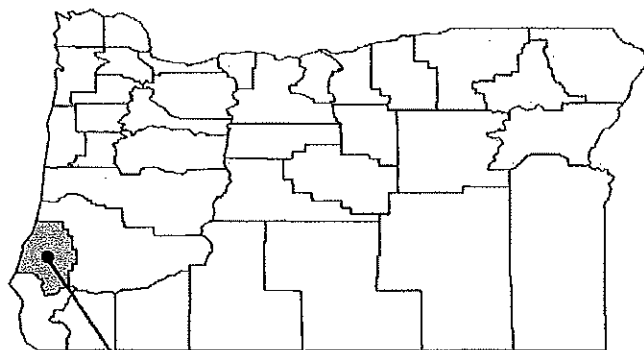
FLOOD INSURANCE STUDY

Volume 2 of 2



COOS COUNTY, OREGON AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
BANDON, CITY OF	410043
CONFEDERATED TRIBES OF COOS, LOWER UMPQUA AND SIUSLAW	410292
COOS BAY, CITY OF	410044
COOS COUNTY (UNINCORPORATED AREAS)	410042
COQUILLE, CITY OF	410045
COQUILLE INDIAN TRIBE	410102
LAKESIDE, CITY OF	410278
MYRTLE POINT, CITY OF	410047
NORTH BEND, CITY OF	410048
POWERS, CITY OF	410049



Coos County

REVISED:
DECEMBER 7, 2018



Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
41011CV002C

NOTICE TO FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) report may not contain all data available within the Community Map Repository. Please contact the Community Map Repository for any additional data.

The Federal Emergency Management Agency (FEMA) may revise and republish part or all of this FIS report at any time. In addition, FEMA may revise part of this FIS report by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS report. Therefore, users should consult with community officials and check the Community Map Repository to obtain the most current FIS report components.

Initial Countywide FIS Effective Date: September 25, 2009

Revised Countywide FIS Date: March 17, 2014
December 7, 2018

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Exhibits

Exhibit 1 - Flood Profiles

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Cunningham Creek	02P
Coquille River	03P-09P
South Fork Coquille River	10P-11P
Millacoma River	12P
East Fork Millacoma River	13P
West Fork Millacoma River	14P
Pony Creek	15P-16P
Tenmile Creek	17P-18P

Exhibit 2 - Flood Insurance Rate Map Index Flood Insurance Rate Map

**FLOOD INSURANCE STUDY
COOS COUNTY, OREGON AND INCORPORATED AREAS**

10.0 REVISION DESCRIPTIONS

10.1 First Revision

a. Authority and Acknowledgments

This Physical Map Revision (PMR) was revised to incorporate approximately 515 miles of approximate (Zone A) analyses in Coos County, Oregon, including the Cities of Bandon, Coos Bay, Coquille, Lakeside, Myrtle Point, North Bend, and Powers; the in the Unincorporated Areas of Coos County; the Coquille Indian Tribe; and the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw. The engineering for this project was initiated in 2014 by the Oregon Department of Geology and Mineral Industries (DOGAMI) and was completed by the Strategic Alliance for Risk Reduction (STARR II) in 2016 under contract HSFE60-15-D-0005.

b. Coordination

The results of the Coos County, Oregon PMR were reviewed at a meeting held on December 13, 2016, and attended by representatives of FEMA, OR DLCD, STARR, Coos County, and the Cities of Bandon, Coos Bay, Myrtle Point, and North Bend. All problems raised at that meeting have been addressed.

c. Scope of Study

The effective FIS for Coos County (FEMA, 2014) was performed by DOGAMI for FEMA under Contract No. EMS-2008-GR-0013 in 2008. Following the 2014 Coos County update, concerns were raised regarding the overall modeling approach that had been previously used for the approximate streams in the county. Items of concern included the boundary conditions, the Manning's "n" values, the bank stations, and the ineffective flow areas that had been used. For this revised countywide FIS report, an approximate hydraulic analysis was performed using HEC-RAS hydraulic software which utilized LiDAR data. The update was completed in order to revise areas of concern as well as produce flood maps for previously unstudied areas within Coos County.

d. Important Considerations

Figures 17, 18, and 19 present important considerations for using the information contained in this revised FIS report and the FIRM and is provided in response to changes in format and content.

The jurisdictions that are included in this project area, along with the Community Identification Number (CID) for each community and the USGS 8-digit Hydrologic Unit Code (HUC-8) sub-basins affecting each, are shown in Table 16. The FIRM panel numbers that affect each community are listed. If the flood hazard data for the community is not included in this FIS Report, the location of that data is identified.

Table 17 is a list of the locations where FIRMs for Coos County can be viewed. Please note that the maps at these locations are for reference only and are not for distribution. Also, please note that only the maps for the community listed in the table are available

at that particular repository. A user may need to visit another repository to view maps from an adjacent community.

Each FIRM panel may contain specific notes to the user that provide additional information regarding the flood hazard data shown on the map. However, the FIRM panel does not contain enough space to show all notes that may be relevant in helping to better understand the information on the panel. Figure 17 contains the full list of these notes.

Figure 17. FIRM Notes to Users

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at <https://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

For community and countywide map dates, refer to Table 15 in this FIS Report.

BASE FLOOD ELEVATIONS: For more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables within this FIS Report. Use the flood elevation data within the FIS Report in conjunction with the FIRM for construction and/or floodplain management.

FLOODWAY INFORMATION: Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the FIS Report for this jurisdiction.

Figure 17. FIRM Notes to Users (*continued*)

FLOOD CONTROL STRUCTURE INFORMATION: Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 4.3 "Non-Levee Flood Protection Measures" of this FIS Report for information on flood control structures for this jurisdiction.

PROJECTION INFORMATION: The projection used in the preparation of the map was Universal Transverse Mercator (UTM Zone 18). The horizontal datum was North American Datum 1983. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

ELEVATION DATUM: Flood elevations on the FIRM are referenced to North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/>

Local vertical monuments may have been used to create the map. To obtain current monument information, please contact the appropriate local community listed in Table 16 of this FIS Report.

BASE MAP INFORMATION: Base map information shown on the FIRM was provided by various sources. For information about base maps, refer to Section 6.2 "Base Map" in this FIS Report.

The map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables may reflect stream channel distances that differ from what is shown on the map.

Corporate limits shown on the map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after the map was published, map users should contact appropriate community officials to verify current corporate limit locations.

NOTES FOR FIRM INDEX

REVISIONS TO INDEX: As new studies are performed and FIRM panels are updated within Coos County, Oregon and Incorporated Areas, corresponding revisions to the FIRM Index will be incorporated within the FIS Report to reflect the effective dates of those panels. Please refer to Table 15 of this FIS Report to determine the most recent FIRM revision date for each community. The most recent FIRM panel effective date will correspond to the most recent index date.

SPECIAL NOTES FOR SPECIFIC FIRM PANELS

This Notes to Users section was created specifically for Coos County, Oregon and Incorporated Areas, effective date December 7, 2018.

Figure 17. FIRM Notes to Users *(continued)*

FLOOD RISK REPORT: A Flood Risk Report (FRR) may be available for many of the flooding sources and communities referenced in this FIS Report. The FRR is provided to increase public awareness of flood risk by helping communities identify the areas within their jurisdictions that have the greatest risks. Although non-regulatory, the information provided within the FRR can assist communities in assessing and evaluating mitigation opportunities to reduce these risks. It can also be used by communities developing or updating flood risk mitigation plans. These plans allow communities to identify and evaluate opportunities to reduce potential loss of life and property. However, the FRR is not intended to be the final authoritative source of all flood risk data for a project area; rather, it should be used with other data sources to paint a comprehensive picture of flood risk.

Each FIRM panel contains an abbreviated legend for features shown on the maps. However, the FIRM panel does not contain enough space to show the legend for all map features. Figure 18 shows the full legend of all map features. Note that not all of these features may appear on the FIRM panels in Coos County.

Figure 18. Map Legend for FIRM

SPECIAL FLOOD HAZARD AREAS: *The 1% annual chance flood, also known as the base flood or 100-year flood, has a 1% chance of happening or being exceeded each year. Special Flood Hazard Areas are subject to flooding by the 1% annual chance flood. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. See note for specific types. If the floodway is too narrow to be shown, a note is shown.*



Special Flood Hazard Areas subject to inundation by the 1% annual chance flood (Zones A, AE, AH, AO, AR, A99, V and VE)

- Zone A The flood insurance rate zone that corresponds to the 1% annual chance floodplains. No base (1% annual chance) flood elevations (BFEs) or depths are shown within this zone.
- Zone AE The flood insurance rate zone that corresponds to the 1% annual chance floodplains. Base flood elevations derived from the hydraulic analyses are shown within this zone, either at cross section locations or as static whole-foot elevations that apply throughout the zone.
- Zone AH The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the hydraulic analyses are shown at selected intervals within this zone.
- Zone AO The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the hydraulic analyses are shown within this zone.
- Zone AR The flood insurance rate zone that corresponds to areas that were formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

Figure 18. Map Legend for FIRM (continued)

Zone A99	The flood insurance rate zone that corresponds to areas of the 1% annual chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or flood depths are shown within this zone.
Zone V	The flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations are not shown within this zone.
Zone VE	Zone VE is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations derived from the coastal analyses are shown within this zone as static whole-foot elevations that apply throughout the zone.
	Regulatory Floodway determined in Zone AE.
OTHER AREAS OF FLOOD HAZARD	
	Shaded Zone X: Areas of 0.2% annual chance flood hazards and areas of 1% annual chance flood hazards with average depths of less than 1 foot or with drainage areas less than 1 square mile.
	Future Conditions 1% Annual Chance Flood Hazard – Zone X: The flood insurance rate zone that corresponds to the 1% annual chance floodplains that are determined based on future-conditions hydrology. No base flood elevations or flood depths are shown within this zone.
	Zone X Protected by Accredited Levee: Areas protected by an accredited levee, dike or other flood control structures. See Notes to Users for important information.
OTHER AREAS	
	Zone D (Areas of Undetermined Flood Hazard): The flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible Unshaded Zone X: Areas determined to be outside the 0.2% annual chance floodplain
FLOOD HAZARD AND OTHER BOUNDARY LINES	
	Flood Zone Boundary (white line)
	Limit of Study
	Jurisdiction Boundary
	Limit of Moderate Wave Action (LiMWA): Indicates the inland limit of the area affected by waves greater than 1.5 feet

Figure 18. Map Legend for FIRM (continued)

GENERAL STRUCTURES	
<div style="display: flex; align-items: center;"> <div style="border-bottom: 1px dashed black; width: 50px; margin-right: 5px;"></div> <div style="font-size: 0.8em;"> Aqueduct Channel Culvert Storm Sewer </div> </div>	Channel, Culvert, Aqueduct, or Storm Sewer
<div style="display: flex; align-items: center;"> <div style="border-bottom: 1px solid black; width: 50px; margin-right: 5px;"></div> <div style="font-size: 0.8em;"> Dam Jetty Weir </div> </div>	Dam, Jetty, Weir
<div style="display: flex; align-items: center;"> <div style="border-bottom: 1px dashed black; width: 50px; margin-right: 5px;"></div> </div>	Levee, Dike or Floodwall
<div style="display: flex; align-items: center;"> <div style="border-bottom: 1px solid black; width: 50px; margin-right: 5px; position: relative;"> <div style="position: absolute; left: -5px; top: -5px; border-left: 1px solid black; border-top: 1px solid black; width: 5px; height: 5px;"></div> <div style="position: absolute; right: -5px; top: -5px; border-right: 1px solid black; border-top: 1px solid black; width: 5px; height: 5px;"></div> </div> <div style="font-size: 0.8em;"> Bridge </div> </div>	Bridge
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AND OTHERWISE PROTECTED AREAS (OPA): CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas. See Notes to Users for important information.	
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 60px; height: 40px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px); margin-right: 10px;"></div> <div style="font-size: 0.8em;"> Coastal Barrier Resources System Area: Labels are shown to clarify where this area shares a boundary with an incorporated area or overlaps with the floodway. </div> </div>	
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 60px; height: 40px; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, black 2px, black 4px); margin-right: 10px;"></div> <div style="font-size: 0.8em;"> Otherwise Protected Area </div> </div>	
REFERENCE MARKERS	
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 15px; height: 15px; border-radius: 50%; text-align: center; line-height: 15px; margin-right: 5px;">22.0</div> <div style="font-size: 0.8em;"> River mile Markers </div> </div>	
CROSS SECTION & TRANSECT INFORMATION	
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 20px; height: 20px; border-radius: 10px; text-align: center; line-height: 20px; margin-right: 5px;">B</div> <div style="border-bottom: 1px solid black; width: 50px; margin-right: 5px;"></div> <div style="font-size: 0.8em;"> 20.2 </div> </div>	Lettered Cross Section with Regulatory Water Surface Elevation (BFE)
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 20px; height: 20px; border-radius: 10px; text-align: center; line-height: 20px; margin-right: 5px;">5280</div> <div style="border-bottom: 1px solid black; width: 50px; margin-right: 5px;"></div> <div style="font-size: 0.8em;"> 21.1 </div> </div>	Numbered Cross Section with Regulatory Water Surface Elevation (BFE)
<div style="display: flex; align-items: center;"> <div style="border-bottom: 1px solid black; width: 50px; margin-right: 5px;"></div> <div style="font-size: 0.8em;"> 17.5 </div> </div>	Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 20px; height: 20px; border-radius: 50%; text-align: center; line-height: 20px; margin-right: 5px;">8</div> <div style="border-bottom: 1px dashed black; width: 50px; margin-right: 5px;"></div> </div>	Coastal Transect

Figure 18. Map Legend for FIRM (continued)



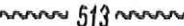










	Profile Baseline: Indicates the modeled flow path of a stream and is shown on FIRM panels for all valid studies with profiles or otherwise established base flood elevation.
	Coastal Transect Baseline: Used in the coastal flood hazard model to represent the 0.0-foot elevation contour and the starting point for the transect and the measuring point for the coastal mapping.
	Base Flood Elevation Line (shown for flooding sources for which no cross sections or profile are available)
ZONE AE (EL 16)	Static Base Flood Elevation value (shown under zone label)
ZONE AO (DEPTH 2)	Zone designation with Depth
ZONE AO (DEPTH 2) (VEL 15 FPS)	Zone designation with Depth and Velocity
BASE MAP FEATURES	
	River, Stream or Other Hydrographic Feature
	Interstate Highway
	U.S. Highway
	State Highway
	County Highway
MAPLE LANE 	Street, Road, Avenue Name, or Private Drive if shown on Flood Profile
	Railroad
	Horizontal Reference Grid Line
	Horizontal Reference Grid Ticks
	Secondary Grid Crosshairs
Land Grant	Name of Land Grant
7	Section Number
R. 43 W. T. 22 N.	Range, Township Number
4276000mE	Horizontal Reference Grid Coordinates (UTM)
365000 FT	Horizontal Reference Grid Coordinates (State Plane)
80° 16' 52.5"	Corner Coordinates (Latitude, Longitude)

Figure 19. FIRM Index

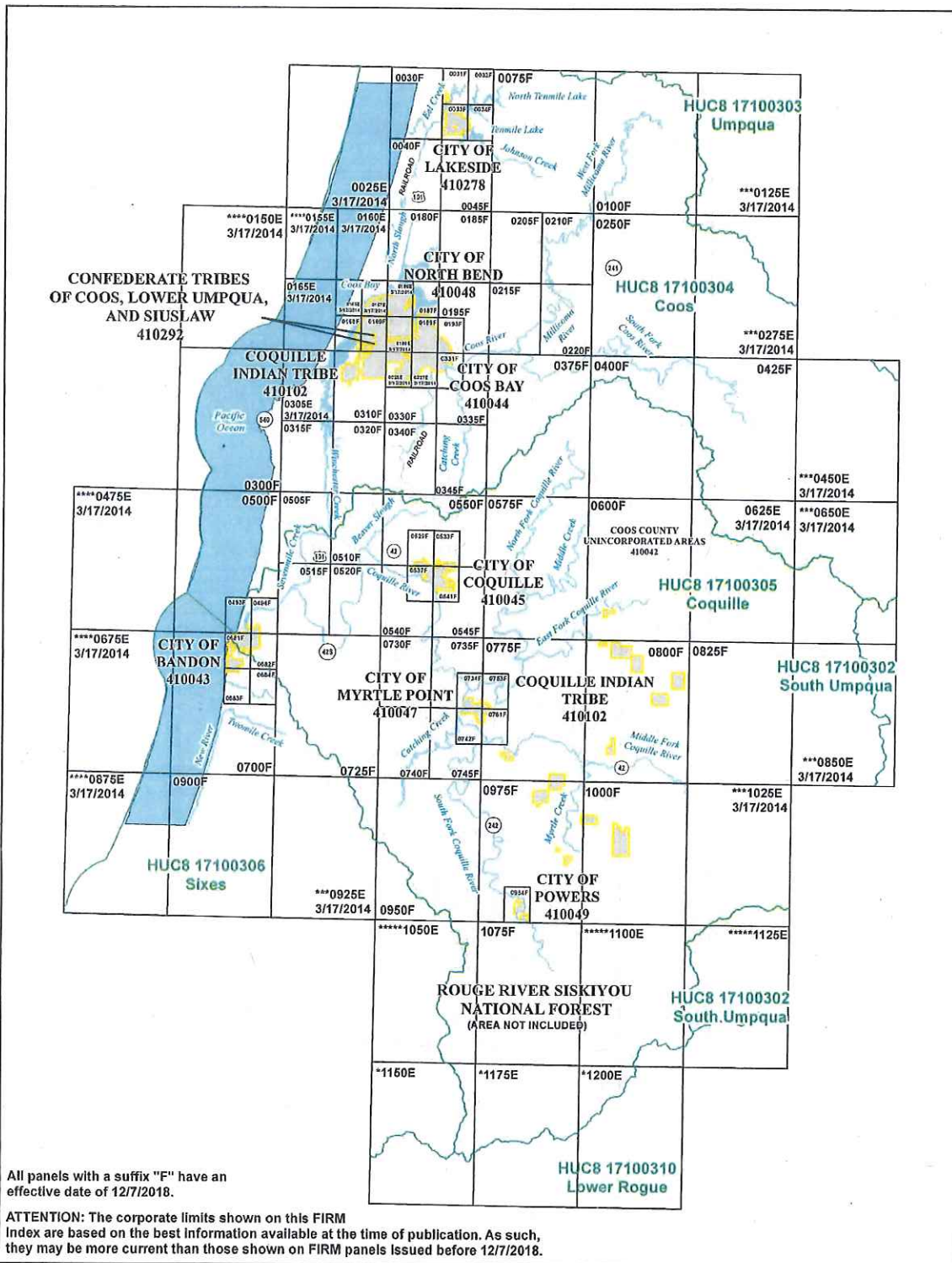


Table 16. Listing of NFIP Jurisdictions

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Bandon, City of	410043	17100305 17100306	41011C0493F, 41011C0494F, 41011C0681F, 41011C0682F, 41011C0683F	
Confederated Tribes of Coos, Lower Umpqua and Siuslaw	410292	17100304	41011C0169F, 41011C0195F, 41011C0186E, 41011C0188E, 41011C0310F	
Coos Bay, City of	410044	17100304	41011C0167E, 41011C0168F, 41011C0169F, 41011C0187F, 41011C0188E, 41011C0189F, 41011C0193F, 41011C0310F, 41011C0326E, 41011C0327E, 41011C0331F	
Coos County (Unincorporated Areas)	410042	17100302 17100303 17100304 17100305 17100306 17100310	41011C0025E, 41011C0030F, 41011C0031F, 41011C0032F, 41011C0033F, 41011C0034F, 41011C0040F, 41011C0045F, 41011C0075F, 41011C0100F, 41011C0125E*, 41011C0150E*, 41011C0155E*, 41011C0160E, 41011C0165E, 41011C0166E, 41011C0167E, 41011C0168F, 41011C0169F, 41011C0180F, 41011C0185F, 41011C0186E, 41011C0187F, 41011C0188E, 41011C0189F, 41011C0193F, 41011C0195F, 41011C0205F, 41011C0210F, 41011C0215F, 41011C0220F, 41011C0250F, 41011C0275E*, 41011C0300F, 41011C0305E, 41011C0310F, 41011C0315F, 41011C0320F, 41011C0326E, 41011C0327E, 41011C0330F, 41011C0331F, 41011C0335F, 41011C0340F, 41011C0345F, 41011C0375F, 41011C0400F, 41011C0425F, 41011C0450E*, 41011C0475E*, 41011C0493F, 41011C0494F, 41011C0500F, 41011C0505F, 41011C0510F, 41011C0515F, 41011C0520F, 41011C0529F, 41011C0533F, 41011C0537F, 41011C0540F, 41011C0541F, 41011C0545F, 41011C0550F,	

Table 16. Listing of NFIP Jurisdictions (continued)

Coos County (Unincorporated Areas) (continued)			41011C0575F, 41011C0600F, 41011C0625E, 41011C0650E*, 41011C0675E*, 41011C0681F, 41011C0682F, 41011C0683F, 41011C0684F, 41011C0700F, 41011C0725F, 41011C0730F, 41011C0734F, 41011C0735F, 41011C0740F, 41011C0742F, 41011C0745F, 41011C0753F, 41011C0761F, 41011C0775F, 41011C0800F, 41011C0825F, 41011C0850E*, 41011C0875E*, 41011C0900F, 41011C0925E*, 41011C0950F, 41011C0964F, 41011C0975F, 41011C1000F, 41011C1025E*, 41011C1050E*, 41011C1075F, 41011C1100E*, 41011C1125E*, 41011C1150E*, 41011C1175E*, 41011C1200E*	
Coquille, City of	410045	17100305	41011C0529F, 41011C0533F, 41011C0537F, 41011C0541F	
Coquille Indian Tribe	410102	17100304 17100305	41011C0168F, 41011C0169F, 41011C0188E, 41011C0189F, 41011C0310F, 41011C0600F, 41011C0681F, 41011C0775F, 41011C0800F, 41011C0975F, 41011C1000F	
Lakeside, City of	410278	17100304	41011C0030F, 41011C0031F, 41011C0033F, 41011C0034F	
Myrtle Point, City of	410047	17100305	41011C0734F, 41011C0742F, 41011C0753F, 41011C0761F	
North Bend, City of	410048	17100304	41011C0167E, 41011C0169F, 41011C0186E, 41011C0187F, 41011C0188E, 41011C0189F	
Powers, City of	410049	17100305	41011C0964F	

*Panel not printed

Table 17. Map Repositories

Community	Address	City	State	Zip Code
Bandon, City of	City Hall, 555 Highway 101	Bandon	OR	97411
Confederated Tribes of Coos, Lower Umpqua and Siuslaw	Tribal Headquarters, 1245 Fulton Avenue	Coos Bay	OR	97420
Coos Bay, City of	City Hall, 500 Central Avenue	Coos Bay	OR	97420
Coos County (Unincorporated Areas)	Coos County Courthouse, 250 North Baxter Street	Coquille	OR	97423
Coquille, City of	City Hall, 851 North Central Boulevard	Coquille	OR	97423
Coquille Indian Tribe	Administration Building, 3050 Tremont Avenue	North Bend	OR	97459
Lakeside, City of	City Hall, 915 North Lake Road	Lakeside	OR	97449
Myrtle Point, City of	City Hall, 424 5 th Street	Myrtle Point	OR	97458
North Bend, City of	City Hall, 835 California Street	North Bend	OR	97459
Powers, City of	City Hall, 275 Fir Street	Powers	OR	97466

e. Flood Protection Measures

According to the National Levee Database, there are no levees in Coos County that have been demonstrated by the community or levee owner(s) to meet the requirements of 44 CFR Part 65.10 of the NFIP regulations, as it relates to the levee's capacity to provide 1% annual chance flood protection. Please refer to the Notice to Flood Insurance Study Users page at the front of this FIS report for more information.

f. Hydrology

DOGAMI estimated the discharges that were used for the model, except for the Coquille River between the cities of Riverton and Myrtle Point, where effective discharges were available for a detailed portion of study located within the area of approximate study.

Portions of the Coquille River were previously mapped as Zone A, and detailed (Zone AE) study on the effective FIRM, with considerable differences in the discharges for the Zone A and Zone AE reaches. Because of these differences, water surface elevations did not match at the tie-in areas between these reaches. In order to resolve the discrepancies, the Set Water Surface Elevation option was used in the HEC-RAS models in order to match the water surface elevations.

g. Hydraulics

The hydraulic model used for this flood study was the USACE Hydraulic Engineering Center River Analysis System (HEC-RAS), version 4.1.0 (USACE, 2010). Steady flow HEC-RAS models were developed for the 50-, 20-, 10-, 4-, 2-, 1-, and 0.2-percent-annual-chance-flood events.

Topographic data for the floodplain models was developed using LiDAR data from Oregon Department of Geology and Mineral Industries (Oregon LiDAR Consortium, 2009). Topographic data was converted into 1-meter and 3-meter digital elevation models (DEM). The data is in UTM Zone 10 coordinates system, (units feet), horizontal datum NAD83, vertical datum NAVD 88, (units feet). No field survey data was used in this analysis.

The downstream starting water-surface elevations in the HEC-RAS models were estimated assuming normal depth.

Stream and valley cross sections were placed at representative locations along the stream centerline perpendicular to the flow direction. Cross section spacing varied for all streams. Cross section geometries were obtained from the DEM topography.

Use of ineffective flow areas were limited for this analysis. Ineffective flow areas were used only for areas of extreme expansion and contraction, and for areas of divided flow.

For this analysis, Manning's "n" values of 0.03-0.04 were used for channel areas, and 0.05-0.12 were used on overbank areas.

Expansion and contraction values of 0.1 and 0.03 were used at all cross sections in this analysis.

h. Letters of Map Revision

There were no Letters of Map Change (LOMCs) incorporated during this processing of this PMR.

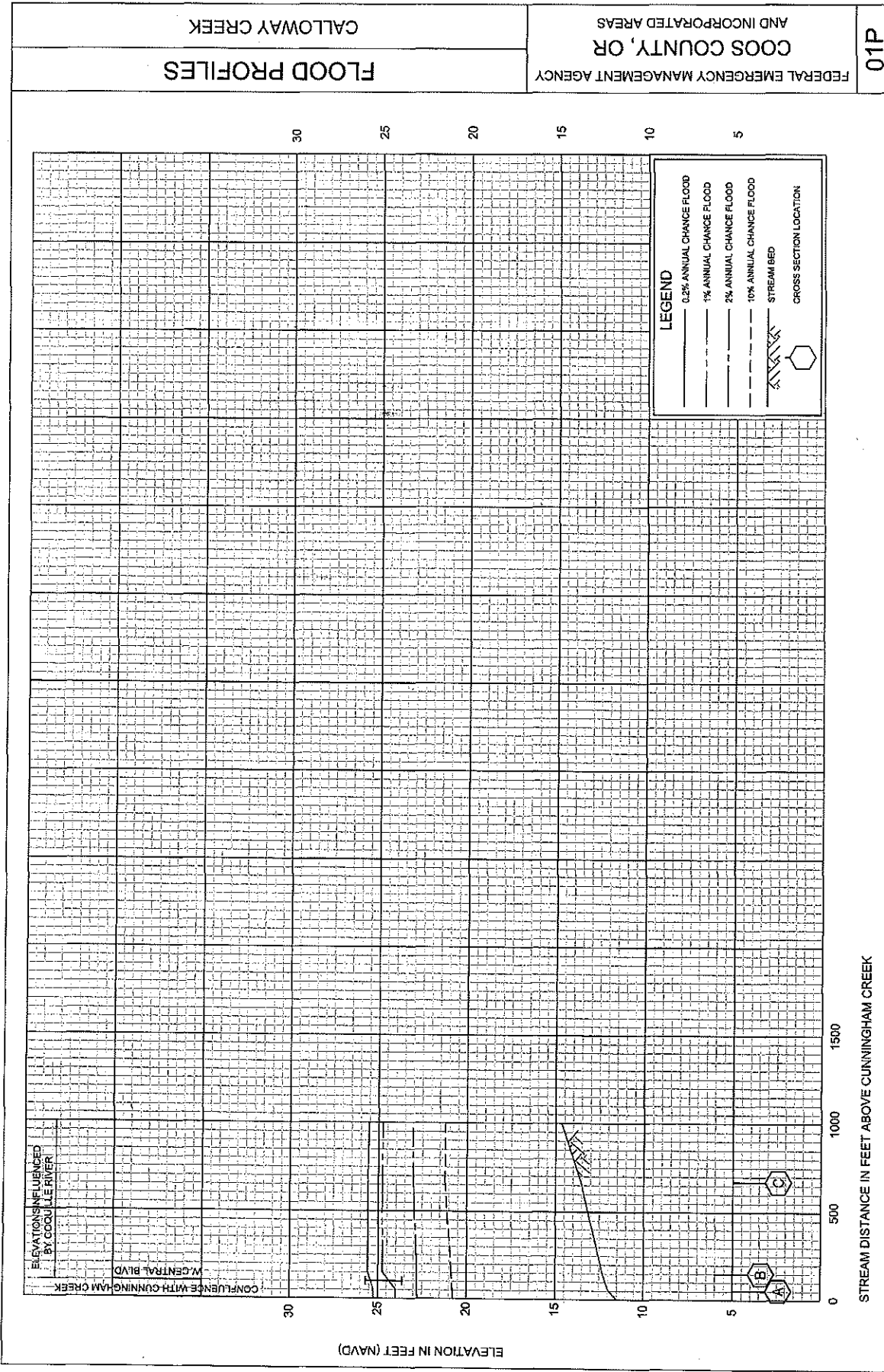
i. Bibliography for the First Revision

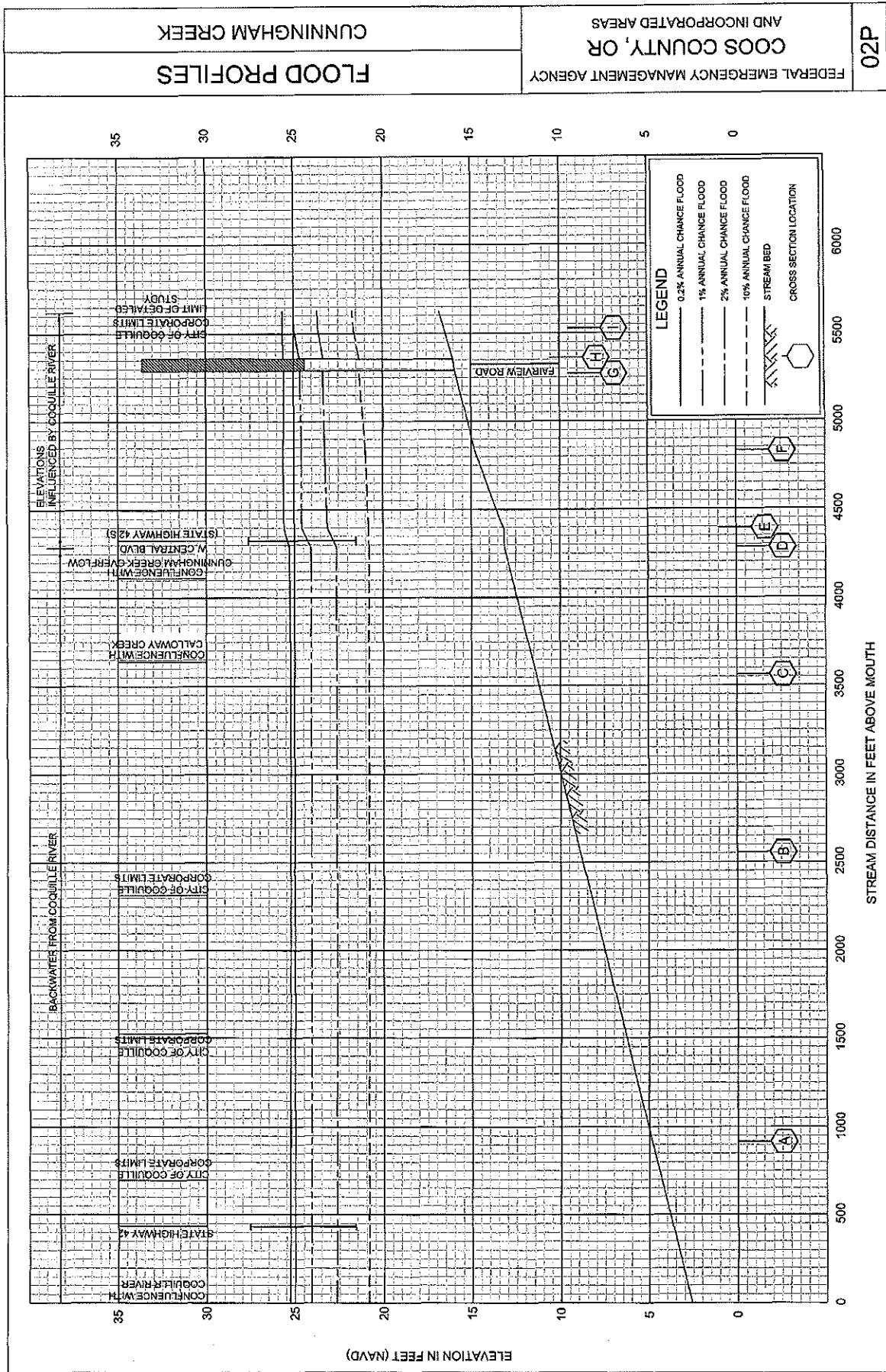
Federal Emergency Management Agency, Flood Insurance Study, Coos County, OR and Incorporated Areas, March 17, 2014.

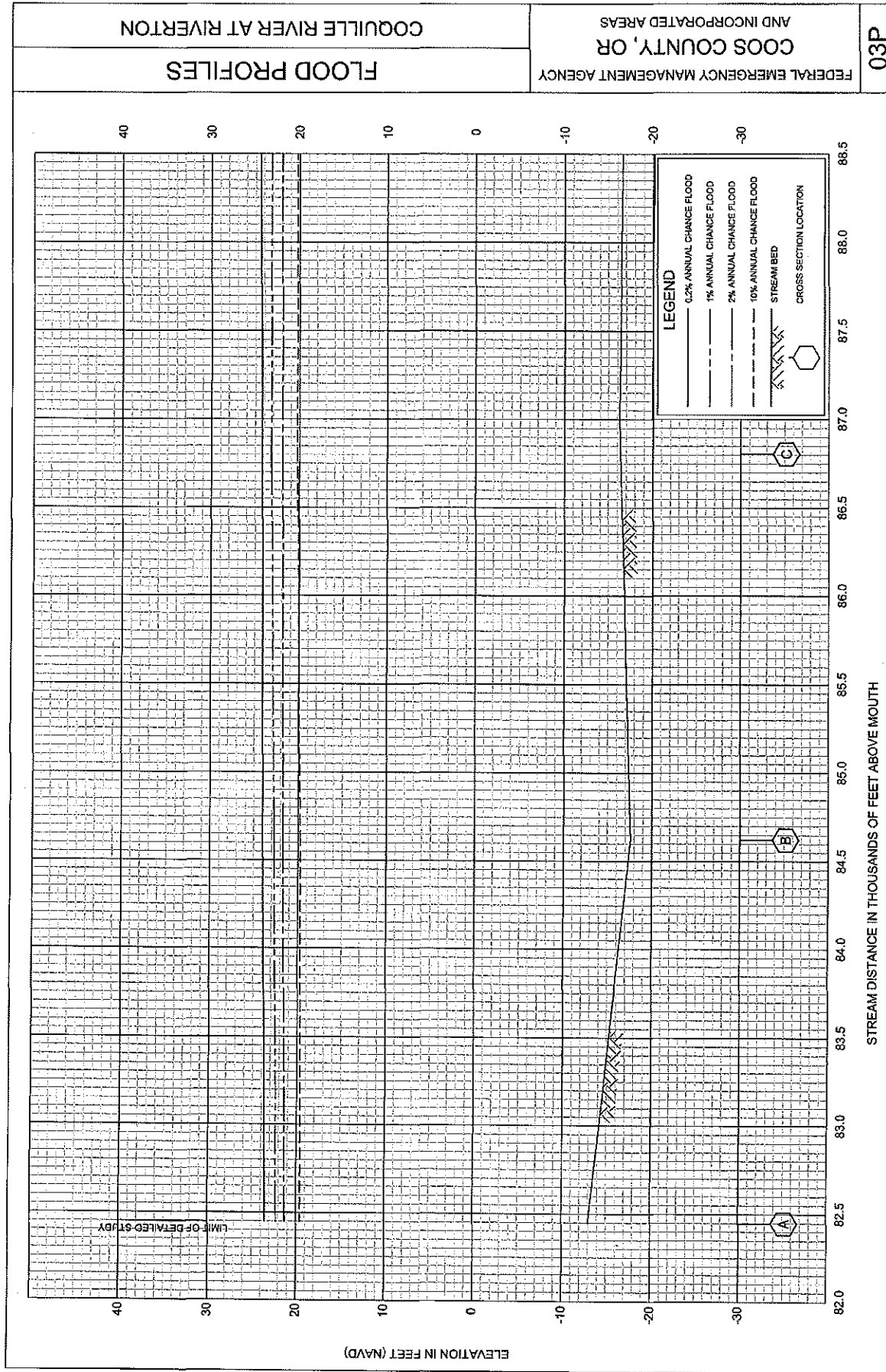
Federal Emergency Management Agency, Guidelines and Specifications for Flood Hazard Mapping Partners, U.S. Department of Homeland Security, November, 2009.

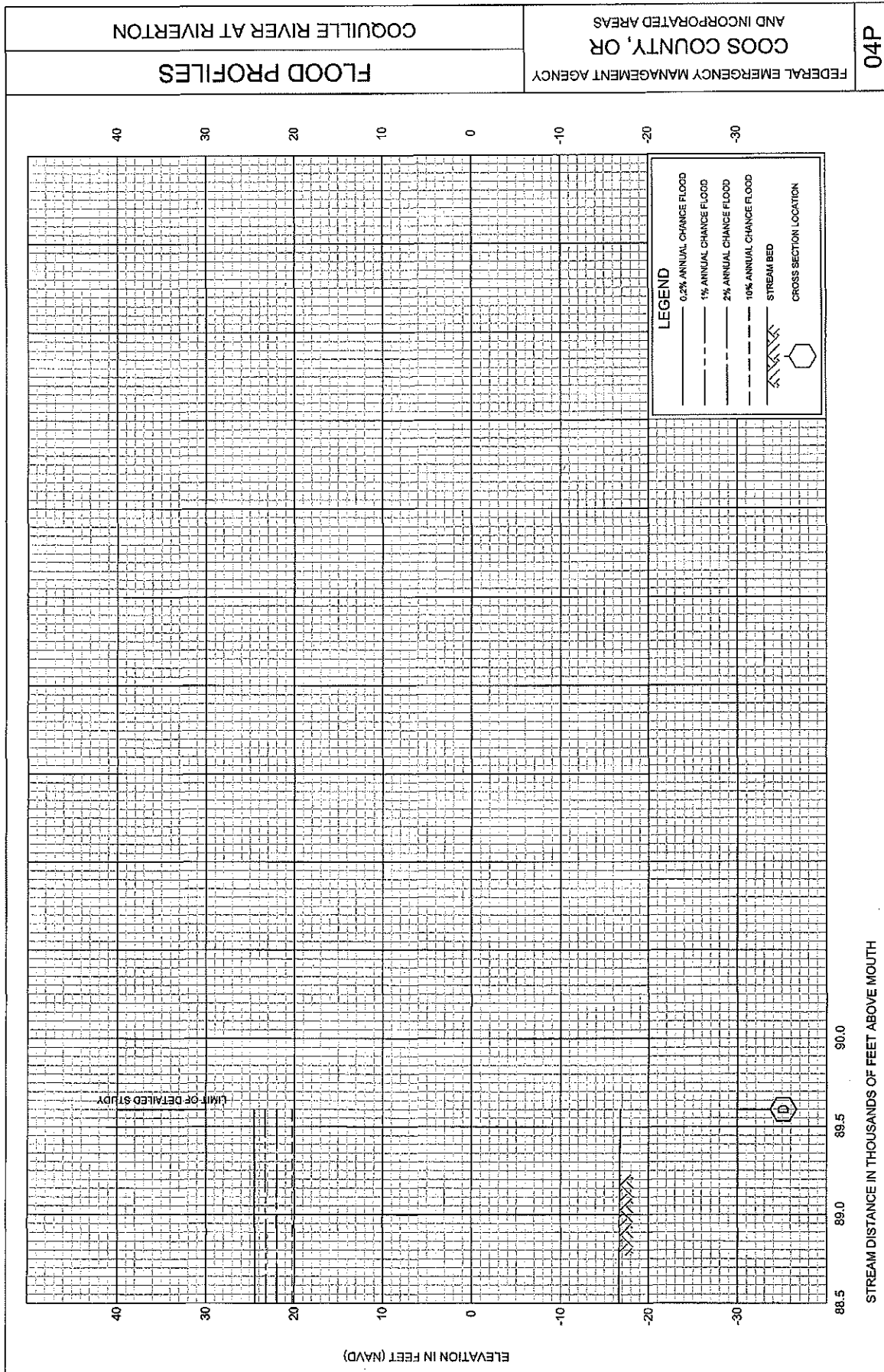
Hydrologic Engineering Center, HEC-RAS River Analysis System, Version 4.1, U.S. Army Corps of Engineers, Davis, California, Jan 2010.

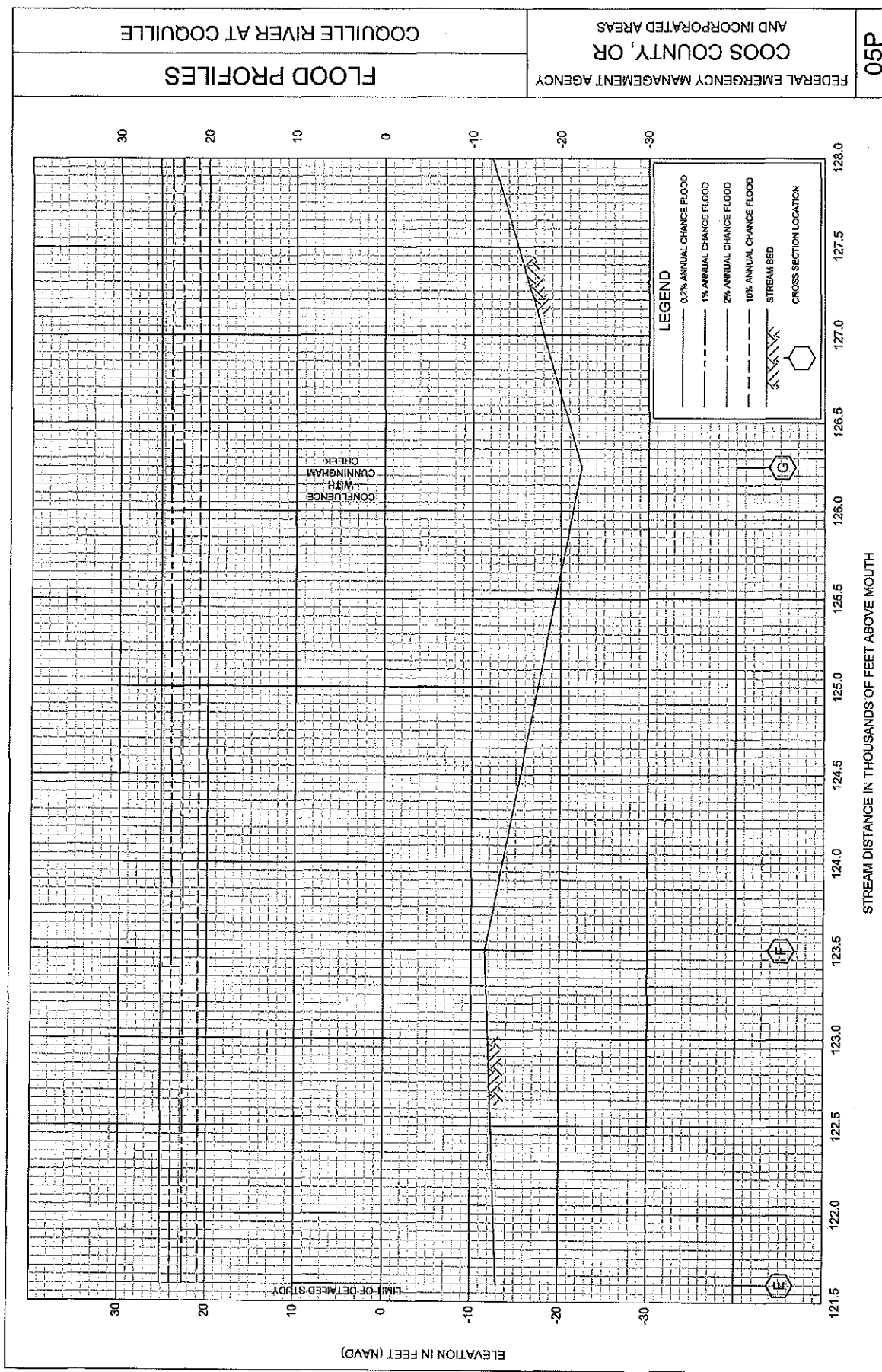
Oregon LiDAR Consortium, 1-Meter Resolution Bare Earth LiDAR Digital Elevation Models for Coos County, Oregon South Coast Project, Acquired June-August 2008, May 2009.

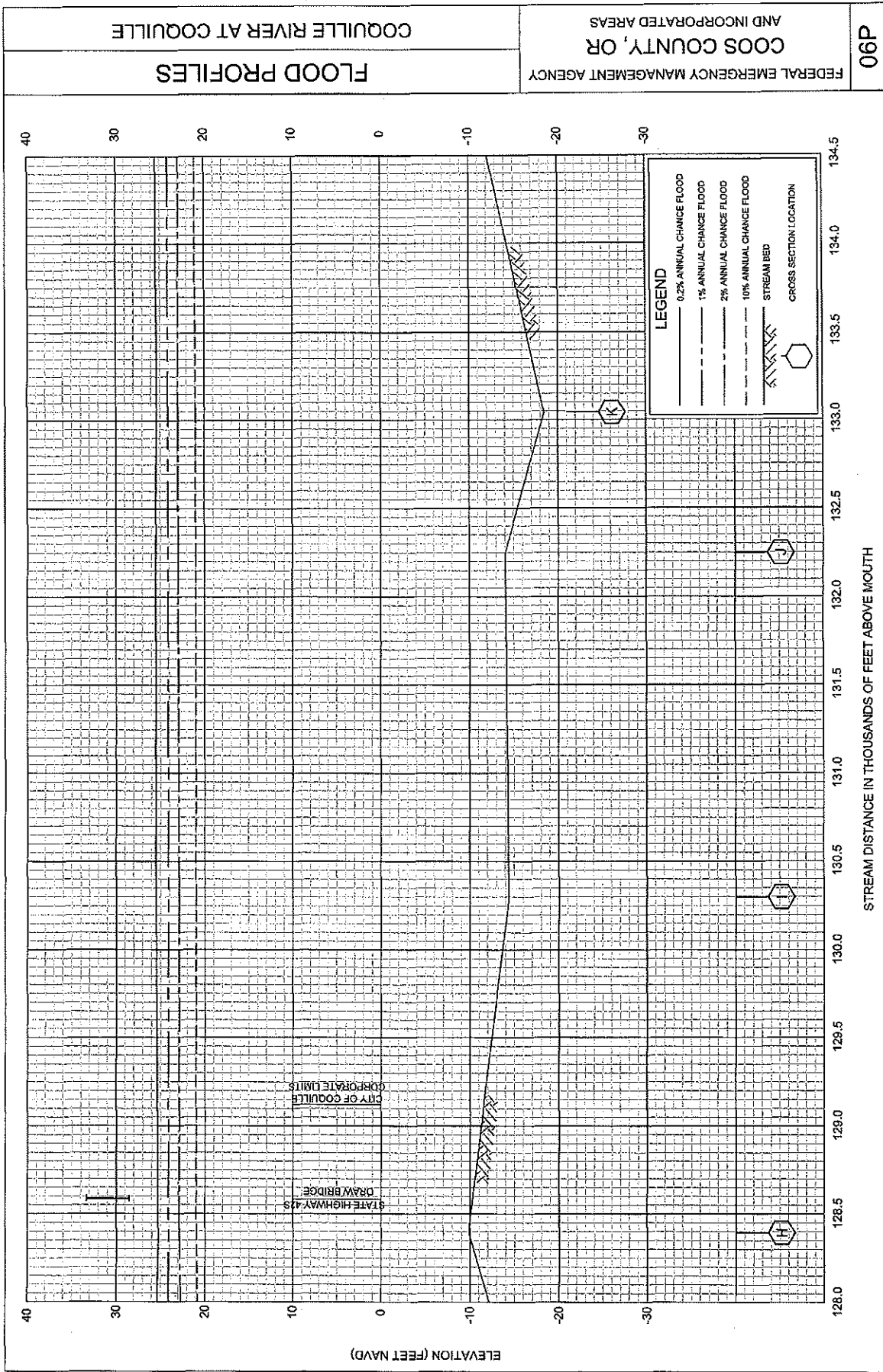


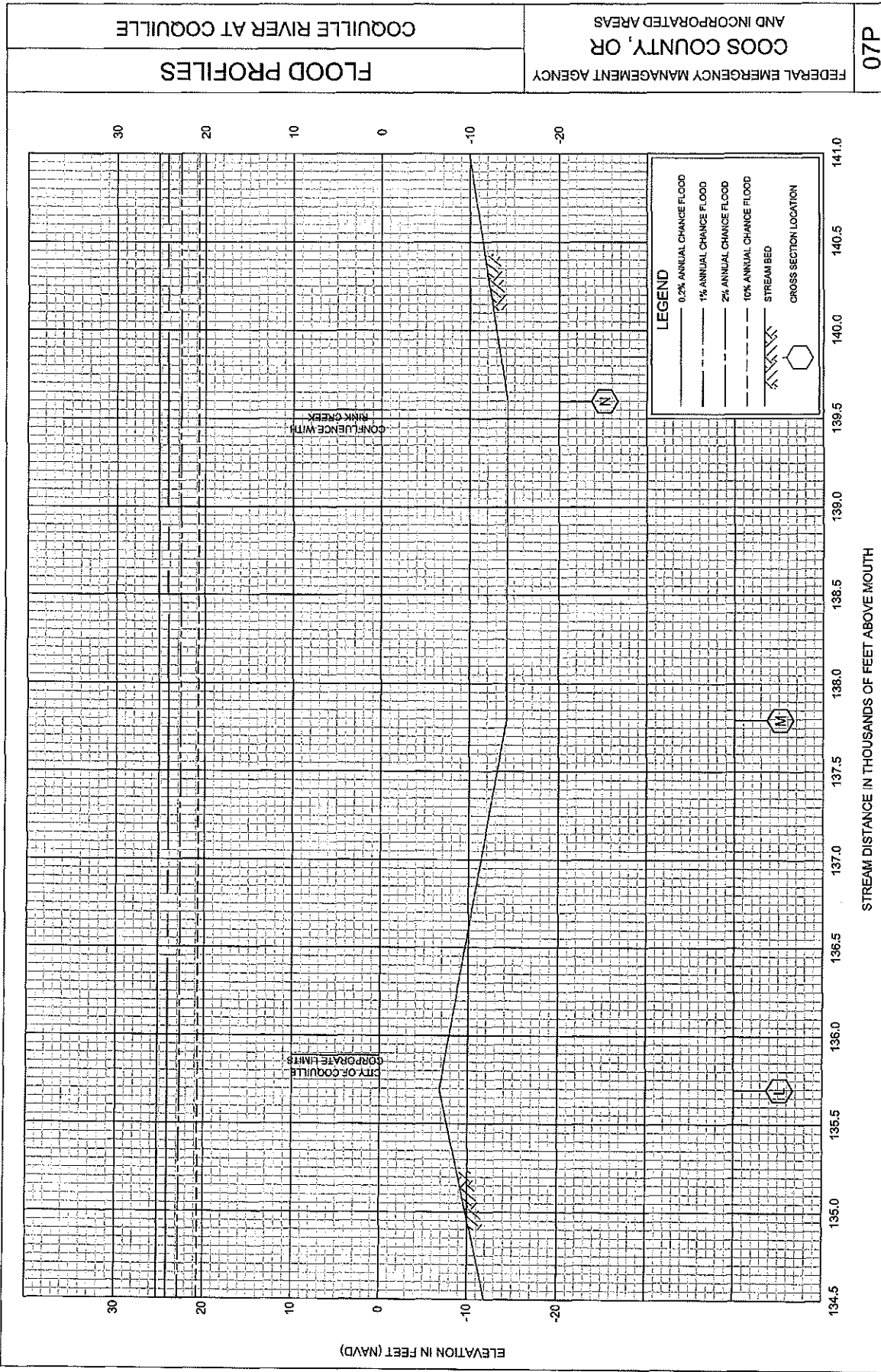


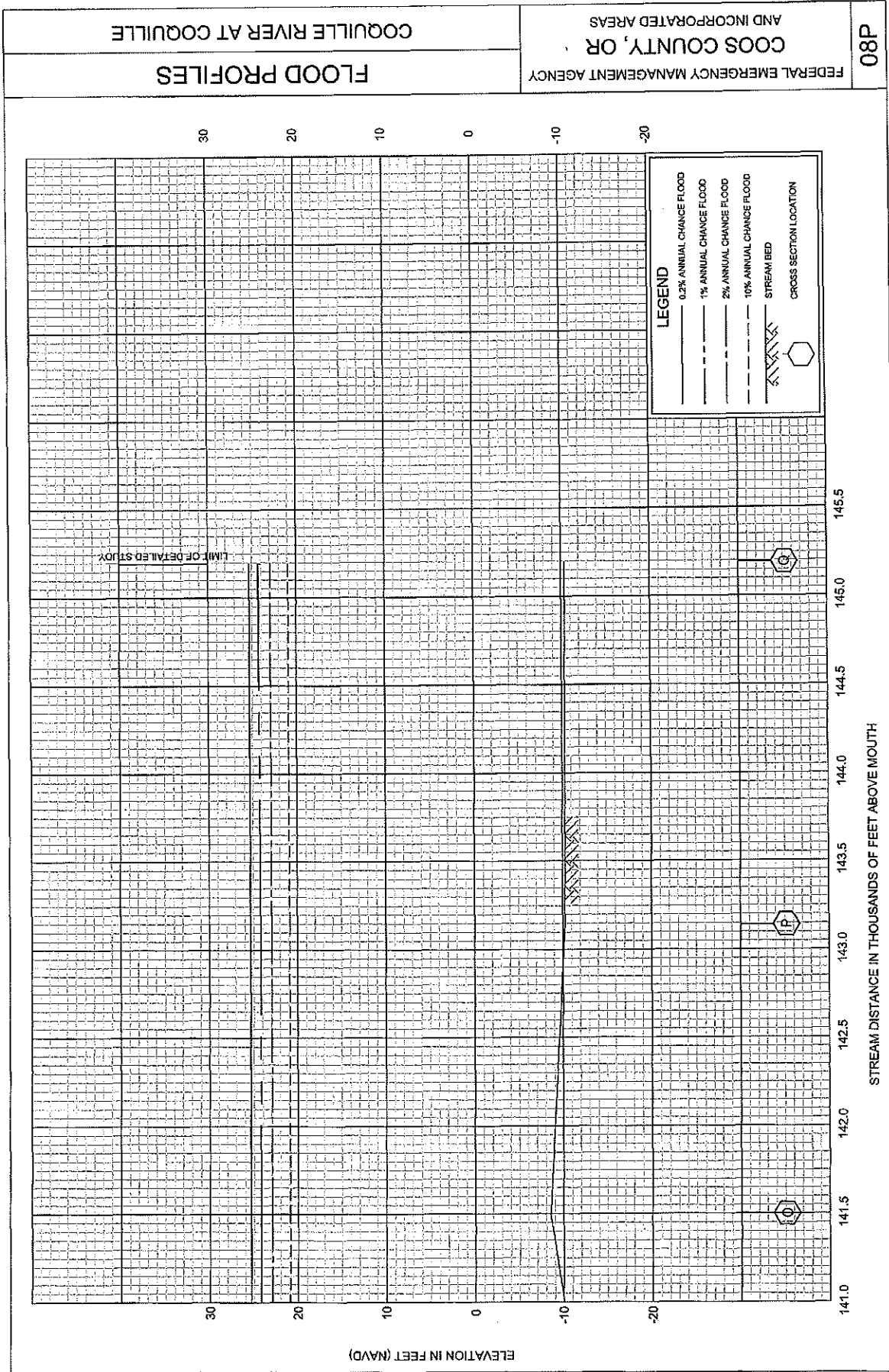


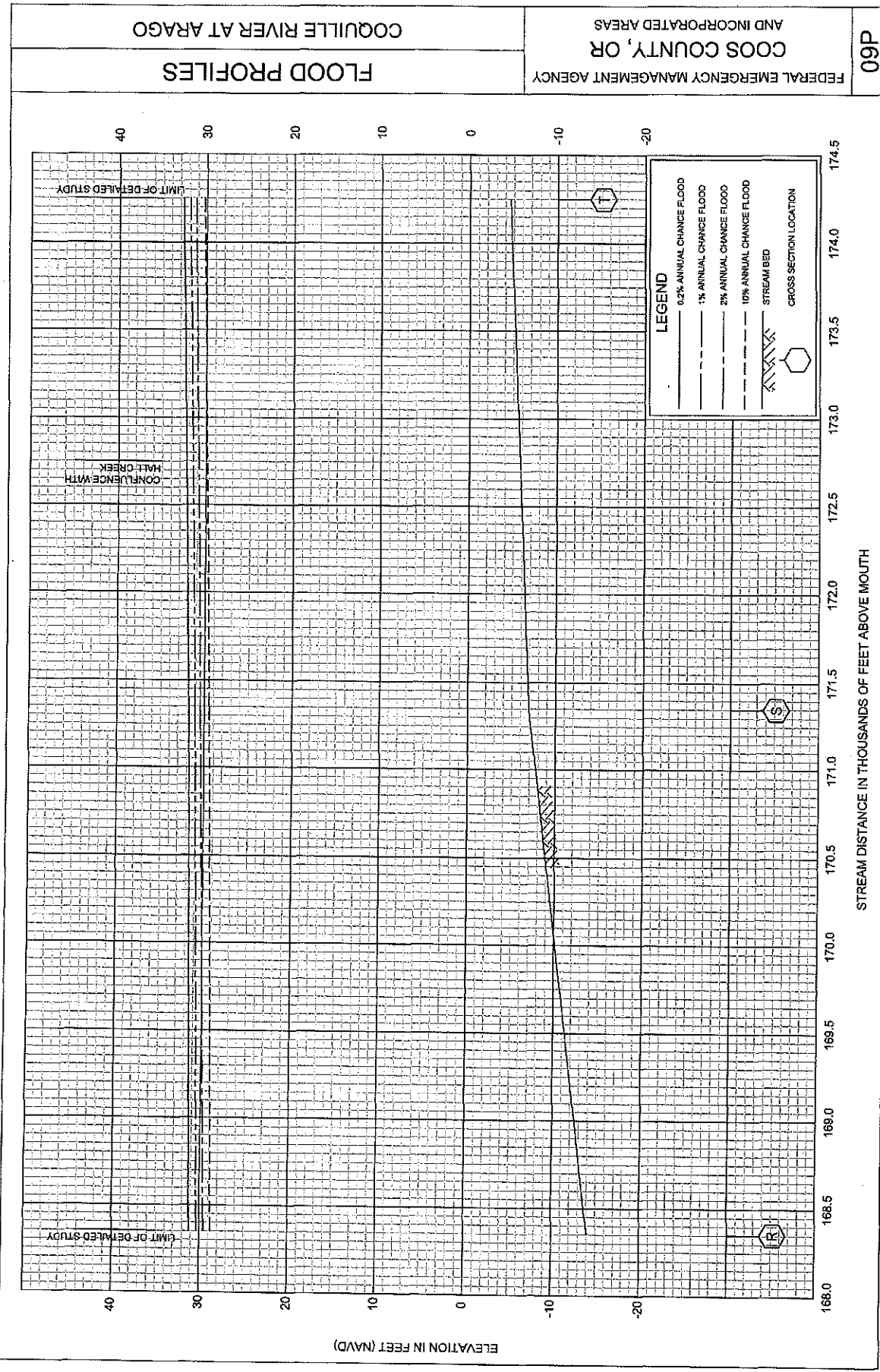


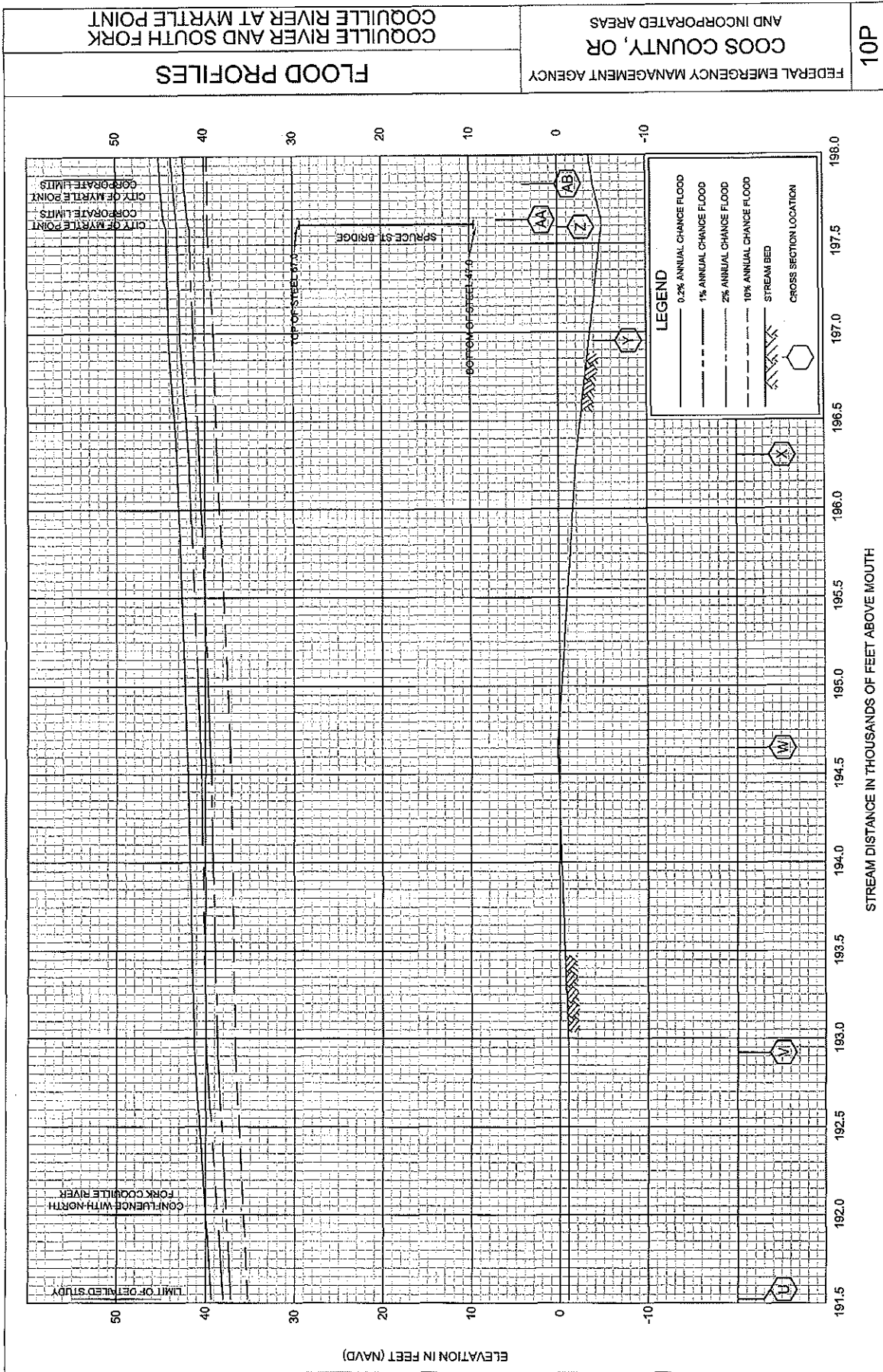


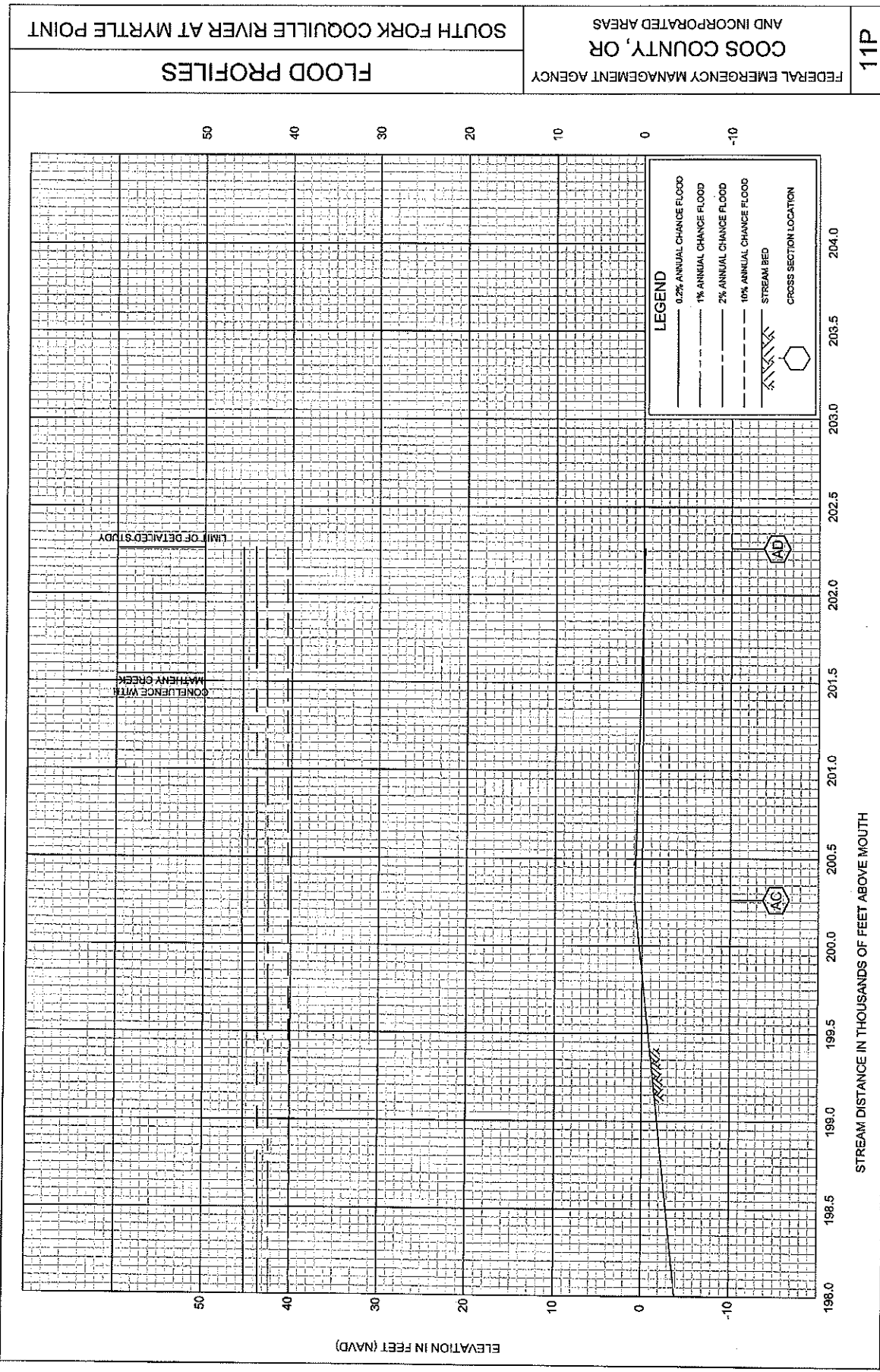


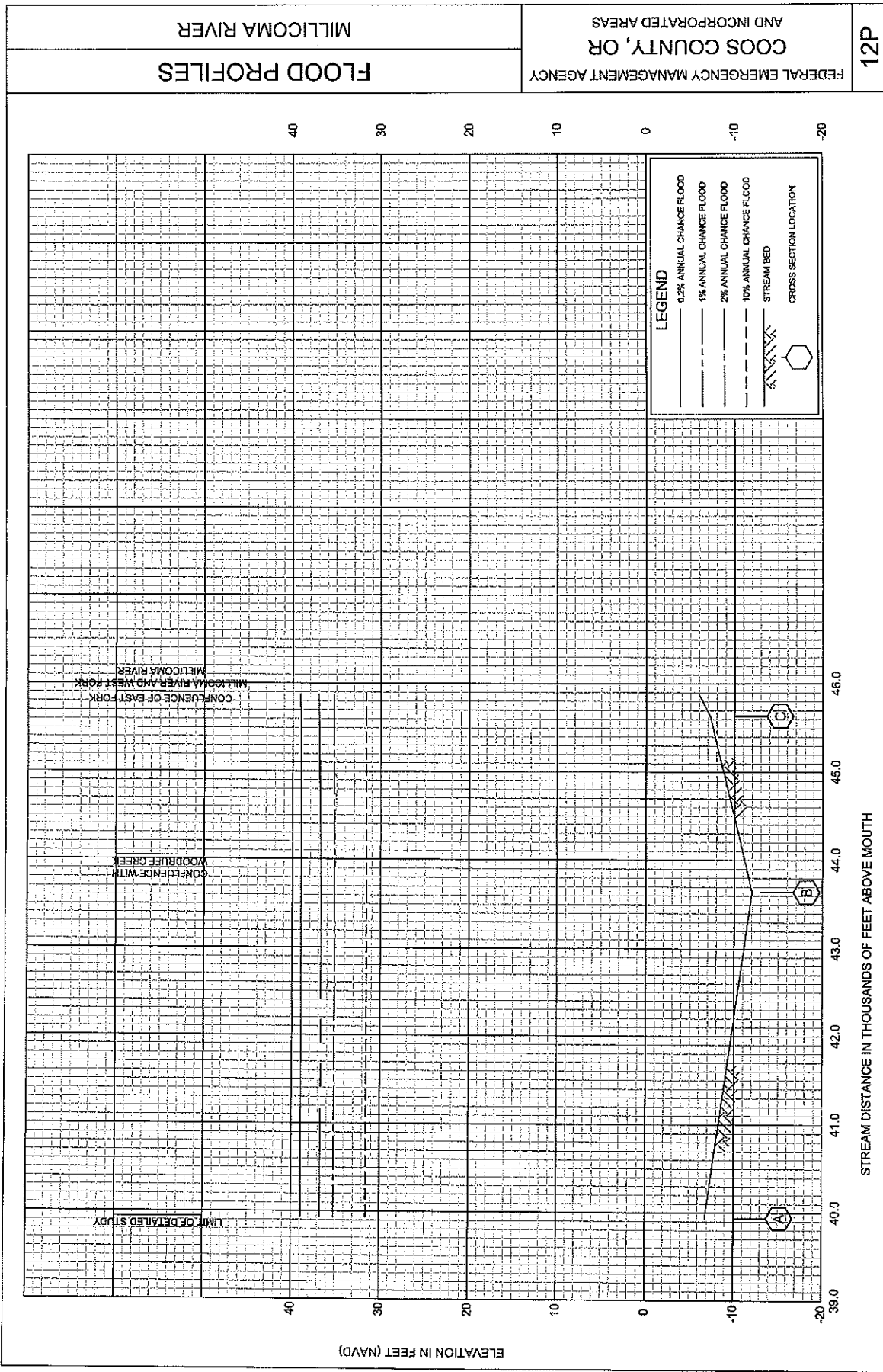


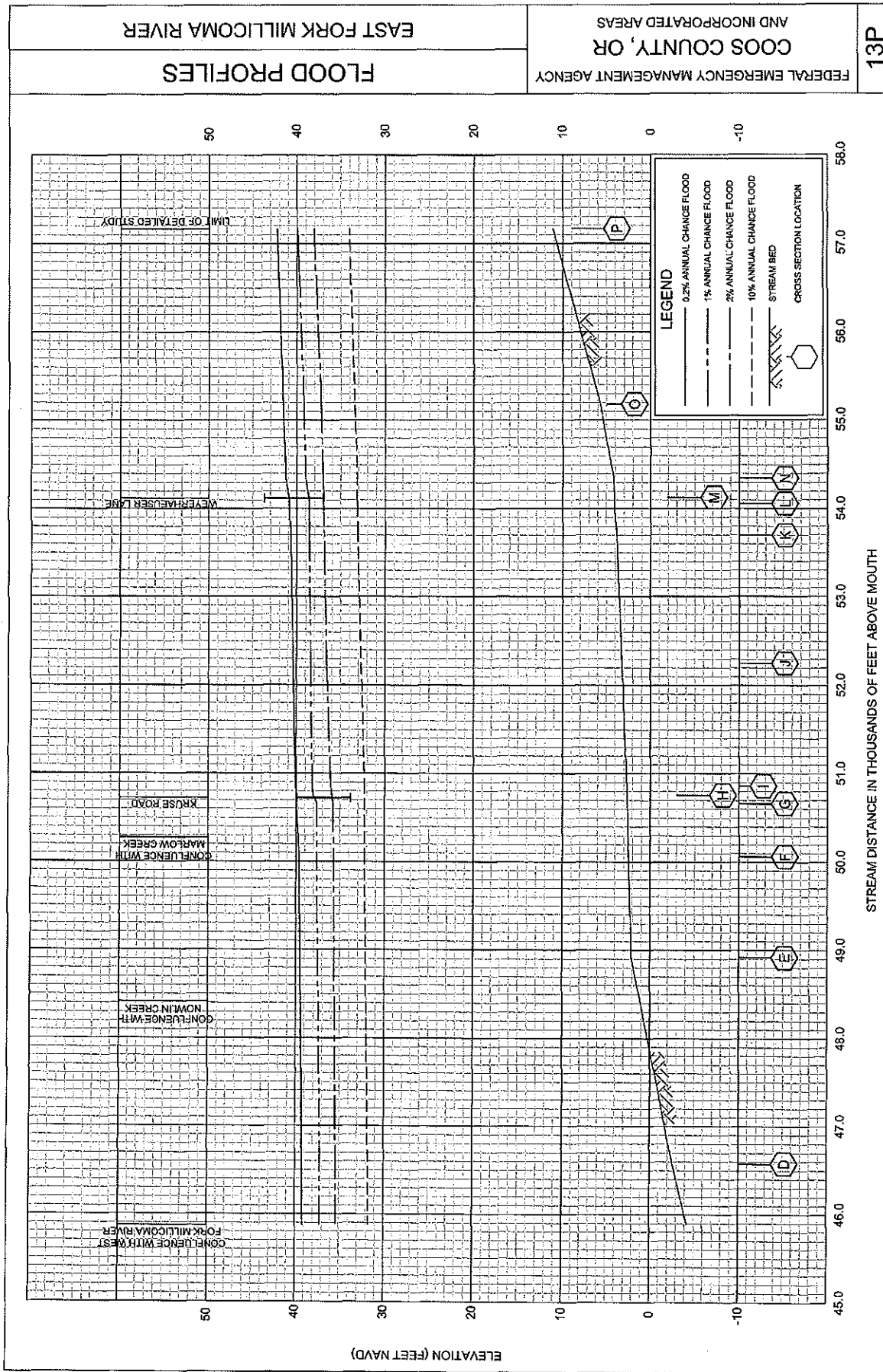


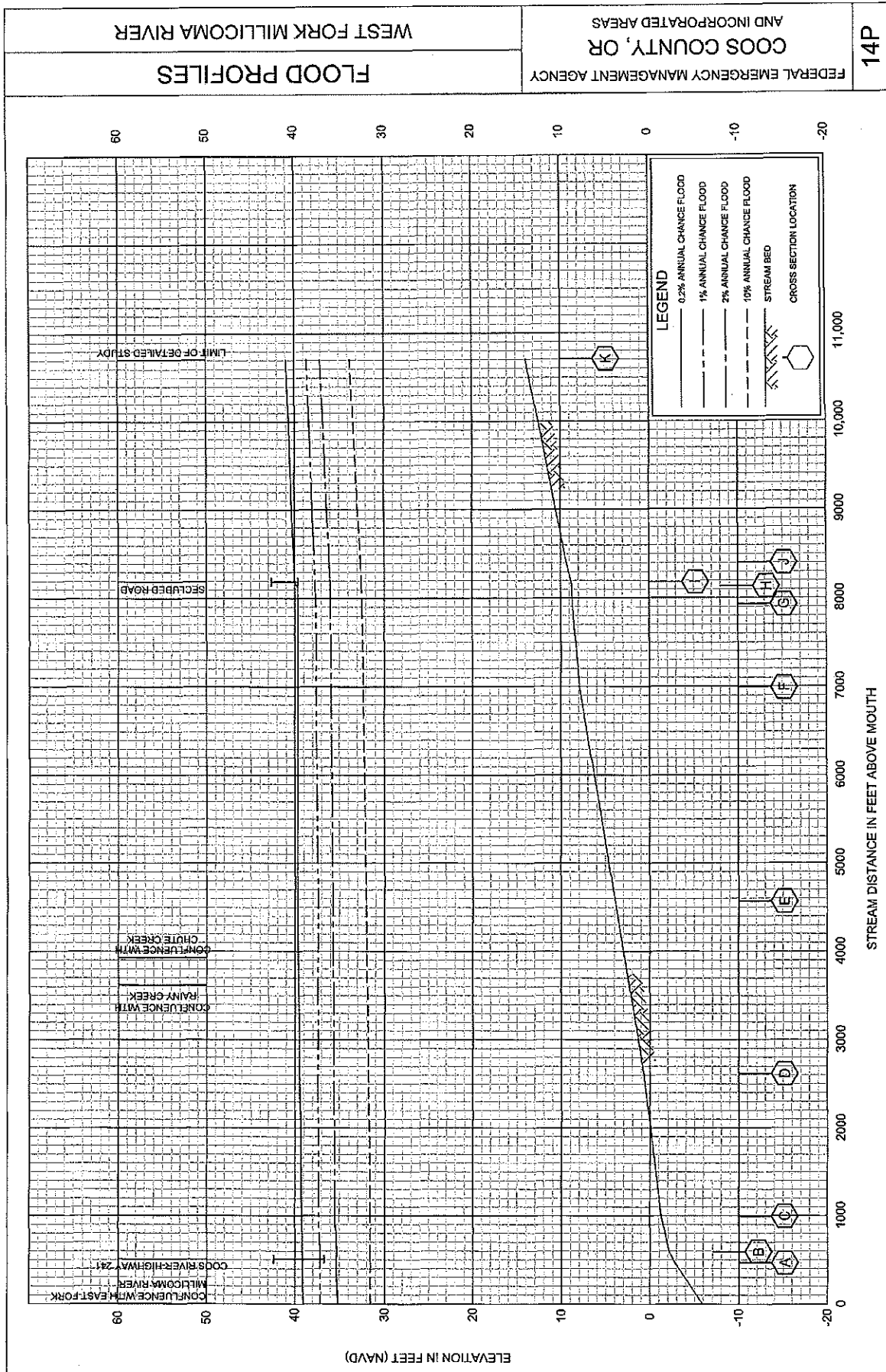


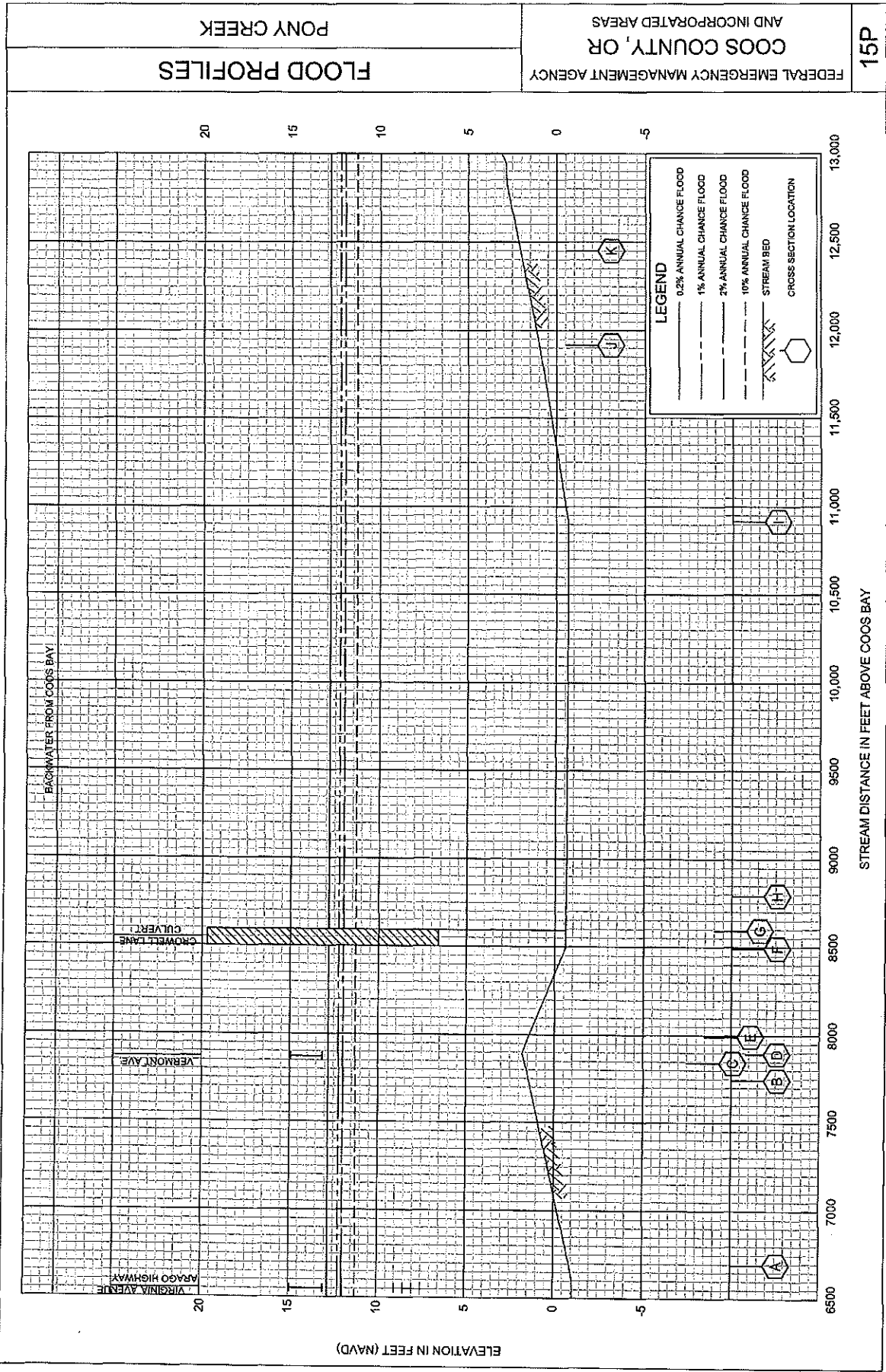


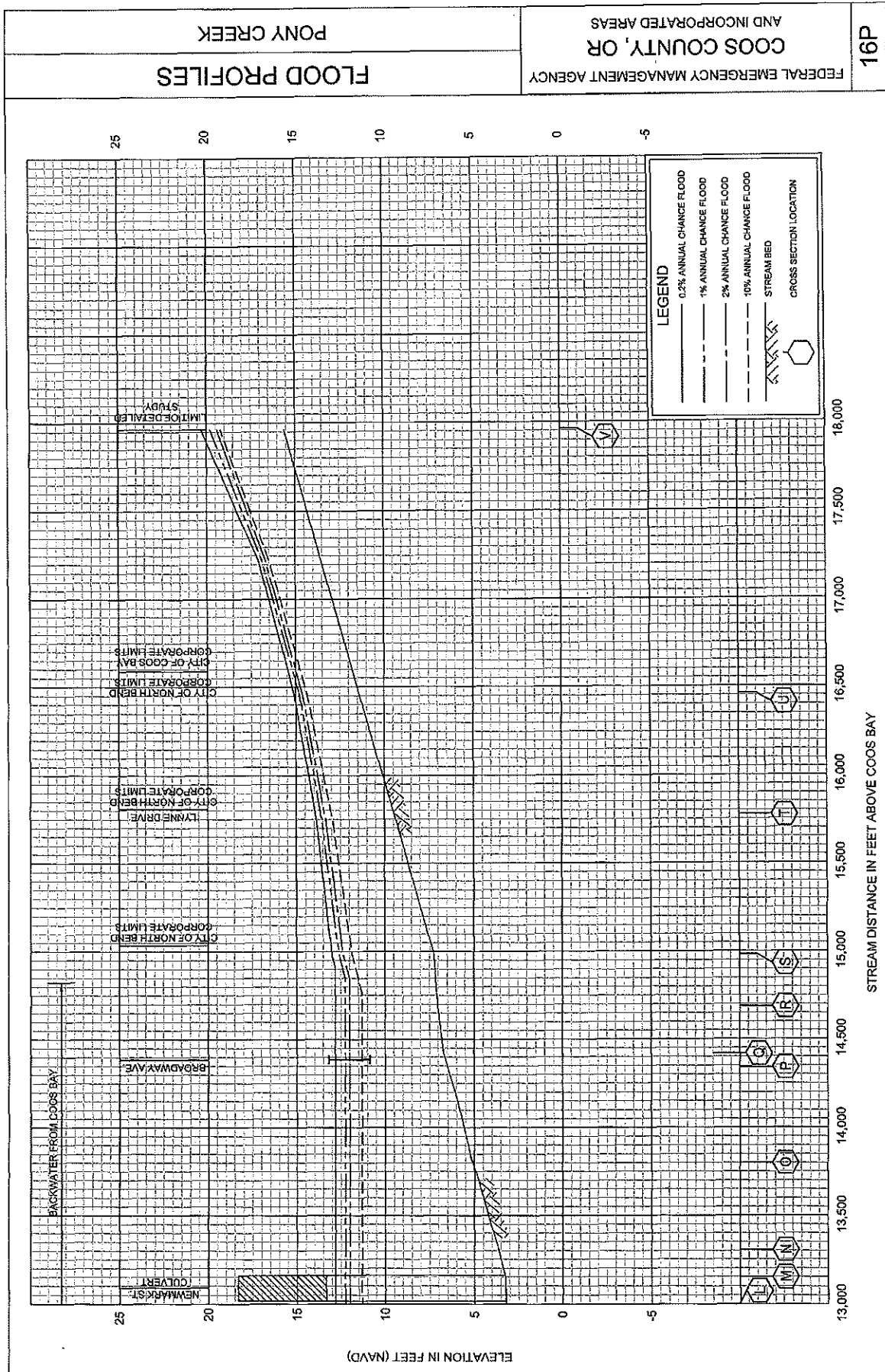


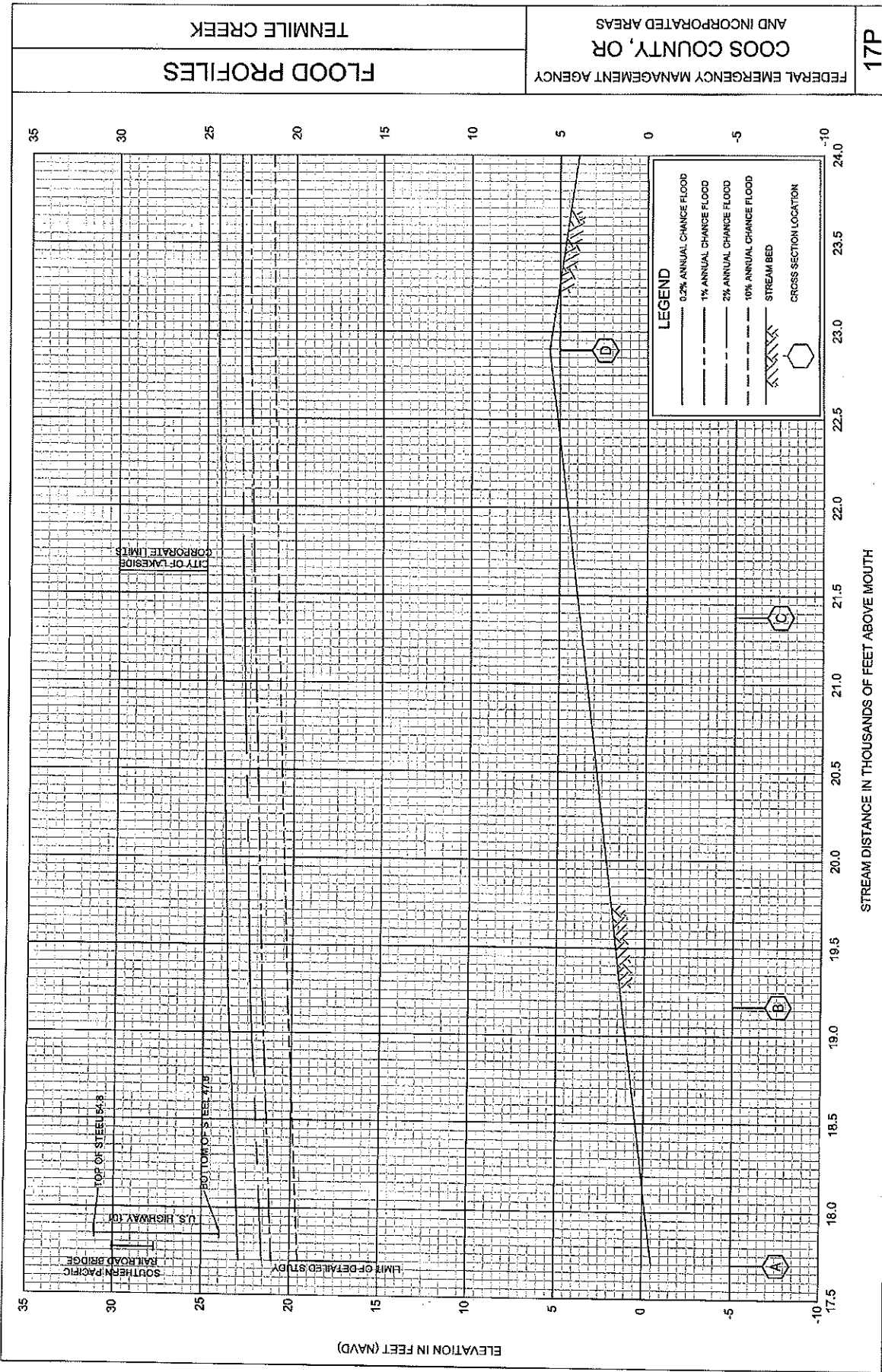


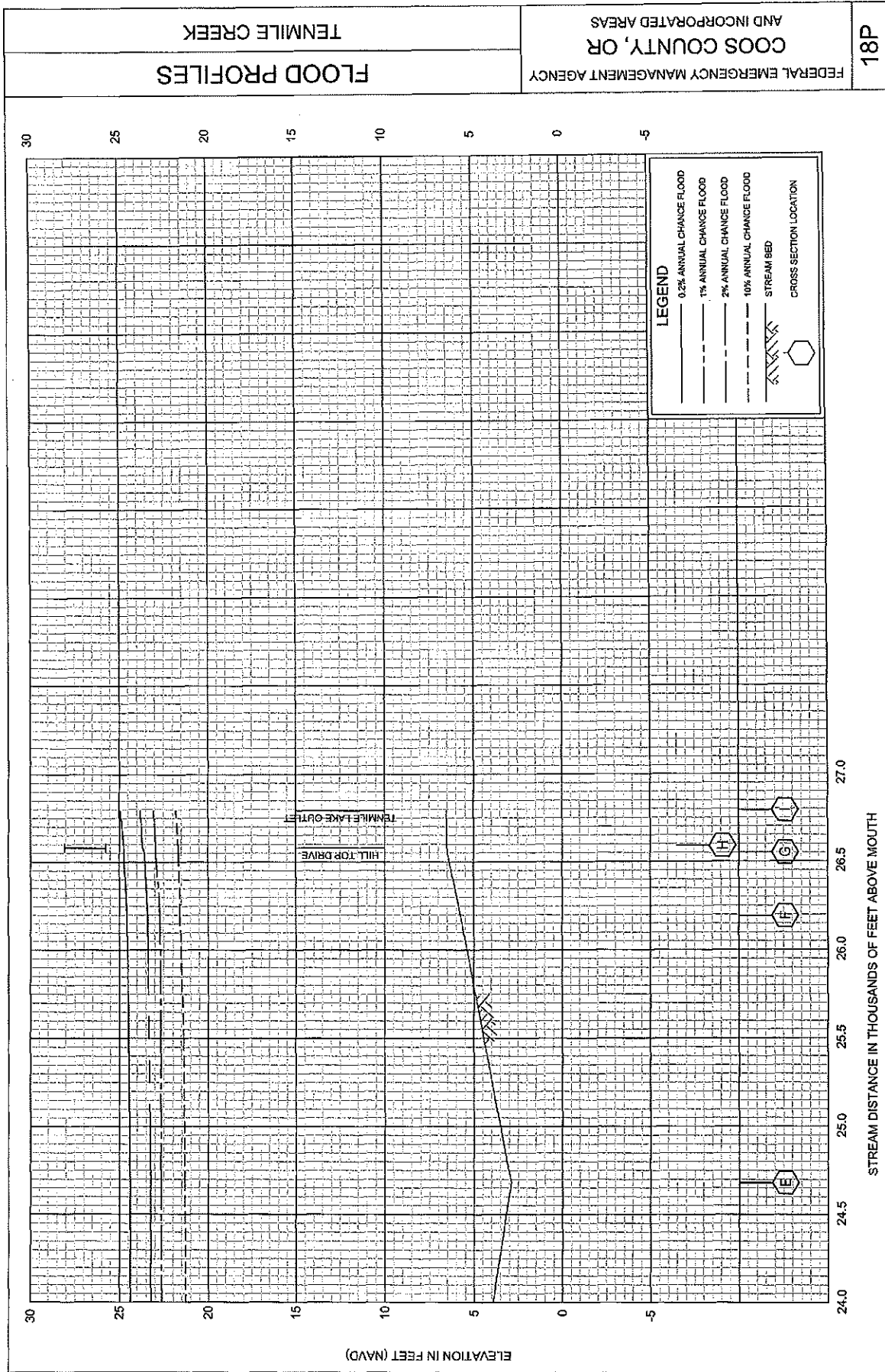












**Coos County Code
4.11.00 Flood Plain
Overlay Zoning**

3

OVERLAY ZONE: FLOODPLAIN

DESIGNATION: /FP

SECTION 4.11.211 AUTHORIZATION

The State of Oregon has been delegated the responsibility through local government units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, Coos County does ordain as follows:

SECTION 4.11.212 FINDINGS OF FACT

1. The flood hazard areas of Coos County are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.
2. These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately flood proofed, elevated, or otherwise protected from flood damage also contribute to the flood loss.

SECTION 4.11.213 STATEMENT OF PURPOSE

It is the purpose of this ordinance to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed:

1. To protect human life and health;
2. To minimize expenditure of public money and costly flood control projects;
3. To minimize the need for rescue and relief effects associated with flooding and generally undertaken at the expense of the general public;
4. To minimize prolonged business interruptions;
5. To minimize damage to public facilities and utilities, such as water and gas mains, electric, telephone and sewer lines, streets, and bridges located in areas of special flood hazard;
6. To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;
7. To ensure that potential buyers are notified that property is in an area of special flood hazard; and
8. To ensure that those who occupy areas of special flood hazard assume responsibility for their actions.

SECTION 4.11.214 METHODS OF REDUCING FLOOD LOSSES

In order to accomplish its purposes, this ordinance includes methods and provisions for:

1. Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
2. Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
3. Controlling the alteration of natural flood plans, stream channels, and natural protective barriers, which help accommodate or channel flood waters;
4. Controlling filling, grading, dredging, and other development which may increase flood damage;
5. Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or may increase flood hazards in other areas; and
6. Coordinating and supplementing the provisions of the state building code with local land use and development ordinances.

SECTION 4.11.220 DEFINITIONS

Unless specifically defined below, words or phrases used in this Overlay Zone shall be interpreted so as to give them the meaning they have in common usage and to give this Ordinance the most reasonable application.

1. "APPEAL" means a request for a review of the interpretation of any provision of this Overlay Zone or a request for a variance.
2. "AREA OF SHALLOW FLOODING" means a designated AO, AH, AR/AO, AR/AH, or VO zone on a community's Flood Insurance Rate Map (FIRM) with a 1 percent or greater annual chance of flooding to an average depth of 1 to 3 feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.
3. "AREA OF SPECIAL FLOOD HAZARD" is the land in the flood plain within a community subject to a 1 percent or greater chance of flooding in any given year. The area may be designated as Zone A on the FHB. After detailed ratemaking has been completed in preparation for publication of the flood insurance rate map, Zone A usually is refined into Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, or V1-30, VE, or V. For purposes of these regulations, the term "special flood hazard area" is synonymous in meaning with the phrase "area of special flood hazard".
4. "BASE FLOOD" means the flood having a one percent chance of being equalled or exceeded in any given year.
5. "BASEMENT" means any area of the building having its floor subgrade (below ground level) on all sides.
6. "BELOW GRADE CRAWL SPACE" means an enclosed area below the base flood elevation in which the interior grade is not more than two feet below the lowest adjacent exterior grade and the height, measured from the interior grade of the crawlspace to the top of the crawlspace foundation, does not exceed 4 feet at any point.

7. "BREAKAWAY WALL" means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.
8. "COASTAL HIGH HAZARD AREA" means an area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources.
9. "CRITICAL FACILITY" means a facility in which a slight chance of flooding might be too great. Critical facilities include, but are not limited to, schools; nursing homes; hospitals; police, fire, and emergency response installations; and installations which produce, use, or store hazardous materials or hazardous waste.
10. "DEVELOPMENT" means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures; mining; dredging; filling; grading; paving; excavation or drilling operations; or storage of equipment or materials located within the area of special flood hazard.
11. "ELEVATED BUILDING" means, for insurance purposes, a nonbasement building which has its lowest elevated floor raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.
12. "FLOOD" or "FLOODING" means:
 - a. A general and temporary condition of partial or complete inundation of normally dry land areas from:
 - i. The overflow of inland or tidal waters.
 - ii. The unusual and rapid accumulation or runoff of surface waters from any source.
 - iii. Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in paragraph (a)(ii) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.
 - b. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph (a)(i) of this definition.
13. "FLOODPLAIN ADMINISTRATOR" means the Planning Staff member designated to administer the floodplain program.
14. "FLOOD ELEVATION STUDY" means an examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards.
15. "FLOOD INSURANCE RATE MAP (FIRM)" means an official map of a community, on which the Federal Insurance Administrator has delineated both the special hazard areas and the risk premium zones applicable to the community. A FIRM that has been made available digitally is called a Digital Flood Insurance Rate Map (DFIRM).

16. "FLOOD INSURANCE STUDY" see flood elevation study.
17. "FLOODWAY" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.
18. "LOWEST FLOOR" means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking or vehicles, building access, or storage, in an area other than a basement area, is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this Overlay Zone, found at Section 4.11.252(1)(b).
19. "HEARINGS BODY" means the body that will hear the appeal. This could be the Planning Commission or the Board of Commissioners.
20. "MANUFACTURED DWELLING" means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term "manufactured dwelling" does not include a "recreational vehicle."
21. "MANUFACTURED HOME PARK OR SUBDIVISION" means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.
22. "NEW CONSTRUCTION" means structures for which the start of construction commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.
23. "RECREATIONAL VEHICLE" means a vehicle which is:
 - a. Built on a single chassis;
 - b. 400 square feet or less when measured at the largest horizontal projection;
 - c. Designed to be self-propelled or permanently towable by a light duty truck; and
 - d. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.
24. "SUBSTANTIAL DAMAGE" means damage of any origin sustained by a structure whereby the cost of restoring the structure to the state it was in before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.
25. "SUBSTANTIAL IMPROVEMENT" means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "substantial damage", regardless of the actual repair work performed. The term does not, however, include either:
 - a. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions or
 - b. Any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a "historic structure".
26. "VARIANCE" means a grant of relief from the requirements of this Ordinance which permits construction in a manner that would otherwise be prohibited by this Ordinance.

27. "WATER DEPENDENT" means a structure for commerce or industry which cannot exist in any other location and is dependent on the water by reason of the intrinsic nature of its operations.

SECTION 4.11.231 LANDS TO WHICH THIS OVERLAY ZONE APPLIES

This Ordinance shall apply to all areas of special flood hazards within the jurisdiction of Coos County that have been identified on the Flood Insurance Maps dated March 17, 2014 as described in Section 4.11.232.

SECTION 4.11.232 BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD

The areas of special flood hazard identified by the Federal Insurance & Mitigation Administration in a scientific and engineering report entitled "The Flood Insurance Study for Coos County, Oregon and Incorporated Areas" revised December 7, 2018, with accompanying Flood Insurance Maps are hereby adopted by reference and declared to be a part of this Ordinance. The Flood Insurance Study is on file at location. The best available information for flood hazard area identification as outlined in Section 4.11.243.2 shall be the basis for regulation until a new FIRM is issued which incorporates the data utilized under Section 4.11.243.2.

SECTION 4.11.233 INTERPRETATION

In the interpretation and application of this ordinance, all provisions shall be:

1. Considered as minimum requirements; and
2. Deemed neither to limit or repeal any other powers granted under State statutes.

SECTION 4.11.234 WARNING AND DISCLAIMER OF LIABILITY

The degree of flood protection required by this Ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This Ordinance shall not create liability on the part of Coos County, any officer or employee thereof, or the Federal Insurance & Mitigation Administration, for any flood damages that result from reliance on this Ordinance or any administrative decision lawfully made hereunder.

SECTION 4.11.235 ESTABLISHMENT OF DEVELOPMENT PERMIT

1. Floodplain Application Required

A floodplain application shall be submitted and approved before construction or regulated development begins within any area of special flood hazard established in Section 4.11.232. The permit shall be for all structures including manufactured homes, as

set forth in the "DEFINITIONS," and for all development including fill and other activities, also as set forth in the "DEFINITIONS."

2. Application

An application shall be made on the forms furnished by the Planning Department and may include, but not be limited to, plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities, and the location of the foregoing. Specifically, the following information is required:

- a. Elevation in relation to mean sea level, of the lowest floor (including basement) of all structures which may be submitted by a registered surveyor;
- 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 nonresidential structure meet the floodproofing criteria in Section 4.11.252; and
- d. Description of the extent to which a watercourse will be altered or relocated as a result of proposed development.
- e. Plot plan drawn to scale showing the nature, location and dimensions and elevation referenced to mean sea level, or NAVD 88, whichever is applicable, of the area in question including existing and proposed structures, fill, storage of materials, and drainage facilities. Applicants shall submit certification by an Oregon registered professional engineer or land surveyor of the site's ground elevation and whether or not the development is located in a flood hazard area. If so, the certification shall include which flood hazard area applies, the location of the floodway at the site, and the 100 year flood elevation at the site. A reference mark shall be set at the elevation of the 100 year flood at the site. The location, description, and elevation of the reference mark shall be included in the certification; and
- f. Any other information required to make a determination.

SECTION 4.11.242 DESIGNATION OF THE LOCAL ADMINISTRATOR

The Coos County Planning Director is hereby appointed to administer and implement this ordinance by granting or denying development permit applications in accordance with its provisions. The Floodplain Administer may delegate authority to implement these provisions.

SECTION 4.11.243 DUTIES AND RESPONSIBILITIES OF THE FLOODPLAIN ADMINISTRATOR

Duties of the local floodplain administrator shall include, but not be limited to:

1. Application Review

- a. Reviews all applications to determine that the floodplain requirements of this Ordinance have been satisfied.
- b. Review proposed development to assure that all necessary permits have been received from those governmental agencies from which approval is required by

Federal or State law, including section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334

- c. Review all requested development to determine if it is located in the floodway. If located in the floodway, assure that the encroachment provisions of Section 4.11.254 are met.

2. Use of Other Base Flood Data (In A and V Zones)

When base flood elevation data has not been provided (A and V Zones) in accordance with Section 4.11.232, BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD, the local administrator shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a Federal, State or other source, in order to administer Sections 4.11.252, SPECIFIC STANDARDS, and 4.11.254 FLOODWAYS.

3. Information to be Obtained and Maintained

- a. Where base flood elevation data is provided through the Flood Insurance Study, FIRM, or required as in Section 4.11.243(2), obtain and record the actual elevation (in relation to mean sea level) of the lowest floor (including basements and below-grade crawlspaces) of all new or substantially improved structures, and whether or not the structure contains a basement.
- b. For all new or substantially improved floodproofed structures where base flood elevation data is provided through the Flood Insurance Study, FIRM, or as required in Section 4.11.243(2):
 - i. Verify and record the actual elevation (in relation to mean seal level); and
 - ii. Maintain the floodproofing certifications required in Section 4.11.24135(2)(c).
- c. Maintain for public inspection all records pertaining to the provisions of this ordinance.

4. Alteration of Watercourses

- a. Notify adjacent communities, the Department of Land Conservation and Development and other appropriate state and federal agencies, prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance & Mitigation Administration.
- b. Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.

5. Requirement to Submit New Technical Data

- a. Base Flood Elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, the Floodplain Administrator shall notify the Federal Insurance Administrator of the changes by submitting technical or scientific data in accordance with Volume 44 Code Federal Regulations Section 65.3. Such a submission is necessary so that upon confirmation of those physical changes affecting flooding conditions, risk

premium rates and floodplain management requirements will be based upon current data.

- b. The property owner shall be responsible for preparing the technical and scientific data required by FEMA under paragraph (5)(a) of this section, and for paying any processing or application fees associated with FEMA's review of the submitted data.
- c. The Floodplain Administrator shall be under no obligation to sign the Community Acknowledgement Form, which is part of the CLOMR/LOMR application, until the applicant demonstrates that the project will or has met the requirements of this code and all applicable State and Federal laws.

6. Interpretation of FIRM Boundaries

The Floodplain Administrator shall make interpretations where needed, as to exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Section 4.11.244.

SECTION 4.11.244 VARIANCE PROCEDURE

The variance procedures discussed in this section only apply to variance of floodplain standards and do not extend to other variance requests.

1. Appeal Board

- a. In the case of an appeal the process under Section 5.8 shall apply.
- b. The hearings body reviewing the appeal shall consider if there is an error in any requirement, decision, or determination made by the county in the enforcement or administration of this ordinance.
- c. In passing upon such applications, the hearings body shall consider all technical evaluations, all relevant factors, standards specified in other sections of this ordinance, and:
 - i. The danger that materials may be swept onto other lands to the injury of others;
 - ii. The danger to life and property due to flooding or erosion damage;
 - iii. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 - iv. The importance of the services provided by the proposed facility to the community;
 - v. The necessity to the facility of a waterfront location, where applicable;
 - vi. The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
 - vii. The compatibility of the proposed use with existing and anticipated development;
 - viii. The relationship of the proposed use to the comprehensive plan and flood plain management program for that area;
 - ix. The safety of access to the property in times of flood for ordinary and emergency vehicles;

- x. The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and
- xi. The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.
- d. Upon consideration of the factors of Section 4.11.244(1)(c) and the purposes of this ordinance, the Planning Commission or Board of Commissioners may attach such conditions to the granting of variances as it deems necessary to further the purposes of this ordinance.
- e. The local floodplain administrator shall maintain the records of all appeal actions and report any variances to the Federal Insurance & Mitigation Administration upon request.

2. Conditions for Variances

This variance language only applies to variance for floodplain standards and does not extend to other type of variance requests.

- a. Generally, the only condition under which a variance from the elevation standard may be issued is for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing items (i-xi) in Section 4.11.244(1)(c) have been fully considered. As the lot size increases the technical justification required for issuing the variance increases.
- b. Variances may be issued for the reconstruction, rehabilitation, or restoration of structures listed on the National Register of Historic Places or the Statewide Inventory of Historic Properties, without regard to the procedures set forth in this section.
- c. Variances shall not be issued within a designated floodway if any increase in flood levels during the base flood discharge would result.
- d. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
- e. Variances shall only be issued upon:
 - i. A showing of good and sufficient cause;
 - ii. A determination that failure to grant the variance would result in exceptional hardship to the applicant; and
 - iii. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public as identified in Section 4.11.244(1)(c), or conflict with existing local laws or ordinances.
- f. Variances, as interpreted in the National Flood Insurance Program, are based on the general zoning law principle that they pertain to a physical piece or property; they are not personal in nature and do not pertain to the structure, its inhabitants, economic or financial circumstances. They primarily address small lots in densely

populated residential neighborhoods. As such, variances from the flood elevations should be quite rare.

- g. Variances may be issued for nonresidential buildings in very limited circumstances to allow a lesser degree of floodproofing than watertight or dry-floodproofing, where it can be determined that such action will have low damage potential, complies with all other variance criteria except Section 4.11.244(2)(a), and otherwise complies with Sections 4.11.251(1-3) of the GENERAL STANDARDS.
- h. Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.

SECTION 4.11.251 GENERAL STANDARDS

In all areas of special flood hazards, the following standards are required:

1. Anchoring

- a. All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure; and
- b. All manufactured homes must likewise be anchored to prevent flotation, collapse, or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors (Reference FEMA's "Manufactured Home Installation in Flood Hazard Areas" guidebook for additional techniques).

2. Construction Materials and Methods

- a. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;
- b. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage; and
- c. Electrical, heating, ventilation, plumbing, and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

3. Utilities

- a. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- b. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters; and
- c. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding consistent with the Oregon Department of Environmental Quality.

4. Land Divisions Proposals

- a. All land division proposals shall be consistent with the need to minimize flood damage;
- b. All land division proposals that are proposing public utilities and facilities such as sewer, gas, electrical, and water systems shall be required to locate and construct them to minimize or eliminate flood damage;
- c. All land division proposals that consist of three or more lots shall have adequate drainage provided to reduce exposure to flood damage; and
- d. Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals and other proposed developments which contain at least 50 lots or 5 acres (whichever is less).

5. Review of Applications

Where elevation data is not available either through the Flood Insurance Study, FIRM, or from another authoritative source [Section 4.11.243(2)], applications for structural development shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available. Failure to elevate at least two feet above grade in these zones may result in higher insurance rates.

6. AH Zone Drainage

Adequate drainage paths are required around structures on slopes to guide floodwaters around and away from proposed structures.

7. Other Development. Includes mining, dredging, filling, grading, paving, excavation or drilling operations located within the area of a special flood hazard, but does not include such uses as normal agricultural operations, fill less than 12 cubic yards, fences, road and driveway maintenance, landscaping, gardening and similar uses which are excluded from definition because it is the County's determination that such uses are not of the type and magnitude to affect potential water surface elevations or increase the level of insurable damages.

Review and authorization of a floodplain application must be obtained from the Coos County Planning Department before "other development" may occur. Such authorization by the Planning Department shall not be issued unless it is established, based on a licensed engineer's certification that the "other development" shall not:

- a. Result in any increase in flood levels during the occurrence of the base flood discharge if the development will occur within a designated floodway; or,
- b. Result in a cumulative increase of more than one foot during the occurrence of the base flood discharge if the development will occur within a designated flood plain outside of a designated floodway.

8. COMMUNITY OFFICIAL BASE FLOOD ELEVATION DETERMINATION REQUEST AND PROCEDURES: The Coos County Planning Department shall sign a community official base flood elevation (BFE) confirmation received from a mortgage insurance company if:
- a. The development is located outside of the mapped flood hazard area;

- b. A Letter of Map Revision or Amendment has been approved by FEMA; or
- c. The property has an approved flood hazard determination application that shows the development was built to flood proofing standards or is located above the base flood elevation.

If the development is located within the mapped flood hazard area and there is not a flood hazard determination on file with the Coos County Planning Department a confirmation letter will not be signed until a flood hazard application has been approved as complying with Sections 4.11.211 through 4.11.252.

SECTION 4.11.252 SPECIFIC STANDARDS

In all areas of special flood hazards where base flood elevation data has been provided (Zones A1-30, AH, and AE) as set forth in Section 4.11.232, BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD or Section 4.11.243(2), Use of Other Base Flood Data (In A and V Zones), the following provisions are required:

1. Residential Construction

- a. New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to a minimum of one foot above the base flood elevation; and
- b. Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:
 - i. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided;
 - ii. The bottom of all openings shall be no higher than one foot above grade; and
 - iii. Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

2. Nonresidential Construction

New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated at or above the base flood elevation; or, together with attendant utility and sanitary facilities, shall:

- a. Be floodproofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water;
- b. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;
- c. Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the official as set forth in Section 4.11.243(3)(b);

- d. Nonresidential structures that are elevated, not floodproofed, must meet the same standards for space below the lowest floor as described in 4.11.252(1)(b);
 - e. Applicants floodproofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the floodproofed level (e.g. a building floodproofed to the base flood level will be rated as one foot below);
 - f. Applicants shall supply a comprehensive Maintenance Plan for the entire structure to include but not limited to: exterior envelope of structure; all penetrations to the exterior of the structure; all shields, gates, barriers, or components designed to provide floodproofing protection to the structure; all seals or gaskets for shields, gates, barriers, or components; and, the location of all shields, gates, barriers, and components as well as all associated hardware, and any materials or specialized tools necessary to seal the structure; and
 - g. Applicants shall supply an Emergency Action Plan (EAP) for the installation and sealing of the structure prior to a flooding event that clearly identifies what triggers the EAP and who is responsible for enacting the EAP.
3. Manufactured Dwellings
- a. Manufactured dwellings supported on solid foundation walls shall be constructed with flood openings that comply with Section 4.11.252(1)(b) above;
 - b. The bottom of the longitudinal chassis frame beam in A zones, shall be at or above BFE;
 - c. The manufactured dwelling shall be anchored to prevent flotation, collapse, and lateral movement during the base flood. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors (Reference FEMA's "Manufactured Home Installation in Flood Hazard Areas" guidebook for additional techniques); and
 - d. Electrical crossover connections shall be a minimum of 12 inches above BFE.
4. Recreational Vehicles
- Recreational vehicles placed on sites are required to:
- a. Be on the site for fewer than 180 consecutive days; and
 - b. Be fully licensed and ready for highway use, on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or
 - c. Meet the requirements of Section 4.11.252(3) above and the elevation and anchoring requirements for manufactured homes.
5. Small Accessory Structures
- Relief from elevation or floodproofing as required in Section 4.11.252(1) or 4.11.252(2) above may be granted for small accessory structures that are:
- a. Less than 200 square feet and do not exceed one story;
 - b. Not temperature controlled;
 - c. Not used for human habitation and are used solely for parking of vehicles or storage of items having low damage potential when submerged;

- d. Not used to store toxic material, oil or gasoline, or any priority persistent pollutant identified by the Oregon Department of Environmental Quality shall unless confined in a tank, that is installed in compliance with this ordinance or stored at least one foot above Base Flood Elevation;
- e. Located and constructed to have low damage potential;
- f. Constructed with materials resistant to flood damage;
- g. Anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the base flood;
- h. Constructed to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater. Designs for complying with this requirement must be certified by a licensed professional engineer or architect or:
 - i. provide a minimum of two openings with a total net area of not less than one square inch for every square foot of enclosed area subject to flooding;
 - ii. the bottom of all openings shall be no higher than one foot above the higher of the exterior or interior grade or floor immediately below the opening;
 - iii. openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwater in both directions without manual intervention; and
- i. Constructed with electrical and other service facilities located and installed so as to prevent water from entering or accumulating within the components during conditions of the base flood.

6. Below-Grade Crawlspace

Below-grade crawlspaces are allowed subject to the following standards as found in FEMA Technical Bulletin 11-01, Crawlspace Construction for Buildings Located in Special Flood Hazard Areas:

- a. The building must be designed and adequately anchored to resist flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy. Hydrostatic loads and the effects of buoyancy can usually be addressed through the required openings stated in Section B below. Because of hydrodynamic loads, crawlspace construction is not allowed in areas with flood velocities greater than five (5) feet per second unless the design is reviewed by a qualified design professional, such as a registered architect or professional engineer. Other types of foundations are recommended for these areas;
- b. The crawlspace is an enclosed area below the base flood elevation (BFE) and, as such, must have openings that equalize hydrostatic pressures by allowing the automatic entry and exit of floodwaters. The bottom of each flood vent opening can be no more than one (1) foot above the lowest adjacent exterior grade;
- c. Portions of the building below the BFE must be constructed with materials resistant to flood damage. This includes not only the foundation walls of the crawlspace used to elevate the building, but also any joists, insulation, or other materials that extend below the BFE. The recommended construction practice is to elevate the bottom of joists and all insulation above BFE;

- d. Any building utility systems within the crawlspace must be elevated above BFE or designed so that floodwaters cannot enter or accumulate within the system components during flood conditions. Ductwork, in particular, must either be placed above the BFE or sealed from floodwaters;
- e. The interior grade of a crawlspace below the BFE must not be more than two (2) feet below the lowest adjacent exterior grade;
- f. The height of the below-grade crawlspace, measured from the interior grade of the crawlspace to the top of the crawlspace foundation wall must not exceed four (4) feet at any point. The height limitation is the maximum allowable unsupported wall height according to the engineering analyses and building code requirements for flood hazard areas;
- g. There must be an adequate drainage system that removes floodwaters from the interior area of the crawlspace. The enclosed area should be drained within a reasonable time after a flood event. The type of drainage system will vary because of the site gradient and other drainage characteristics, such as soil types. Possible options include natural drainage through porous, well-drained soils and drainage systems such as perforated pipes, drainage tiles or gravel or crushed stone drainage by gravity or mechanical means; and
- h. The velocity of floodwaters at the site should not exceed five (5) feet per second for any crawlspace. For velocities in excess of five (5) feet per second, other foundation types should be used.

For more detailed information refer to FEMA Technical Bulletin 11-01.

SECTION 4.11.253 BEFORE REGULATORY FLOODWAY

In areas where a regulatory floodway has not been designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

SECTION 4.11.254 FLOODWAY

Located within areas of special flood hazard established in Section 4.11.232 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

1. Except as provided in paragraph (3), prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional civil engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge;

2. If Section 4.11.254(1) is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of Section 4.11.251 et seq;
3. RESERVED
4. Temporary structures placed in the floodway: Relief from no-rise evaluation, elevation or dry flood-proofing standards may be granted for a non-residential structure placed during the dry season (June – October) and for a period of less than ninety (90) days. A plan for the removal of the temporary structure after the dry season or when a flood event threatens shall be provided. The plan shall include disconnecting and protecting from water infiltration and damage all utilities servicing the temporary structure; and
5. Temporary storage of goods and materials, not including hazardous materials, is allowed in the floodway for a period of less than ninety (90) days within the dry season (June – October).

SECTION 4.11.255 STANDARDS FOR SHALLOW FLOODING AREAS (AO ZONES)

Shallow flooding areas appear on FIRMs as AO zones with depth designations. The base flood depths in these zones range from 1 to 3 feet above ground where a clearly defined channel does not exist, or where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is usually characterized as sheet flow. In these areas, the following provisions apply:

1. New construction and substantial improvements of residential structures and manufactured homes within AO zones shall have the lowest floor (including basement) elevated above the highest grade adjacent to the building, a minimum of one foot above the depth number specified on the FIRM (at least two feet if no depth number is specified);
2. New construction and substantial improvements of nonresidential structures within AO zones shall either:
 - a. Have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, one foot or more above the depth number specified on the FIRM (at least two feet if no depth number is specified); or
 - b. Together with attendant utility and sanitary facilities, be completely Flood Proofed to or above that level, so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. If this method is used, compliance shall be certified by a registered professional engineer or architect as in section 4.11.252(2)(c).
3. Require adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures; and
4. Recreational vehicles placed on sites within AO Zones on the community's FIRM either:
 - a. Be on the site for fewer than 180 consecutive days; and
 - b. Be fully licensed and ready for highway use, on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or
 - c. Meet the requirements of Section 4.11.255 above and the elevation and anchoring requirements for manufactured homes.

SECTION 4.11.256 COASTAL HIGH HAZARD AREAS

Located within areas of special flood hazard established in Section 4.11.232 are Coastal High Hazard Areas, designated as Zones V1-V30, VE, and/or V. These areas have special flood hazards associated with high velocity waters from surges and, therefore, in addition to meeting all provisions in this ordinance and state building code, the following provisions shall also apply:

1. All new construction and substantial improvements in Zones V1-V30 and VE (V if base flood elevation data is available) shall be elevated on pilings and columns so that:
 - a. The bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated a minimum of one foot above the base flood level; and
 - b. The pile or column foundation and structure attached thereto is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Wind and water loading values shall each have a one percent chance of being equaled or exceeded in any given year (100-year mean recurrence interval);
2. A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of 1 (a) and (b) of this section;
3. Obtain the elevation (in relation to mean sea level) of the bottom of the lowest structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures in Zones V1-30, VE, and V, and whether or not such structures contain a basement. The local administrator shall maintain a record of all such information;
4. All new construction shall be located landward of the reach of mean high tide;
5. Provide that all new construction and substantial improvements have the space below the lowest floor either free of obstruction or constructed with non-supporting breakaway walls, open wood lattice-work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system. For the purpose of this section, a breakaway wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakaway walls which exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by local or State codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet the following conditions:
 - a. Breakaway wall collapse shall result from water load less than that which would occur during the base flood; and
 - b. The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and nonstructural). Maximum wind and water loading values to be used in this determination shall each have a one percent chance of being equaled or exceeded in any given year (100-year mean recurrence interval).
6. If breakaway walls are utilized, such enclosed space shall be useable solely for parking of vehicles, building access, or storage. Such space shall not be used for human habitation;

7. Prohibit man-made alteration of sand dunes which would increase potential flood damage;
8. The use of fill for structural support of buildings is prohibited.
9. All manufactured homes to be placed or substantially improved within Zones V1-V30, V, and VE on the community's FIRM on sites:
 - a. Outside of a manufactured home park or subdivision;
 - b. In a new manufactured home park or subdivision;
 - c. In an expansion to an existing manufactured home park or subdivision; or
 - d. In an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as the result of a flood; meet the standards of paragraphs 5.6(1) through (8) of this section and that manufactured homes placed or substantially improved on other sites in an existing manufactured home park or subdivision within Zones V1-30, V, and VE on the FIRM meet the requirements of Section 5.2-3.
10. Recreational vehicles placed on sites within Zones V1-30, V, and VE on the community's FIRM either:
 - a. Be on the site for fewer than 180 consecutive days, if permitted by the zoning district; and
 - b. Be fully licensed and ready for highway use, on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or
 - c. Meet the requirements of Section 4.11.241(1) Permitting requirements and paragraphs (1) through (9) of this section.

SECTION 4.11.257 CRITICAL FACILITY

Construction of new critical facilities shall be, to the extent practicable, located outside the limits of the Special Flood Hazard Area (SFHA) (100-year floodplain).

Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available, taking into account cost and practicability. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet above BFE or to the height of the 500-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities to the extent possible.

Certification of Impacts of Fill 4



Reference: 615034

July 19, 2019

Mr. Mick Rowlands, PE
Jordan Cove Energy Project L.P.
5615 Kirby Drive
Houston, TX 77005

Subject: LNG Facility Project Development: Analysis and Certification of Impacts of Fill on the Flood Hazard of Coos Bay at River Mile 7.0 to River Mile 9.3

Mr. Rowlands:

This letter report presents SHN's analysis and certification of the negligible impacts to flood levels from approved and proposed fill within the LNG Facility site on lands identified in Coos County's floodplain overlay zone (FP). This letter is an addition to the March 20, 2015 letter submitted to Mr. Mark Whitlow, Subject: LNG Facility Project Development: Analysis and Certification of Impacts of Fill on the Flood Hazard of Coos Bay at River Mile 7.0 to River Mile 9.2. This letter report addresses the previously addressed fill areas along with an additional area of fill (Figure 1).

The LNG Facility project proposes new fill within a Special Flood Hazard Area of Coos Bay in FEMA's flood zone AE, between River Mile (RM) 7.0 to RM 9.3 (Attachment 2 FIRM Panels 41011C0167E and 41011C0186E). As shown in the attached Figure 1, portions of the fill associated with the LNG Facility project will be placed within the AE zone, an area designated by Coos County Code Section 4.11.220 as an Area of Special Flood Hazard (SFHA). According to Coos County floodplain regulations in LDO Section 4.11.253, proposed development (along with the cumulative effect of all other anticipated development) within the SFHA will not increase the water surface elevation of the base flood more than one foot at any point with the community. The Base Flood Elevation (BFE) for the SFHA for this portion of Coos Bay has been established by the Federal Emergency Management Agency (FEMA) at elevation 11.0 for the barge berth and 12.0 for the fill sites east of Jordan Cove road identified on the referenced FIRM panels for the AE zone. For the reasons set out below, the approved and proposed fill within the LNG Facility will not increase the base flood elevation by more than one foot or create an increase in the flood hazard.

Coos County's Floodplain zoning balances the benefits from floodplain development against the resulting increase in flood hazards and/or flood damage. A designated regulatory floodway is often prescribed by local agencies to assist in managing development within areas subject to flooding. Under this concept, the area of the established flood elevation is divided into a floodway and a fringe. The floodway defines the portion of the stream or river channel plus adjacent floodplain areas that are reserved to provide sufficient hydraulic capacity to convey a flood at a known elevation. Generally, the floodway must be managed to be free of restrictions so that the 1-percent-annual-chance flood (100-year flood) can be conveyed without substantial and damaging increases in flood heights or an increase in water velocity. Minimum Federal standards and Coos County FP policy limit the increase in the flood elevation to 1.0 foot, provided that hazardous velocities are not produced.

Mr. Mick Rowlands

LNG Facility Project Development: Analysis and Certification of Impacts of Fill on the Flood Hazard of Coos Bay at River Mile 7.0 to River Mile 9.3

July 19, 2019

Page 2

FEMA has established the BFE for the Coos Bay Estuary; however, no floodway has been designated for the portion of estuary adjacent to the project area. The September 25, 2009 (Revised March 17, 2014 and December 7, 2018), Flood Insurance Study for Coos County Oregon and Incorporated Areas states: "...the floodway concept is not applicable in areas where flooding is controlled by tidal influences." The proposed fill areas are located in the lower bay where the BFE is controlled by tidal influence. Provided the fill does not reduce the hydraulic capacity of the estuary (i.e. constrict the ebb and flow of bay water), the fill should have no affect on the base flood elevation.

In order to determine the possible impacts of the project on the flood level, cross sectional areas of the estuary within the vicinity of the project, both immediately upstream and downstream were evaluated. The project area is confined within River Mile 7.0 and 9.3 along a channel section known as the upper Jarvis Range. The channel narrows to form a limiting cross section where the ebb and flow of the bay is constricted by the natural confines of the estuary channel and the airport runway. The total width of the channel associated with the BFE in this area ranges from approximately 2,600 feet at river mile 9.3 and 3,900 feet at river mile 7.0. The proposed fill areas occur between these two points along the north shoreline in wider, cross sectional portions of the estuary. Because the proposed fill does not reduce the controlling cross-sectional areas of the channel, the velocity during the ebb and flow of bay waters will remain unchanged and the fill will have no affect on the base flood elevation or the flood hazard.

Considering the expansive volume of intertidal and runoff storage existing in the Coos Bay Estuary, the overall impacts associated with the small amounts of proposed fill in the existing fringe areas are insignificant and will have no measureable affect on the BFE nor result in an increase in flood hazards. The area of the bay between the two channel constrictions is approximately 889 acres (area between RM 7.0 and RM 9.3 including Pony Slough). The total amount of fill placed within this portion of the bay is estimated at 12,114 cubic yards associated with fill areas outlined in Figure 1, (7.4 total acre-feet). Of the total estimated fill area, 6,000 yd³ is associated with the original March 20, 2015 certification letter and 6,214 yd³ is additionally addressed through this certification letter. Ignoring tidal influences and the flow through the upper and lower controlling cross sectional areas of the bay; the total proposed fill will displace a volume of water equivalent to an increase in the height of water above the BFE of 0.008 feet (less than 3/32nds of an inch). The impact of the proposed fill on the storage volume for this portion of the bay is therefore inconsequential.

The flood level between Coos Bay RM 7.0 and RM 9.3 is controlled by tidal influence; consequently, FEMA has not designated a floodway but instead a base flood elevation. The placement of fill along the fringe of Coos Bay will have no affect on the BFE, nor will the fill cause an increase in the velocity of water or increase flood hazards. We conclude that the proposed fill for the LNG Facility project will have no affect on the special flood hazard area for this portion of Coos Bay, result in any increase in flood levels during the occurrence of the base flood discharge; or, result in a cumulative increase of more than one foot during the occurrence of the base flood discharge



Mr. Mick Rowlands

LNG Facility Project Development: Analysis and Certification of Impacts of Fill on the Flood Hazard of Coos Bay at River Mile 7.0 to River Mile 9.3

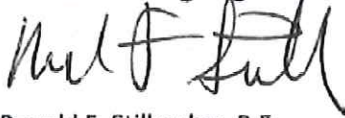
July 19, 2019

Page 3

We trust this report assists you in addressing the LNG Facility project impacts of fill on the base flood elevation and special flood hazard area. Should you have any questions or comments, feel free to give me a call at 541-266-9890.

Regards,

SHN Consulting Engineers & Geologists, Inc.



Ronald F. Stillmaker, P.E.
Regional Manager

Attachments:

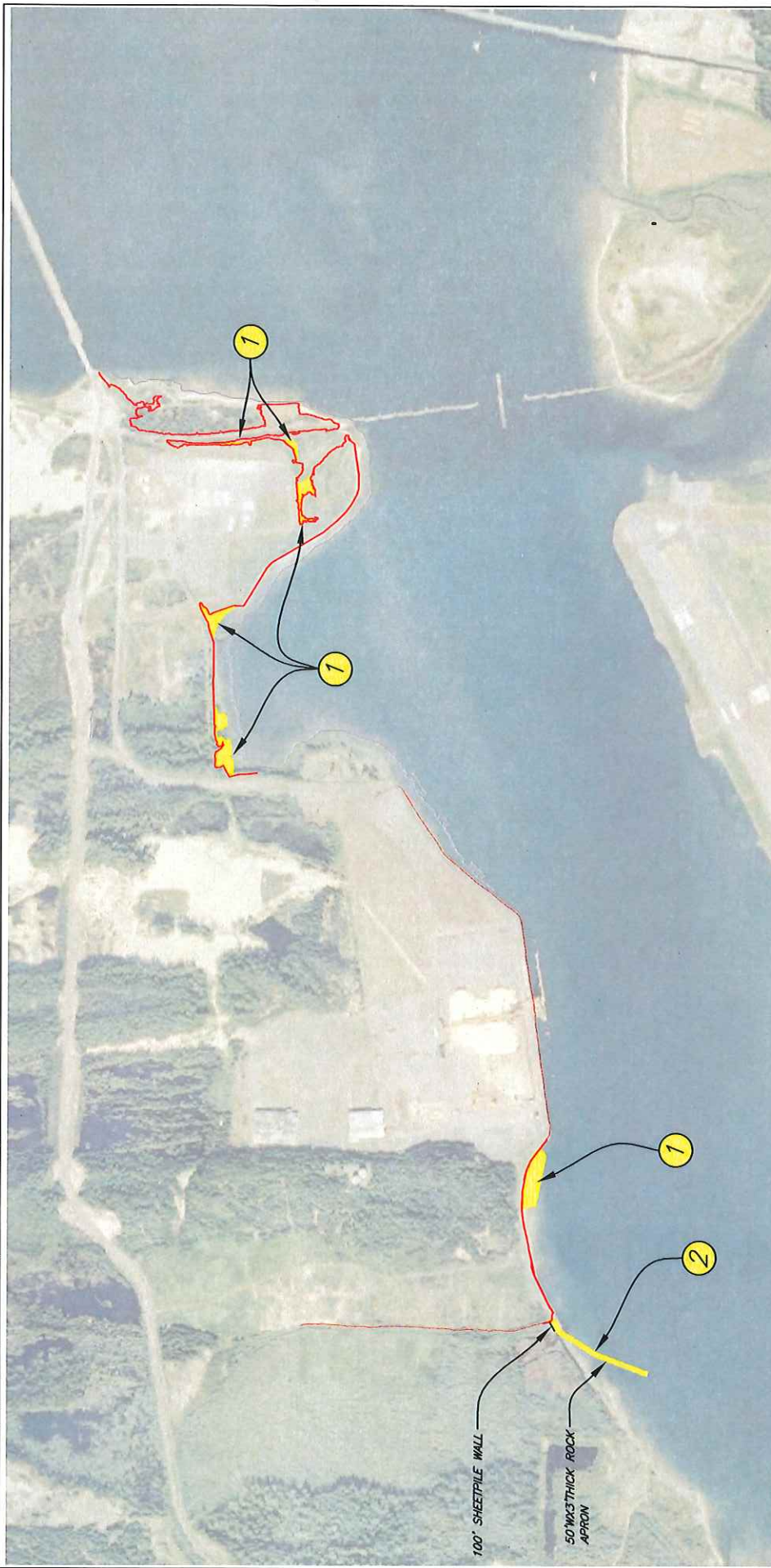
1. Figures
2. FIRM Panels 41011C0167E and 41011C0186E



EXPIRES: 06-30-2020



Figure 1

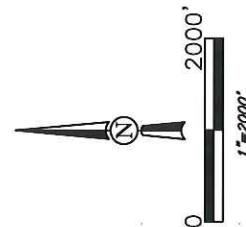



LEGEND

- Base Flood Elevation
See note below
- ① Area of Fill Below BFE, Addressed in March 20, 2015 Certification Letter
- ② Area of Fill Below BFE, Addressed in July 19, 2019 Certification Letter

NOTE

1. The Base Flood Elevation is the computed elevation to which floodwater is anticipated to rise during the Base Flood. The Base Flood is the flood having a one percent chance of being equaled or exceeded in any given year (also known as the "100-Year Flood"). For Ingram Yard the BFE is 12.1', and for South Dunes the BFE is 12.2' (Coos County Flood Insurance Study, FEMA 2014).
2. Channel linework sources: United States Army Corps of Engineers, June 17, 2014. Each tick is 1000 feet.



	<p>Jordan Cove LNG Flood Plain Certification Fill Areas</p>	<p>REV Description: Issued for Review Doc No: J1-660-CIV-MAP-SHIN-00015-01 REV: A REV Date: 07/17/2019</p>
<p>615034</p>	<p>20190719-JCEP-FIGS</p>	<p>Exhibit Figure 1</p>

FIRM Panels

41011C0167E and 41011C0186E

2

LOMA Determination Documents

5



Federal Emergency Management Agency
Washington, D.C. 20472

September 06, 2012

MR. WALTER WHITE
275 MARKET AVENUE
COOS BAY, OR 97420

CASE NO.: 12-10-1228A
COMMUNITY: COOS COUNTY, OREGON
(UNINCORPORATED AREAS)
COMMUNITY NO.: 410042

DEAR MR. WHITE:

This is in reference to a request that the Federal Emergency Management Agency (FEMA) determine if the property described in the enclosed document is located within an identified Special Flood Hazard Area, the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood), on the effective National Flood Insurance Program (NFIP) map. Using the information submitted and the effective NFIP map, our determination is shown on the attached Letter of Map Amendment (LOMA) Determination Document. This determination document provides additional information regarding the effective NFIP map, the legal description of the property and our determination.

Additional documents are enclosed which provide information regarding the subject property and LOMAs. Please see the List of Enclosures below to determine which documents are enclosed. Other attachments specific to this request may be included as referenced in the Determination/Comment document. If you have any questions about this letter or any of the enclosures, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, Engineering Library, 847 South Pickett Street, Alexandria, VA 22304-4605.

Sincerely,

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

LIST OF ENCLOSURES:

LOMA DETERMINATION DOCUMENT (REMOVAL)

cc: State/Commonwealth NFIP Coordinator
Community Map Repository
Region



Federal Emergency Management Agency

Washington, D.C. 20472

September 06, 2012

MR. WALTER WHITE
275 MARKET AVENUE
COOS BAY, OR 97420

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Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

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Region

Page 1 of 4	Date: September 06, 2012	Case No.: 12-10-1228A	LOMA
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Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

COMMUNITY AND MAP PANEL INFORMATION				LEGAL PROPERTY DESCRIPTION				
COMMUNITY	COOS COUNTY, OREGON (Unincorporated Areas)			A portion of Sections 4 and 5, Township 25 South, Range 13 West, Willamette Meridian, as described in the Statutory Warranty Deed, recorded as Document No. 20116530, in the Office of the County Clerk, Coos County, Oregon (TL: 100, 200, 300) The portion of property is more particularly described by the following metes and bounds:				
	COMMUNITY NO.: 410042							
AFFECTED MAP PANEL	NUMBER: 41011C0167D							
	DATE: 9/25/2009							
FLOODING SOURCE: COOS BAY				APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY: 43.425, -124.268 SOURCE OF LAT & LONG: ARCGIS 10 DATUM: NAD 83				

DETERMINATION

LOT	BLOCK/ SECTION	SUBDIVISION	STREET	OUTCOME WHAT IS REMOVED FROM THE SFHA	FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88)	LOWEST ADJACENT GRADE ELEVATION (NAVD 88)	LOWEST LOT ELEVATION (NAVD 88)
--	--	--	--	Portion of Property (TL 300)	X (unshaded)	--	--	13.0 feet

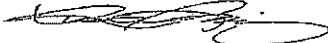
Special Flood Hazard Area (SFHA) - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

ADDITIONAL CONSIDERATIONS (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.)

LEGAL PROPERTY DESCRIPTION
PORTIONS REMAIN IN THE SFHA
ZONE A

This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Amendment for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the described portion(s) of the property(ies) is/are not located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This document amends the effective NFIP map to remove the subject property from the SFHA located on the effective NFIP map; therefore, the Federal mandatory flood insurance requirement does not apply. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan. A Preferred Risk Policy (PRP) is available for buildings located outside the SFHA. Information about the PRP and how one can apply is enclosed.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, Engineering Library, 847 South Pickett Street, Alexandria, VA 22304-4605.



Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

LEGAL PROPERTY DESCRIPTION (CONTINUED)

Tax Lots 100, 200: COMMENCING at the Northeast corner of Section 5; thence S50°53'34"W, a distance of 2163.68 feet to the POINT OF BEGINNING; thence S00°00'00"E, a distance of 1010.79 feet; thence S23°38'20"W, a distance of 711.80 feet; thence S06°10'23"E, a distance of 1317.48 feet; thence S49°31'56"E, a distance of 127.65 feet; thence N89°58'56"E, a distance of 119.84 feet; thence S79°59'52"W, a distance of 223.71 feet; thence S70°08'29"W, a distance of 69.04 feet; thence S86°28'01"W, a distance of 129.15 feet; thence S58°43'07"W, a distance of 92.36 feet; thence S64°53'27"W, a distance of 156.76 feet; thence S62°22'20"W, a distance of 204.80 feet; thence N70°37'03"W, a distance of 81.08 feet; thence N15°41'05"W, a distance of 114.35 feet; thence N9°31'12"E, a distance of 24.84 feet; thence N00°00'03"E, a distance of 1617.61 feet; thence S89°59'17"W, a distance of 44.13 feet; thence N04°20'16"E, a distance of 407.71 feet; thence N00°22'45"W, a distance of 185.50 feet; thence N00°00'00"E, a distance of 965.17 feet; thence N90°00'00"E, a distance of 856.88 feet to the POINT OF BEGINNING.

Tax Lot 300: COMMENCING at the Northeast corner of Section 5; thence S40°47'23"W, a distance of 3859.41 feet to the POINT OF BEGINNING; thence S00°00'03"W, a distance of 167.61 feet; thence S19°31'12"W, a distance of 24.84 feet; thence N14°14'28"W, a distance of 260.92 feet; thence N01°45'53"E, a distance of 229.83 feet; thence N00°48'03"W, a distance of 240.08 feet; thence N03°30'50"E, a distance of 511.08 feet; thence N01°11'52"E, a distance of 272.45 feet; thence N08°48'26"W, a distance of 85.30 feet; thence N00°46'18"E, a distance of 51.53 feet; thence N89°59'17"E, a distance of 44.13 feet to the POINT OF BEGINNING.

PORTIONS OF THE PROPERTY REMAIN IN THE SFHA (This Additional Consideration applies to the preceding 1 Property.)

Portions of this property, but not the subject of the Determination/Comment document, may remain in the Special Flood Hazard Area. Therefore, any future construction or substantial improvement on the property remains subject to Federal, State/Commonwealth, and local regulations for floodplain management.

ZONE A (This Additional Consideration applies to the preceding 1 Property.)

The National Flood Insurance Program map affecting this property depicts a Special Flood Hazard Area that was determined using the best flood hazard data available to FEMA, but without performing a detailed engineering analysis. The flood elevation used to make this determination is based on approximate methods and has not been formalized through the standard process for establishing base flood elevations published in the Flood Insurance Study. This flood elevation is subject to change.


This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, Engineering Library, 847 South Pickett Street, Alexandria, VA 22304-4605.

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

Exhibit 11

Page 186 of 221

Page 3 of 4	Date: September 06, 2012	Case No.: 12-10-1228A	LOMA
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Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

COMMUNITY AND MAP PANEL INFORMATION				LEGAL PROPERTY DESCRIPTION				
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	COMMUNITY NO.: 410042							
AFFECTED MAP PANEL	NUMBER: 41011C0167D							
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DETERMINATION

LOT	BLOCK/ SECTION	SUBDIVISION	STREET	OUTCOME WHAT IS REMOVED FROM THE SFHA	FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88)	LOWEST ADJACENT GRADE ELEVATION (NAVD 88)	LOWEST LOT ELEVATION (NAVD 88)
-	-	-	-	Portion of Property (TL 100, 200)	X (unshaded)	-	-	13.0 feet

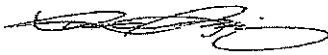
Special Flood Hazard Area (SFHA) - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

ADDITIONAL CONSIDERATIONS (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.)

LEGAL PROPERTY DESCRIPTION

This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Amendment for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the described portion(s) of the property(ies) is/are not located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This document amends the effective NFIP map to remove the subject property from the SFHA located on the effective NFIP map; therefore, the Federal mandatory flood insurance requirement does not apply. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan. A Preferred Risk Policy (PRP) is available for buildings located outside the SFHA. Information about the PRP and how one can apply is enclosed.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, Engineering Library, 847 South Pickett Street, Alexandria, VA 22304-4605.



Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

LEGAL PROPERTY DESCRIPTION (CONTINUED)

Tax Lots 100, 200: COMMENCING at the Northeast corner of Section 5; thence S50°53'34"W, a distance of 2163.68 feet to the POINT OF BEGINNING; thence S00°00'00"E, a distance of 1010.79 feet; thence S23°38'20"W, a distance of 711.80 feet; thence S06°10'23"E, a distance of 1317.48 feet; thence S49°31'56"E, a distance of 127.65 feet; thence N89°58'56"E, a distance of 119.84 feet; thence S79°59'52"W, a distance of 223.71 feet; thence S70°08'29"W, a distance of 69.04 feet; thence S86°28'01"W, a distance of 129.15 feet; thence S58°43'07"W, a distance of 92.36 feet; thence S64°53'27"W, a distance of 156.76 feet; thence S62°22'20"W, a distance of 204.80 feet; thence N70°37'03"W, a distance of 81.08 feet; thence N15°41'05"W, a distance of 114.35 feet; thence N9°31'12"E, a distance of 24.84 feet; thence N00°00'03"E, a distance of 1617.61 feet; thence S89°59'17"W, a distance of 44.13 feet; thence N04°20'16"E, a distance of 407.71 feet; thence N00°22'45"W, a distance of 185.50 feet; thence N00°00'00"E, a distance of 965.17 feet; thence N90°00'00"E, a distance of 856.88 feet to the POINT OF BEGINNING.

Tax Lot 300: COMMENCING at the Northeast corner of Section 5; thence S40°47'23"W, a distance of 3859.41 feet to the POINT OF BEGINNING; thence S00°00'03"W, a distance of 167.61 feet; thence S19°31'12"W, a distance of 24.84 feet; thence N14°14'28"W, a distance of 260.92 feet; thence N01°45'53"E, a distance of 229.83 feet; thence N00°48'03"W, a distance of 240.08 feet; thence N03°30'50"E, a distance of 511.08 feet; thence N01°11'52"E, a distance of 272.45 feet; thence N08°48'26"W, a distance of 85.30 feet; thence N00°46'18"E, a distance of 51.53 feet; thence N89°59'17"E, a distance of 44.13 feet to the POINT OF BEGINNING.

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Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

Exhibit 11

Page 188 of 221



Federal Emergency Management Agency

Washington, D.C. 20472

ADDITIONAL INFORMATION REGARDING LETTERS OF MAP AMENDMENT

When making determinations on requests for Letters of Map Amendment (LOMAs), the Department of Homeland Security's Federal Emergency Management Agency (FEMA) bases its determination on the flood hazard information available at the time of the determination. Requesters should be aware that flood conditions may change or new information may be generated that would supersede FEMA's determination. In such cases, the community will be informed by letter.

Requesters also should be aware that removal of a property (parcel of land or structure) from the Special Flood Hazard Area (SFHA) means FEMA has determined the property is not subject to inundation by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This does not mean the property is not subject to other flood hazards. The property could be inundated by a flood with a magnitude greater than the base flood or by localized flooding not shown on the effective National Flood Insurance Program (NFIP) map.

The effect of a LOMA is it removes the Federal requirement for the lender to require flood insurance coverage for the property described. The LOMA is *not* a waiver of the condition that the property owner maintain flood insurance coverage for the property. *Only* the lender can waive the flood insurance purchase requirement because the lender imposed the requirement: *The property owner must request and receive a written waiver from the lender before canceling the policy.* The lender may determine, on its own as a business decision, that it wishes to continue the flood insurance requirement to protect its financial risk on the loan.

The LOMA provides FEMA's comment on the mandatory flood insurance requirements of the NFIP as they apply to a particular property. A LOMA is not a building permit, nor should it be construed as such. Any development, new construction, or substantial improvement of a property impacted by a LOMA must comply with all applicable State and local criteria and other Federal criteria.

If a lender releases a property owner from the flood insurance requirement, and the property owner decides to cancel the policy and seek a refund, the NFIP will refund the premium paid for the current policy year, provided that no claim is pending or has been paid on the policy during the current policy year. The property owner must provide a written waiver of the insurance requirement from the lender to the property insurance agent or company servicing his or her policy. The agent or company will then process the refund request.

Even though structures are not located in an SFHA, as mentioned above, they could be flooded by a flooding event with a greater magnitude than the base flood. In fact, more than 25 percent of all claims paid by the NFIP are for policies for structures located outside the SFHA in Zones B, C, X (shaded), or X (unshaded). More than one-fourth of all policies purchased under the NFIP protect structures located in these zones. The risk to structures located outside SFHAs is just not as great as the risk to structures located in SFHAs. Finally, approximately 90 percent of all federally declared disasters are caused by flooding, and homeowners insurance does not provide financial protection from this flooding. Therefore, FEMA encourages the widest possible coverage under the NFIP.

LOMAENC-1



CONSULTING ENGINEERS & GEOLOGISTS, INC.

275 Market Avenue • Coos Bay, OR 97420-2228 • Tel: 541/266-9890 • Fax 541/266-9496 • info@shn-coosbay.com

Reference: 611048.122

August 8, 2012

Engineering Library
847 South Pickett Street
Alexandria, VA 22304-4605

Subject: Case Number 12-10-1228A

Dear Ms. Rodriguez:

SHN received your letter on August 6, 2012 stating the legal description did not match the map for Tax Lot 300, of Case No. 12-10-1228A. Please see the enclosed revised legal description and map.

Please feel free to contact me at 541-266-9890 if you have any questions.

Regards,

SHN Consulting Engineers & Geologists, Inc.

A handwritten signature in black ink, appearing to read 'Walter White', is written over a horizontal line.

Walter White, PLS
Senior Surveyor

WEW:dkl

Enclosure: Legal description and map

EXHIBIT "A"

TAX LOT 300, SECTION 5, TOWNSHIP 25 SOUTH, RANGE 13 WEST, W.M.

METES AND BOUNDS DESCRIPTION FOR LOMA REQUEST

A TRACT OF LAND LOCATED IN A PORTION OF THAT PROPERTY AS DESCRIBED IN COOS COUNTY DEED #2011-6530 IN THE SOUTHEAST 1/4 OF SECTION 5, TOWNSHIP 25 SOUTH, RANGE 13 WEST, W.M., COOS COUNTY, OREGON.

SAID TRACT OF LAND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS;

BEGINNING AT THE NORTHWEST CORNER OF THAT PROPERTY AS DESCRIBED AS PARCEL 2 IN COOS COUNTY DEED #2011-6530, SAID POINT BEARS SOUTH 40°47'23" WEST A DISTANCE OF 3859.41 FEET FROM THE NORTHEAST CORNER OF SAID SECTION 5;

THENCE SOUTHERLY ALONG THE WESTERLY BOUNDARY OF SAID DEED, SOUTH 00°00'03" WEST FOR A DISTANCE OF 1617.61 FEET;

THENCE SOUTH 19°31'12" WEST FOR A DISTANCE OF 24.84 FEET TO THE INTERSECTION OF THE TWELVE(12) FOOT CONTOUR OF COOS BAY, SAID POINT BEARS SOUTH 51°02'33" WEST A DISTANCE OF 3103.34 FEET FROM THE EAST 1/4 CORNER OF SAID SECTION 5, SAID TWELVE(12) FOOT CONTOUR BEING THE 100 YEAR FLOOD LINE AS FIELD VERIFIED IN APRIL 2012 ;

THENCE ALONG SAID FLOOD LINE, NORTH 14°14'28" WEST FOR A DISTANCE OF 260.92 FEET;

THENCE NORTH 01°45'53" EAST FOR A DISTANCE OF 229.83 FEET;

THENCE NORTH 00°48'03" WEST FOR A DISTANCE OF 240.08 FEET;

THENCE NORTH 03°30'50" EAST FOR A DISTANCE OF 511.08 FEET;

THENCE NORTH 01°11'52" EAST FOR A DISTANCE OF 272.45 FEET;

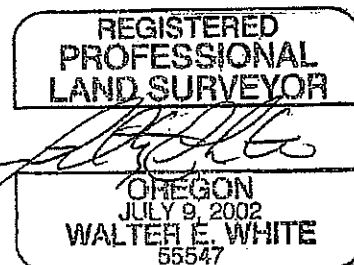
THENCE NORTH 08°48'26" WEST FOR A DISTANCE OF 85.30 FEET;

THENCE NORTH 00°46'18" EAST FOR A DISTANCE OF 51.53 FEET TO THE NORTHERLY BOUNDARY OF SAID DEED;

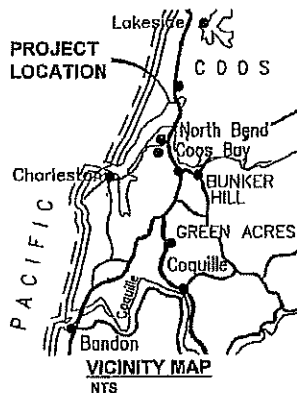
THENCE EASTERLY ALONG SAID NORTHERLY BOUNDARY, NORTH 89°59'17" EAST FOR A DISTANCE OF 44.13 FEET TO THE POINT OF BEGINNING.

SAID TRACT CONTAINING 1.9 ACRES±.

THE BASIS OF BEARING FOR THIS DESCRIPTION IS OREGON STATE PLANE GRID(SOUTH ZONE). THE VERTICAL DATUM USED TO VERIFY ELEVATIONS FOR THIS DESCRIPTION WAS NAVD88.



exp 6/30/14



LEGEND

SYMBOL	INDICATES
⊙	FOUND MONUMENT
—	BASE FLOOD ELEVATION 12.0', FIELD VERIFIED
—	PORTION OF PROPERTY TO BE REMOVED
---	SECTION LINES
---	PROPERTY LINES DEED 2011-6530
POB	POINT OF BEGINNING



LINE TABLE		
LINE#	DIRECTION	LENGTH
L30	S0°00'03"W	1617.61'
L31	S19°31'12"W	24.84'
L32	N14°14'28"W	260.92'
L33	N1°45'53"E	229.83'
L34	N0°48'03"W	240.08'
L35	N3°30'50"E	511.08'
L36	N1°11'52"E	272.45'
L37	N8°48'26"W	85.30'
L38	N0°46'18"E	51.53'
L39	N89°59'17"E	44.13'
L40	S40°47'23"W	3859.41'
L41	S51°02'33"W	3103.34'

REGISTERED
PROFESSIONAL
LAND SURVEYOR

Walter E. White

OREGON
JULY 09, 2002
Walter E. White
55547

EXPIRES 6/30/14

SH
Consulting Engineers
& Geologists, Inc.

Jordan Cove Energy
Ingram Yard
Coos County, Oregon

Exhibit "B"
TL 300, Sec. 5, T25S, R13W
SHN 611048.122

June 2012

611048-MT1final

Figure 1

**Please include this sheet with any
correspondence, data, and/or fees
that you send to FEMA for the case
referenced below.**

If you are sending fees please indicate
the amount here: \$ _____

Case Number: 12-10-1228A

Project ID: SECTION 5, T25S, R13W

Community Name: COOS COUNTY, OREGON
(UNINCORPORATED AREAS)



Federal Emergency Management Agency

Washington, D.C. 20472

September 06, 2012

MR. WALTER WHITE
275 MARKET AVENUE
COOS BAY, OR 97420

CASE NO.: 12-10-1228A
COMMUNITY: COOS COUNTY, OREGON
(UNINCORPORATED AREAS)
COMMUNITY NO.: 410042

DEAR MR. WHITE:

This is in reference to a request that the Federal Emergency Management Agency (FEMA) determine if the property described in the enclosed document is located within an identified Special Flood Hazard Area, the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood), on the effective National Flood Insurance Program (NFIP) map. Using the information submitted and the effective NFIP map, our determination is shown on the attached Letter of Map Amendment (LOMA) Determination Document. This determination document provides additional information regarding the effective NFIP map, the legal description of the property and our determination.

Additional documents are enclosed which provide information regarding the subject property and LOMAs. Please see the List of Enclosures below to determine which documents are enclosed. Other attachments specific to this request may be included as referenced in the Determination/Comment document. If you have any questions about this letter or any of the enclosures, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, Engineering Library, 847 South Pickett Street, Alexandria, VA 22304-4605.

Sincerely,

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

LIST OF ENCLOSURES:

LOMA DETERMINATION DOCUMENT (REMOVAL)

cc: State/Commonwealth NFIP Coordinator
Community Map Repository
Region



Federal Emergency Management Agency

Washington, D.C. 20472

September 06, 2012

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275 MARKET AVENUE
COOS BAY, OR 97420

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Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

COMMUNITY AND MAP PANEL INFORMATION		LEGAL PROPERTY DESCRIPTION
COMMUNITY	COOS COUNTY, OREGON (Unincorporated Areas)	A portion of Sections 4 and 5, Township 25 South, Range 13 West, Willamette Meridian, as described in the Statutory Warranty Deed, recorded as Document No. 20116530, in the Office of the County Clerk, Coos County, Oregon (TL: 100, 200, 300) The portion of property is more particularly described by the following metes and bounds:
	COMMUNITY NO.: 410042	
AFFECTED MAP PANEL	NUMBER: 41011C0167D	
	DATE: 9/25/2009	
FLOODING SOURCE: COOS BAY		APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY: 43.425, -124.268 SOURCE OF LAT & LONG: ARCGIS 10 DATUM: NAD 83

DETERMINATION

LOT	BLOCK/ SECTION	SUBDIVISION	STREET	OUTCOME WHAT IS REMOVED FROM THE SFHA	FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88)	LOWEST ADJACENT GRADE ELEVATION (NAVD 88)	LOWEST LOT ELEVATION (NAVD 88)
-	-	-	-	Portion of Property (TL 300)	X (unshaded)	-	-	13.0 feet

Special Flood Hazard Area (SFHA) - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

ADDITIONAL CONSIDERATIONS (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.)

LEGAL PROPERTY DESCRIPTION
PORTIONS REMAIN IN THE SFHA
ZONE A

This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Amendment for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the described portion(s) of the property(ies) is/are not located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This document amends the effective NFIP map to remove the subject property from the SFHA located on the effective NFIP map; therefore, the Federal mandatory flood insurance requirement does not apply. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan. A Preferred Risk Policy (PRP) is available for buildings located outside the SFHA. Information about the PRP and how one can apply is enclosed.

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Federal Emergency Management Agency

Washington, D.C. 20472

**LETTER OF MAP AMENDMENT
DETERMINATION DOCUMENT (REMOVAL)****ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)****LEGAL PROPERTY DESCRIPTION (CONTINUED)**

Tax Lots 100, 200: COMMENCING at the Northeast corner of Section 5; thence S50°53'34"W, a distance of 2163.68 feet to the POINT OF BEGINNING; thence S00°00'00"E, a distance of 1010.79 feet; thence S23°38'20"W, a distance of 711.80 feet; thence S06°10'23"E, a distance of 1317.48 feet; thence S49°31'56"E, a distance of 127.65 feet; thence N89°58'56"E, a distance of 119.84 feet; thence S79°59'52"W, a distance of 223.71 feet; thence S70°08'29"W, a distance of 69.04 feet; thence S86°28'01"W, a distance of 129.15 feet; thence S58°43'07"W, a distance of 92.36 feet; thence S64°53'27"W, a distance of 156.76 feet; thence S62°22'20"W, a distance of 204.80 feet; thence N70°37'03"W, a distance of 81.08 feet; thence N15°41'05"W, a distance of 114.35 feet; thence N9°31'12"E, a distance of 24.84 feet; thence N00°00'03"E, a distance of 1617.61 feet; thence S89°59'17"W, a distance of 44.13 feet; thence N04°20'16"E, a distance of 407.71 feet; thence N00°22'45"W, a distance of 185.50 feet; thence N00°00'00"E, a distance of 965.17 feet; thence N90°00'00"E, a distance of 856.88 feet to the POINT OF BEGINNING.

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PORTIONS OF THE PROPERTY REMAIN IN THE SFHA (This Additional Consideration applies to the preceding 1 Property.)

Portions of this property, but not the subject of the Determination/Comment document, may remain in the Special Flood Hazard Area. Therefore, any future construction or substantial improvement on the property remains subject to Federal, State/Commonwealth, and local regulations for floodplain management.

ZONE A (This Additional Consideration applies to the preceding 1 Property.)

The National Flood Insurance Program map affecting this property depicts a Special Flood Hazard Area that was determined using the best flood hazard data available to FEMA, but without performing a detailed engineering analysis. The flood elevation used to make this determination is based on approximate methods and has not been formalized through the standard process for establishing base flood elevations published in the Flood Insurance Study. This flood elevation is subject to change.

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Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

Exhibit 11

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Federal Emergency Management Agency

Washington, D.C. 20472

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Federal Emergency Management Agency

Washington, D.C. 20472

ADDITIONAL INFORMATION REGARDING LETTERS OF MAP AMENDMENT

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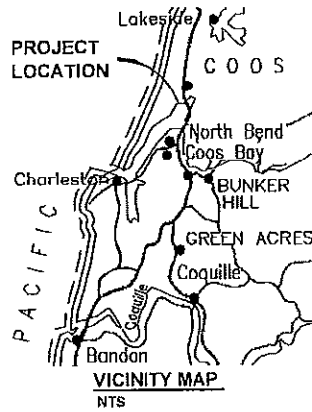
The effect of a LOMA is it removes the Federal requirement for the lender to require flood insurance coverage for the property described. The LOMA is *not* a waiver of the condition that the property owner maintain flood insurance coverage for the property. *Only* the lender can waive the flood insurance purchase requirement because the lender imposed the requirement. *The property owner must request and receive a written waiver from the lender before canceling the policy.* The lender may determine, on its own as a business decision, that it wishes to continue the flood insurance requirement to protect its financial risk on the loan.

The LOMA provides FEMA's comment on the mandatory flood insurance requirements of the NFIP as they apply to a particular property. A LOMA is not a building permit, nor should it be construed as such. Any development, new construction, or substantial improvement of a property impacted by a LOMA must comply with all applicable State and local criteria and other Federal criteria.

If a lender releases a property owner from the flood insurance requirement, and the property owner decides to cancel the policy and seek a refund, the NFIP will refund the premium paid for the current policy year, provided that no claim is pending or has been paid on the policy during the current policy year. The property owner must provide a written waiver of the insurance requirement from the lender to the property insurance agent or company servicing his or her policy. The agent or company will then process the refund request.

Even though structures are not located in an SFHA, as mentioned above, they could be flooded by a flooding event with a greater magnitude than the base flood. In fact, more than 25 percent of all claims paid by the NFIP are for policies for structures located outside the SFHA in Zones B, C, X (shaded), or X (unshaded). More than one-fourth of all policies purchased under the NFIP protect structures located in these zones. The risk to structures located outside SFHAs is just not as great as the risk to structures located in SFHAs. Finally, approximately 90 percent of all federally declared disasters are caused by flooding, and homeowners insurance does not provide financial protection from this flooding. Therefore, FEMA encourages the widest possible coverage under the NFIP.

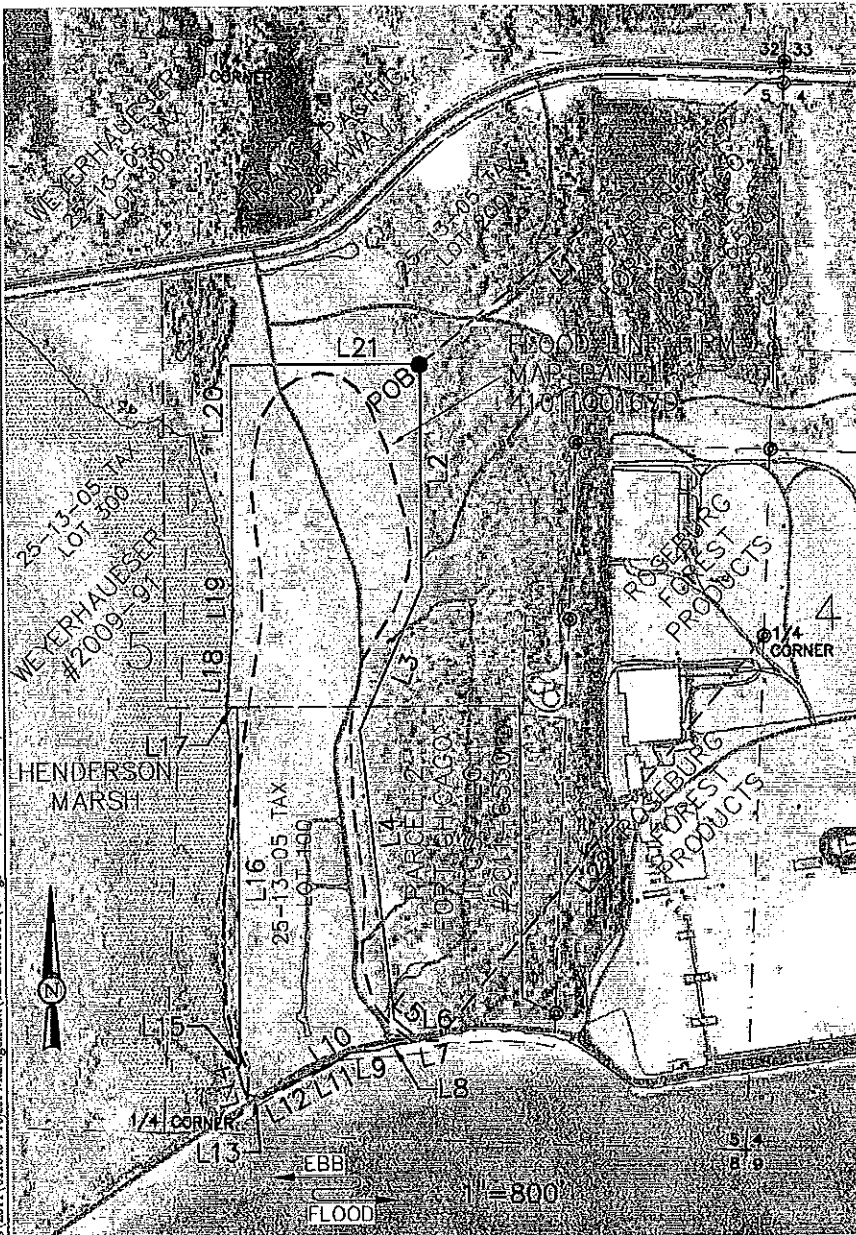
LOMAENC-1



LEGEND

SYMBOL	INDICATES
⊙	FOUND MONUMENT
—	BASE FLOOD ELEVATION 12.0', FIELD VERIFIED
—	PORTION OF PROPERTY TO BE REMOVED
---	SECTION LINES
---	PROPERTY LINES DEED 2011-6530
POB	POINT OF BEGINNING

LINE TABLE		
LINE#	DIRECTION	LENGTH
L1	S50°53'34"W	2163.68'
L2	S0°00'00"E	1010.79'
L3	S23°38'20"W	711.80'
L4	S6°10'23"E	1317.48'
L5	S49°31'56"E	127.65'
L6	NB9°58'56"E	119.84'
L7	S79°59'52"W	223.71'
L8	S70°08'29"W	69.04'
L9	S86°28'01"W	129.15'
L10	S58°43'07"W	92.36'
L11	S64°53'27"W	156.76'
L12	S62°22'20"W	204.80'
L13	N70°37'03"W	81.08'
L14	N15°41'05"W	114.35'
L15	N19°31'12"E	24.84'
L16	N0°00'03"E	1617.61'
L17	S89°59'17"W	44.13'
L18	N4°20'16"E	407.71'
L19	N0°22'45"W	185.50'
L20	N0°00'00"E	965.17'
L21	N90°00'00"E	856.88'
L22	S39°28'18"W	2342.79'



REGISTERED
PROFESSIONAL
LAND SURVEYOR

Walter E. White

OREGON
JULY 08, 2002
Walter E. White
55547

EXPIRES 6/30/14

Exhibit "B"

TL 100 & 200, Sec. 5, T25S, R13W
SHN 611048.122

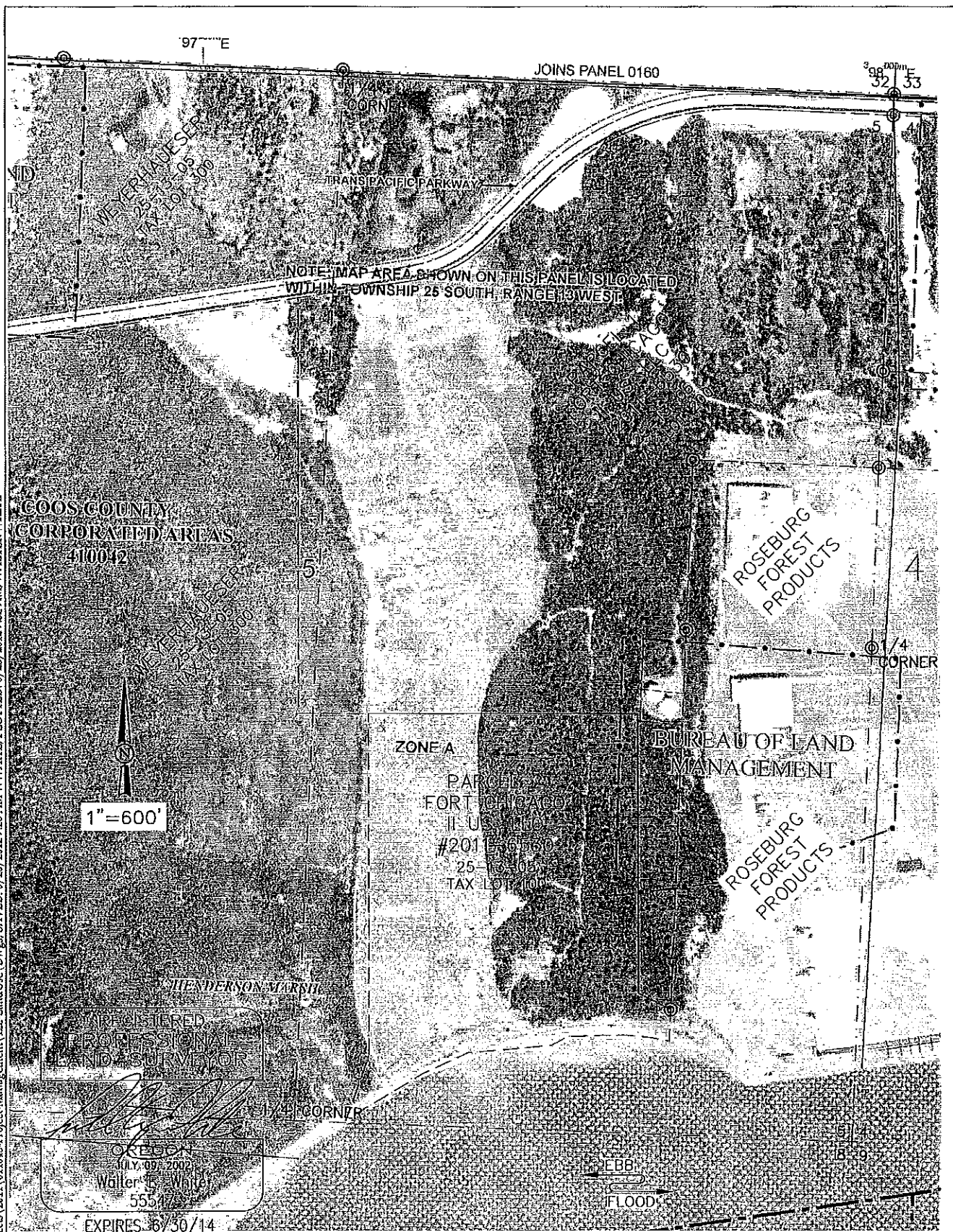
SHN
Consulting Engineers
& Geologists, Inc.

Jordan Cove Energy
Ingram Yard
Coos County, Oregon

June 2012

611048-MT1final

Figure 1
Exhibit 11



\\Constrsysr\1\projects\2011\611048-Project-Management\122-LandUse\Drawgs_SAVED: 6/28/2012 7:52 AM WWHITE. PLOTTED: 6/28/2012 7:52 AM WALTER WHITE

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Consulting Engineers
& Geologists, Inc.

June 2012

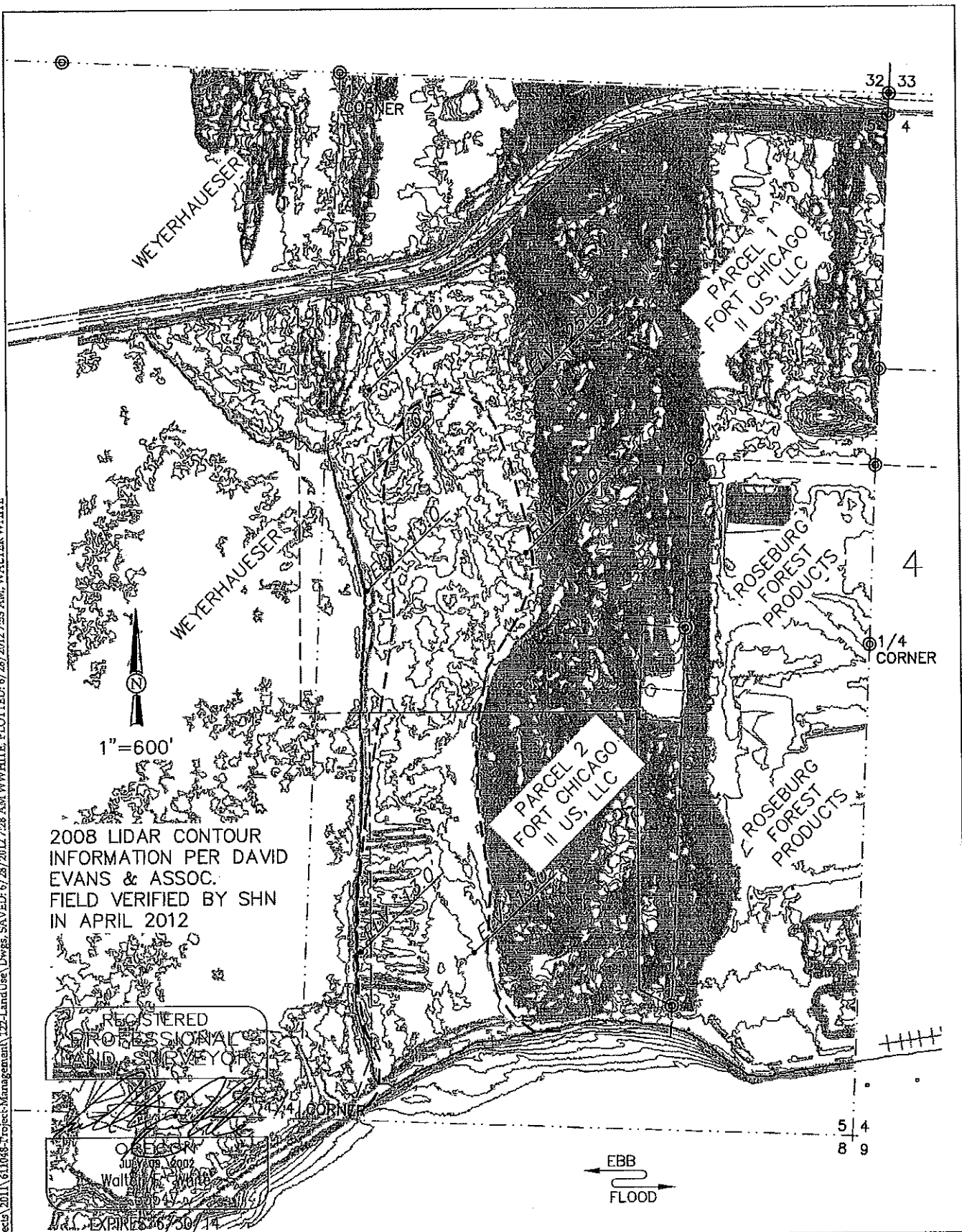
Jordan Cove Energy
Ingram Yard
Coos County, Oregon

611048-MT1final

FIRM Overlay
TL 100 & 200, Sec. 5, T25S, R13W
SHN 611048.122

Figure 2
Exhibit 11

\\Cosbayvri\projects\2011\611048-Project-Management\122-LandUse\Draws\SAVED: 6/28/2012 7:53 AM.WALTER WHITE



SH
Consulting Engineers
& Geologists, Inc.

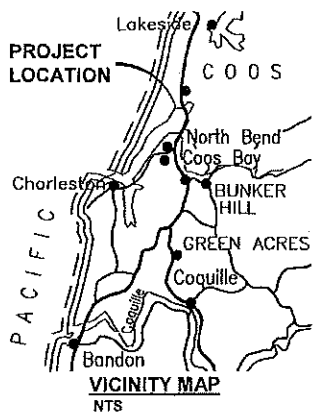
June 2012

Jordan Cove Energy
Ingram Yard
Coos County, Oregon

611048-MT1final

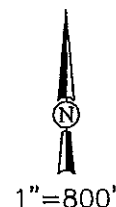
LIDAR Contours
TL 100 & 200, Sec. 5, T25S, R13W
SHN 611048.122

Figure 3
Exhibit 11

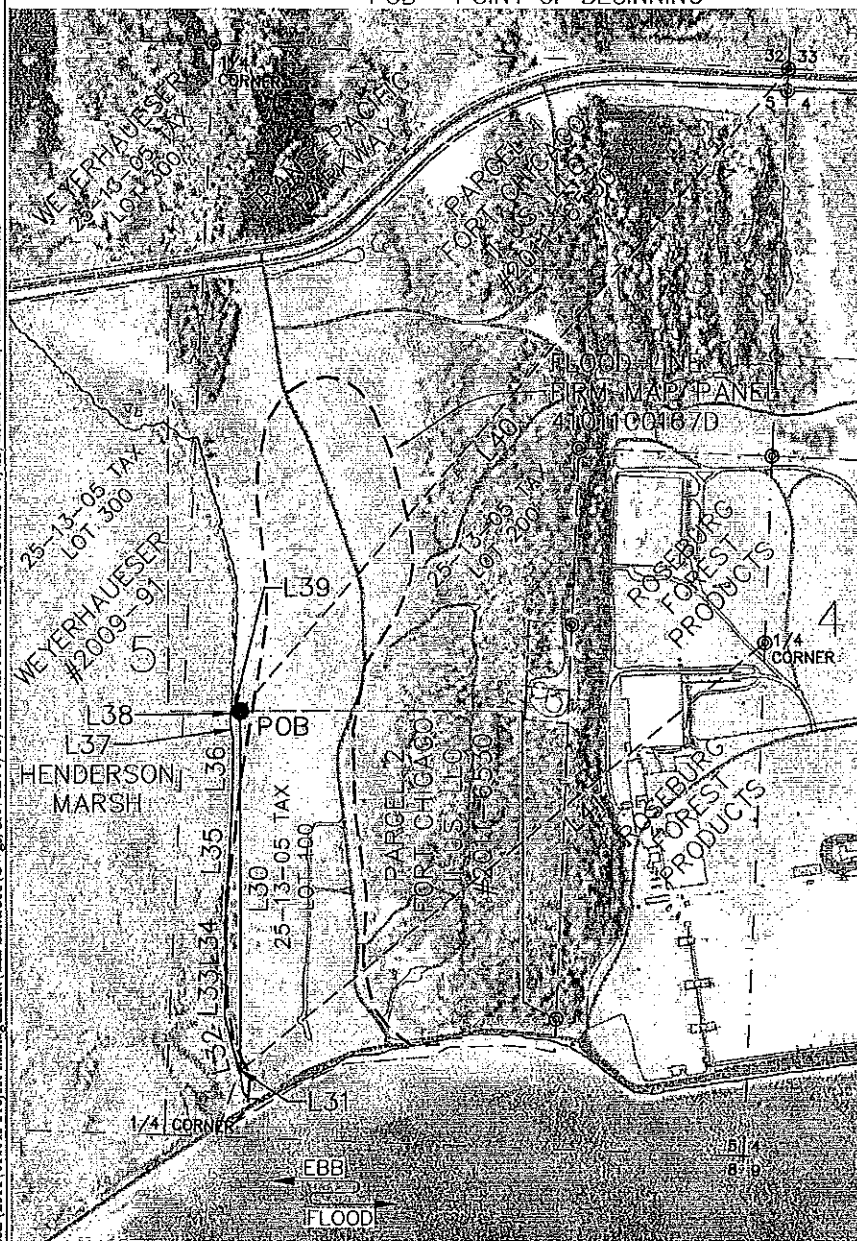


LEGEND

SYMBOL	INDICATES
⊙	FOUND MONUMENT
—	BASE FLOOD ELEVATION 12.0', FIELD VERIFIED
—	PORTION OF PROPERTY TO BE REMOVED
- - -	SECTION LINES
- - -	PROPERTY LINES DEED 2011-6530



POB POINT OF BEGINNING



LINE TABLE

LINE#	DIRECTION	LENGTH
L30	S0°00'03"W	1617.61'
L31	S19°31'12"W	24.84'
L32	N14°14'28"W	260.92'
L33	N1°45'53"E	229.83'
L34	N0°48'03"W	240.08'
L35	N3°30'50"E	511.08'
L36	N1°11'52"E	272.45'
L37	N8°48'26"W	85.30'
L38	N0°46'18"E	51.53'
L39	N89°59'17"E	44.13'
L40	S40°47'23"W	3859.41'
L41	S51°02'33"W	3103.34'

REGISTERED
PROFESSIONAL
LAND SURVEYOR

Walter E. White

OREGON
JULY 09, 2002
Walter E. White
55547

EXPIRES 6/30/14

SH
Consulting Engineers
& Geologists, Inc.

Jordan Cove Energy
Ingram Yard
Coos County, Oregon

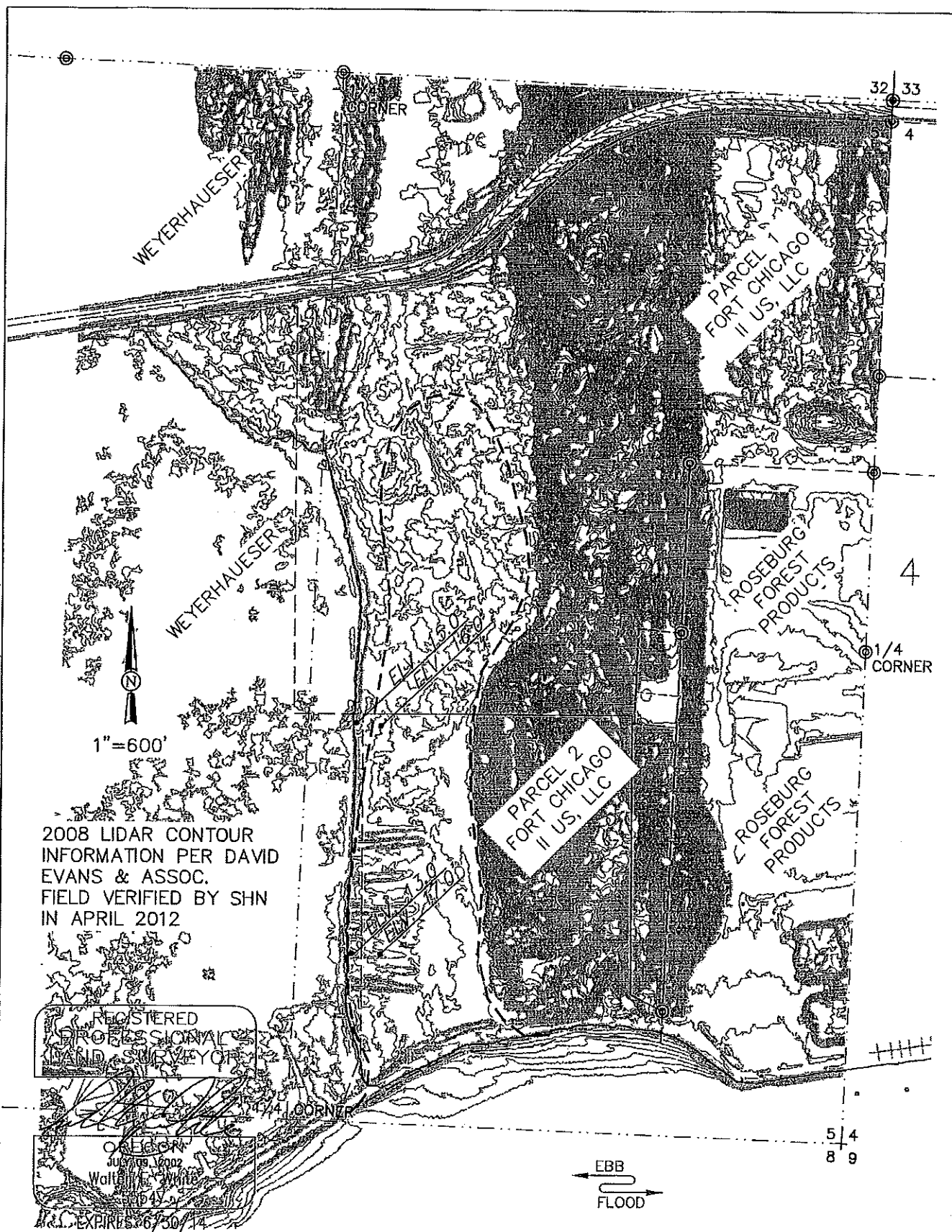
June 2012

611048-MT1final

Exhibit "B"
TL 300, Sec. 5, T25S, R13W
SHN 611048.122

Figure 1
Exhibit 11

\\Crosby\svr1\projects\2011\611048-Project-Management\122-Land-Use\Draws_SAVED: 6/28/2012 7:28 AM WWHITE, PLOTTED: 6/28/2012 7:55 AM, WALTER WHITE



SH
Consulting Engineers
& Geologists, Inc.

Jordan Cove Energy
Ingram Yard
Coos County, Oregon

LIDAR Contours
TL 300, Sec. 5, T25S, R13W
SHN 611048.122

June 2012

611048-MT1final

Figure 3
Exhibit 11



Federal Emergency Management Agency

Washington, D.C. 20472

May 07, 2013

MR. WALTER WHITE
275 MARKET AVENUE
COOS BAY, OR 97420

CASE NO.: 13-10-0670A
COMMUNITY: COOS COUNTY, OREGON
(UNINCORPORATED AREAS)
COMMUNITY NO.: 410042

DEAR MR. WHITE:

This is in reference to a request that the Federal Emergency Management Agency (FEMA) determine if the property described in the enclosed document is located within an identified Special Flood Hazard Area, the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood), on the effective National Flood Insurance Program (NFIP) map. Using the information submitted and the effective NFIP map, our determination is shown on the attached Letter of Map Amendment (LOMA) Determination Document. This determination document provides additional information regarding the effective NFIP map, the legal description of the property and our determination.

Additional documents are enclosed which provide information regarding the subject property and LOMAs. Please see the List of Enclosures below to determine which documents are enclosed. Other attachments specific to this request may be included as referenced in the Determination/Comment document. If you have any questions about this letter or any of the enclosures, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.

Sincerely,

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

LIST OF ENCLOSURES:

LOMA DETERMINATION DOCUMENT (REMOVAL)

cc: State/Commonwealth NFIP Coordinator
Community Map Repository
Region



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

COMMUNITY AND MAP PANEL INFORMATION		LEGAL PROPERTY DESCRIPTION
COMMUNITY	COOS COUNTY, OREGON (Unincorporated Areas)	A portion of Government Lot 2, Section 3, Township 25 South, Range 13 West, Willamette Meridian, and a portion of Government Lots 1 and 2, Section 4, Township 25 South, Range 13 West, Willamette Meridian, and a parcel of land, as described in the Statutory Special Warranty Deed (Mill Site), recorded as Document No. 2012 10676, in the Office of the County Clerk, Coos County, Oregon
	COMMUNITY NO.: 410042	
AFFECTED MAP PANEL	NUMBER: 41011C0167D; 41011C0186D	
	DATE: 9/25/2009; 9/25/2009	The portion of property is more particularly described by the following metes and bounds:

FLOODING SOURCE: COOS BAY

APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY: 43.433, -124.244

SOURCE OF LAT & LONG: ARCGIS 10

DATUM: NAD 83

DETERMINATION

LOT	BLOCK/ SECTION	SUBDIVISION	STREET	OUTCOME WHAT IS REMOVED FROM THE SFHA	FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88)	LOWEST ADJACENT GRADE ELEVATION (NAVD 88)	LOWEST LOT ELEVATION (NAVD 88)
-	-	-	92730 Trans-Pacific Lane	Portion of Property (TL: 100A)	X (unshaded)	12.2 feet	-	13.0 feet

Special Flood Hazard Area (SFHA) - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

ADDITIONAL CONSIDERATIONS (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.)


LEGAL PROPERTY DESCRIPTION STUDY UNDERWAY

DETERMINATION TABLE (CONTINUED)

PORTIONS REMAIN IN THE SFHA

This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Amendment for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the described portion(s) of the property(ies) is/are not located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This document amends the effective NFIP map to remove the subject property from the SFHA located on the effective NFIP map; therefore, the Federal mandatory flood insurance requirement does not apply. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan. A Preferred Risk Policy (PRP) is available for buildings located outside the SFHA. Information about the PRP and how one can apply is enclosed.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.


Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

LEGAL PROPERTY DESCRIPTION (CONTINUED)

TL 100A:

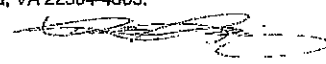
COMMENCING at the north Quarter corner of Section 4, Township 25 South, Range 13 West, Willamette Meridian; thence S01°46'53"E, 1313.85 feet to the POINT OF BEGINNING; thence N47°19'12"E, 169.33 feet; thence N58°02'26"E, 149.59 feet; thence N88°09'55"E, 1437.15 feet; thence S78°05'05"E, 89.81 feet; thence S47°44'43"E, 155.79 feet; thence S16°25'43"E, 147.62 feet; thence S33°54'49"E, 556.28 feet; thence S27°44'31"E, 506.15 feet; thence S02°34'08"W, 220.70 feet; thence N39°40'48"W, 146.05 feet; thence N30°06'27"W, 453.50 feet; thence N31°19'51"W, 112.23 feet; thence N46°38'53"W, 72.72 feet; thence N58°31'54"W, 427.26 feet; thence N02°12'34"E, 93.73 feet; thence N19°02'34"W, 221.24 feet; thence N38°40'42"W, 26.31 feet; thence N33°38'00"E, 16.26 feet; thence N66°26'41"E, 53.03 feet; thence N33°51'10"E, 41.91 feet; thence N61°53'11"E, 33.94 feet; thence N23°52'02"E, 7.65 feet; thence N15°14'57"W, 4.97 feet; thence N38°38'09"W, 4.42 feet; thence S80°14'36"W, 50.84 feet; thence S62°00'14"W, 49.65 feet; thence S65°28'39"W, 63.35 feet; thence S56°19'11"W, 40.51 feet; thence S82°48'36"W, 40.58 feet; thence S71°54'25"W, 164.25 feet; thence N89°50'27"W, 287.49 feet; thence N83°54'04"W, 71.70 feet; thence S87°53'19"W, 408.19 feet; thence S89°36'28"W, 385.25 feet; thence S50°39'41"W, 157.59 feet; thence S02°37'15"W, 45.18 feet; thence S13°20'07"E, 96.35 feet; thence S01°52'17"E, 44.09 feet; thence N41°11'13"W, 110.81 feet; thence N02°41'16"E, 203.06 feet to the POINT OF BEGINNING.

TL 200A:

COMMENCING at the northwest corner of Section 3, Township 25 South, Range 13 West, Willamette Meridian; thence S02°34'08"W, 2163.09 feet to the POINT OF BEGINNING; thence S47°30'39"E, 78.70 feet; thence S39°21'53"E, 88.02 feet; thence S47°48'11"E, 121.65 feet; thence S54°11'51"E, 147.92 feet; thence S67°46'24"E, 41.38 feet; thence S75°58'43"E, 50.25 feet; thence S86°11'22"E, 78.52 feet; thence S87°39'56"E, 85.38 feet; thence N81°07'42"E, 56.39 feet; thence N71°35'00"E, 49.54 feet; thence N68°26'11"E, 82.17 feet; thence S38°25'44"E, 27.21 feet; thence N67°40'46"E, 28.13 feet; thence S66°05'28"E, 34.47 feet; thence S03°38'01"W, 22.41 feet; thence S85°33'22"W, 40.40 feet; thence S35°28'12"W, 66.82 feet; thence S81°41'59"W, 161.28 feet; thence S82°12'32"W, 139.38 feet; thence N89°00'23"W, 139.07 feet; thence N71°24'37"W, 56.73 feet; thence N61°20'18"W, 103.69 feet; thence N53°02'36"W, 91.40 feet; thence N44°48'09"W, 123.51 feet; thence N39°40'48"W, 22.89 feet; thence N02°34'08"E, 187.87 feet to the POINT OF BEGINNING.

DETERMINATION TABLE (CONTINUED)

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMA Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.


Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

LOT	BLOCK/ SECTION	SUBDIVISION	STREET	OUTCOME WHAT IS REMOVED FROM THE SFHA	FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88)	LOWEST ADJACENT GRADE ELEVATION (NAVD 88)	LOWEST LOT ELEVATION (NAVD 88)
—	—	—	92730 Trans-Pacific Lane	Portion of Property (TL: 200A)	X (unshaded)	12.2 feet	—	13.0 feet

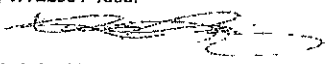
PORTIONS OF THE PROPERTY REMAIN IN THE SFHA (This Additional Consideration applies to the preceding 2 Properties.)

Portions of this property, but not the subject of the Determination/Comment document, may remain in the Special Flood Hazard Area. Therefore, any future construction or substantial improvement on the property remains subject to Federal, State/Commonwealth, and local regulations for floodplain management.

STUDY UNDERWAY (This Additional Consideration applies to all properties in the LOMA DETERMINATION DOCUMENT (REMOVAL))

This determination is based on the flood data presently available. However, the Federal Emergency Management Agency is currently revising the National Flood Insurance Program (NFIP) map for the community. New flood data could be generated that may affect this property. When the new NFIP map is issued it will supersede this determination. The Federal requirement for the purchase of flood insurance will then be based on the newly revised NFIP map.

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMA Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.


Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration



Federal Emergency Management Agency

Washington, D.C. 20472

ADDITIONAL INFORMATION REGARDING LETTERS OF MAP AMENDMENT

When making determinations on requests for Letters of Map Amendment (LOMAs), the Department of Homeland Security's Federal Emergency Management Agency (FEMA) bases its determination on the flood hazard information available at the time of the determination. Requesters should be aware that flood conditions may change or new information may be generated that would supersede FEMA's determination. In such cases, the community will be informed by letter.

Requesters also should be aware that removal of a property (parcel of land or structure) from the Special Flood Hazard Area (SFHA) means FEMA has determined the property is not subject to inundation by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This does not mean the property is not subject to other flood hazards. The property could be inundated by a flood with a magnitude greater than the base flood or by localized flooding not shown on the effective National Flood Insurance Program (NFIP) map.

The effect of a LOMA is it removes the Federal requirement for the lender to require flood insurance coverage for the property described. The LOMA *is not* a waiver of the condition that the property owner maintain flood insurance coverage for the property. *Only* the lender can waive the flood insurance purchase requirement because the lender imposed the requirement. *The property owner must request and receive a written waiver from the lender before canceling the policy.* The lender may determine, on its own as a business decision, that it wishes to continue the flood insurance requirement to protect its financial risk on the loan.

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If a lender releases a property owner from the flood insurance requirement, and the property owner decides to cancel the policy and seek a refund, the NFIP will refund the premium paid for the current policy year, provided that no claim is pending or has been paid on the policy during the current policy year. The property owner must provide a written waiver of the insurance requirement from the lender to the property insurance agent or company servicing his or her policy. The agent or company will then process the refund request.

Even though structures are not located in an SFHA, as mentioned above, they could be flooded by a flooding event with a greater magnitude than the base flood. In fact, more than 25 percent of all claims paid by the NFIP are for policies for structures located outside the SFHA in Zones B, C, X (shaded), or X (unshaded). More than one-fourth of all policies purchased under the NFIP protect structures located in these zones. The risk to structures located outside SFHAs is just not as great as the risk to structures located in SFHAs. Finally, approximately 90 percent of all federally declared disasters are caused by flooding, and homeowners insurance does not provide financial protection from this flooding. Therefore, FEMA encourages the widest possible coverage under the NFIP.

LOMAENC-1

The NFIP offers two types of flood insurance policies to property owners: the low-cost Preferred Risk Policy (PRP) and the Standard Flood Insurance Policy (SFIP). The PRP is available for 1- to 4-family residential structures located outside the SFHA with little or no loss history. The PRP is available for townhouse/rowhouse-type structures, but is not available for other types of condominium units. The SFIP is available for all other structures. Additional information on the PRP and how a property owner can qualify for this type of policy may be obtained by calling the Flood Insurance Information Hotline, toll free, at 1-800427-4661. Before making a final decision about flood insurance coverage, FEMA strongly encourages property owners to discuss their individual flood risk situations and insurance needs with an insurance agent or company.

FEMA has established "Grandfather" rules to benefit flood insurance policyholders who have maintained continuous coverage. Property owners may wish to note also that, if they live outside but on the fringe of the SFHA shown on an effective NFIP map and the map is revised to expand the SFHA to include their structure(s), their flood insurance policy rates will not increase as long as the coverage for the affected structure(s) has been continuous. Property owners would continue to receive the lower insurance policy rates.

LOMAs are based on minimum criteria established by the NFIP. State, county, and community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction in the SFHA. If a State, county, or community has adopted more restrictive and comprehensive floodplain management criteria, these criteria take precedence over the minimum Federal criteria.

In accordance with regulations adopted by the community when it made application to join the NFIP, letters issued to amend an NFIP map must be attached to the community's official record copy of the map. That map is available for public inspection at the community's official map repository. Therefore, FEMA sends copies of all such letters to the affected community's official map repository.

When a restudy is undertaken, or when a sufficient number of revisions or amendments occur on particular map panels, FEMA initiates the printing and distribution process for the affected panels. FEMA notifies community officials in writing when affected map panels are being physically revised and distributed. In such cases, FEMA attempts to reflect the results of the LOMA on the new map panel. If the results of particular LOMAs cannot be reflected on the new map panel because of scale limitations, FEMA notifies the community in writing and revalidates the LOMAs in that letter. LOMAs revalidated in this way usually will become effective 1 day after the effective date of the revised map.

LOMAENC-1

DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY
ELEVATION FORM

O.M.B. NO. 1660-0015
Expires February 28, 2014

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this data collection is estimated to average 1.25 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and submitting the form. This collection is required to obtain or retain benefits. You are not required to respond to this collection of information unless a valid OMB control number is displayed on this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington, VA 20598-3005, Paperwork Reduction Project (1660-0015). NOTE: Do not send your completed form to this address.

This form must be completed for requests and must be completed and signed by a registered professional engineer or licensed land surveyor. A DHS - FEMA National Flood Insurance Program (NFIP) Elevation Certificate may be submitted in lieu of this form for single structure requests.

For requests to remove a structure on natural grade OR on engineered fill from the Special Flood Hazard Area (SFHA), submit the lowest adjacent grade (the lowest ground touching the structure), including an attached deck or garage. For requests to remove an entire parcel of land from the SFHA, provide the lowest lot elevation; or, if the request involves an area described by metes and bounds, provide the lowest elevation within the metes and bounds description. All measurements are to be rounded to nearest tenth of a foot. In order to process your request, all information on this form must be completed *in its entirety*. Incomplete submissions will result in processing delays.

1. NFIP Community Number: 4110042 Property Name or Address: South Dunes
2. Are the elevations listed below based on ☒ existing or ☐ proposed conditions? (Check one)
3. For the existing or proposed structures listed below, what are the types of construction? (check all that apply)
☐ crawl space ☐ slab on grade ☐ basement/enclosure ☐ other (explain)
4. Has DHS - FEMA identified this area as subject to land subsidence or uplift? (see instructions) ☐ Yes ☒ No
If yes, what is the date of the current re-leveling? / (month/year)
5. What is the elevation datum? ☐ NGVD 29 ☒ NAVD 88 ☐ Other (explain)
If any of the elevations listed below were computed using a datum different than the datum used for the effective Flood Insurance Rate Map (FIRM) (e.g., NGVD 29 or NAVD 88), what was the conversion factor?
Local Elevation +/- ft. = FIRM Datum
6. Please provide the Latitude and Longitude of the most upstream edge of the **structure** (in decimal degrees to the nearest fifth decimal place):
Indicate Datum: ☐ WGS84 ☐ NAD83 ☐ NAD27 Lat. NA. Long. NA.
Please provide the Latitude and Longitude of the most upstream edge of the **property** (in decimal degrees to the nearest fifth decimal place):
Indicate Datum: ☐ WGS84 ☒ NAD83 ☐ NAD27 Lat. 43.433414 Long. -124.249869

Address	Lot Number	Block Number	Lowest Lot Elevation*	Lowest Adjacent Grade To Structure	Base Flood Elevation	BFE Source
TAX LOT 100A			13.0	NA	12.0	FIRM MAP NO. 41011C186D
TAX LOT 200A			13.0	NA	12.0	FIRM MAP NO. 41011C186D

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: Walter White License No.: 55547 Expiration Date: June 30, 2014
Company Name: SHN Consulting Engineers & Geologist, Inc Telephone No.: 541-266-9890
Email: wwwhite@shn-engr.com Fax No. 541-266-9496
Signature: Date: February 14, 2013

* For requests involving a portion of property, include the lowest ground elevation within the metes and bounds description.
Please note: If the Lowest Adjacent Grade to Structure is the only elevation provided, a determination will be issued for the structure only.

Seal (optional)

Continued from Page 1.

[illegible]

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: Walter White

License No.: 55547

Expiration Date: June 30, 2014

Company Name: SHN Consulting Eng^r Geo

Telephone No.: 541-266-9890

Email: uxwhite@shn-engr.com

Fax No. 541-266-9496

Signature: 

Date March 6, 2013

*For requests involving a portion of property, include the lowest ground elevation within the meter and bounds description. Please note: If the Lowest Adjacent Grade to Structure is the only elevation provided, a determination will be issued for the structure only.

Seal (optional)

EXHIBIT "A"

TAX LOT 200, SECTION 3, TOWNSHIP 25 SOUTH, RANGE 13 WEST, W.M.

METES AND BOUNDS DESCRIPTION FOR LOMA REQUEST

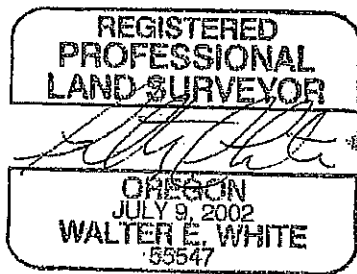
A TRACT OF LAND LOCATED IN A PORTION OF THAT PROPERTY AS DESCRIBED IN COOS COUNTY DEED INSTRUMENT #2012-10676 IN SECTION 3, TOWNSHIP 25 SOUTH, RANGE 13 WEST, W.M., COOS COUNTY, OREGON.

SAID TRACT OF LAND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS;

BEGINNING AT A POINT ON THE WESTERLY SECTION LINE OF SAID SECTION, SAID POINT BEING SOUTH 2°34'08" WEST A DISTANCE OF 2163.09 FEET FROM THE NORTHWEST CORNER OF SAID SECTION;
THENCE LEAVING SAID SECTION LINE, SOUTH 47°30'39" EAST FOR A DISTANCE OF 78.70 FEET;
THENCE SOUTH 39°21'53" EAST FOR A DISTANCE OF 88.02 FEET;
THENCE SOUTH 47°48'11" EAST FOR A DISTANCE OF 121.65 FEET;
THENCE SOUTH 54°11'51" EAST FOR A DISTANCE OF 147.92 FEET;
THENCE SOUTH 67°46'24" EAST FOR A DISTANCE OF 41.38 FEET;
THENCE SOUTH 75°58'43" EAST FOR A DISTANCE OF 50.25 FEET;
THENCE SOUTH 86°11'22" EAST FOR A DISTANCE OF 78.52 FEET;
THENCE SOUTH 87°39'56" EAST FOR A DISTANCE OF 85.38 FEET;
THENCE NORTH 81°07'42" EAST FOR A DISTANCE OF 56.39 FEET;
THENCE NORTH 71°35'00" EAST FOR A DISTANCE OF 49.54 FEET;
THENCE NORTH 68°26'11" EAST FOR A DISTANCE OF 82.17 FEET TO A POINT ON THE TWELVE(12) FOOT CONTOUR OF COOS BAY;
THENCE ALONG SAID CONTOUR, SOUTH 38°25'44" EAST FOR A DISTANCE OF 27.21 FEET;
THENCE NORTH 67°40'46" EAST FOR A DISTANCE OF 28.13 FEET;
THENCE SOUTH 66°05'28" EAST FOR A DISTANCE OF 34.47 FEET;
THENCE SOUTH 3°38'01" WEST FOR A DISTANCE OF 22.41 FEET;
THENCE SOUTH 85°33'22" WEST FOR A DISTANCE OF 40.40 FEET;
THENCE SOUTH 35°28'12" WEST FOR A DISTANCE OF 66.82 FEET;
THENCE SOUTH 81°41'59" WEST FOR A DISTANCE OF 161.28 FEET;
THENCE SOUTH 82°12'32" WEST FOR A DISTANCE OF 139.38 FEET;
THENCE NORTH 89°00'23" WEST FOR A DISTANCE OF 139.07 FEET;
THENCE NORTH 71°24'37" WEST FOR A DISTANCE OF 56.73 FEET;
THENCE NORTH 61°20'18" WEST FOR A DISTANCE OF 103.69 FEET;
THENCE NORTH 53°02'36" WEST FOR A DISTANCE OF 91.40 FEET;
THENCE NORTH 44°48'09" WEST FOR A DISTANCE OF 123.51 FEET;
THENCE NORTH 39°40'48" WEST FOR A DISTANCE OF 22.89 FEET TO A POINT ON SAID SECTION LINE;
THENCE ALONG SAID SECTION LINE, NORTH 2°34'08" EAST FOR A DISTANCE OF 187.87 FEET TO THE POINT OF BEGINNING.

SAID TRACT CONTAINING 2.3 ACRES±.

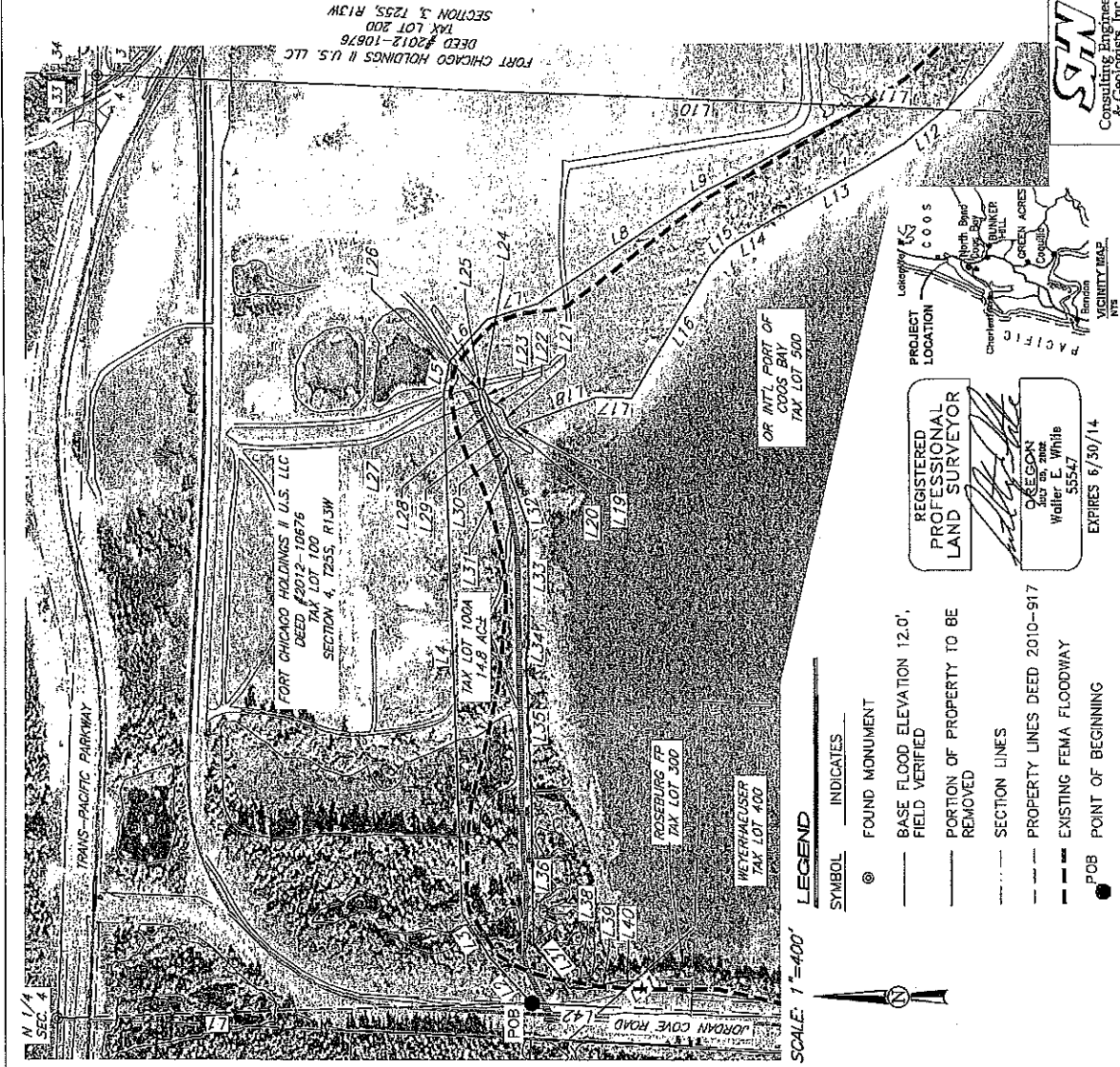
THE BASIS OF BEARING FOR THIS DESCRIPTION IS OREGON STATE PLANE
GRID(SOUTH ZONE). THE VERTICAL DATUM USED TO VERIFY ELEVATIONS FOR THIS
DESCRIPTION WAS NAVD88.



exp. 6/30/14



Eureka, CA | Arcata, CA | Redding, CA | Willits, CA | Coos Bay, OR | Klamath Falls, OR



LINE TABLE			
LINE#	DIRECTION	LENGTH	
L1	S1°46'53"E	1313.85'	
L2	N47°19'12"E	169.33'	
L3	N58°02'26"E	149.59'	
L4	N88°09'55"E	1437.15'	
L5	S78°05'05"E	89.81'	
L6	S47°44'43"E	155.79'	
L7	S16°25'43"E	147.62'	
L8	S33°54'49"E	556.28'	
L9	S27°44'31"E	506.15'	
L10	S2°34'08"W	2130.26'	
L11	S2°34'08"W	220.70'	
L12	N39°40'48"W	146.05'	
L13	N30°06'27"W	453.50'	
L14	N31°19'51"W	112.23'	
L15	N46°38'53"W	72.72'	
L16	N58°31'54"W	427.26'	
L17	N2°12'34"E	93.73'	
L18	N19°02'34"W	221.24'	
L19	N38°40'42"W	26.31'	
L20	N33°38'00"E	16.26'	
L21	N66°26'41"E	53.03'	

LINE TABLE			
LINE#	DIRECTION	LENGTH	
L22	N33°51'10"E	41.91'	
L23	N61°53'11"E	33.94'	
L24	N23°52'02"E	7.65'	
L25	N15°14'57"W	4.97'	
L26	N38°38'09"W	4.42'	
L27	S80°14'36"W	50.84'	
L28	S62°00'14"W	49.65'	
L29	S65°28'39"W	63.35'	
L30	S56°19'11"W	40.51'	
L31	S82°48'36"W	40.58'	
L32	S71°54'25"W	164.25'	
L33	N89°50'27"W	287.49'	
L34	N83°54'04"W	71.70'	
L35	S87°53'19"W	408.19'	
L36	S89°36'28"W	385.25'	
L37	S50°39'41"W	157.59'	
L38	S2°37'15"W	45.18'	
L39	S13°20'07"E	96.35'	
L40	S1°52'17"E	44.09'	
L41	N41°11'13"W	110.81'	
L42	N2°41'16"E	203.06'	

TL 100, Sec. 4, T25S, R13W, W.M.

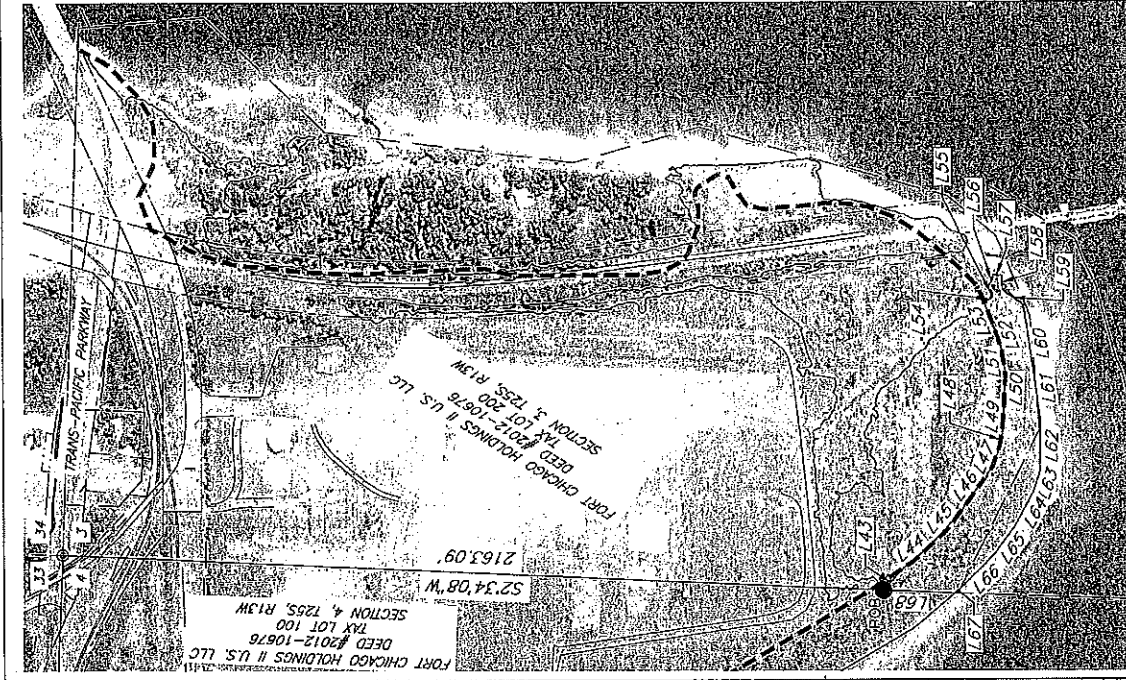
JCEP	Exhibit "B"
Land Use	LAND TO BE REMOVED
Coos County, Oregon	SEN 61048122
MARCH 2013	Figure 1

SWW
Consulting Engineers
& Geologists, Inc.

REGISTERED
PROFESSIONAL
LAND SURVEYOR
[Signature]
OREGON
Waller E. White
55547
EXPIRES 6/30/14

- LEGEND**
- SYMBOL INDICATES
- ⊙ FOUND MONUMENT
 - BASE FLOOD ELEVATION 12.0'
 - FIELD VERIFIED
 - PORTION OF PROPERTY TO BE REMOVED
 - SECTION LINES
 - PROPERTY LINES DEED 2010-917
 - EXISTING FEMA FLOODWAY
 - POB POINT OF BEGINNING

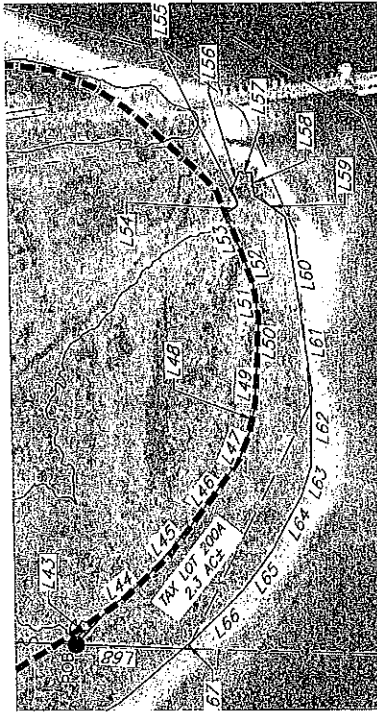
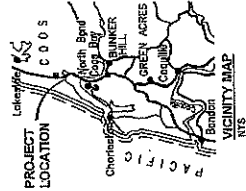
SCALE: 1"=400'



LINE TABLE		
LINE#	DIRECTION	LENGTH
L43	S47°30'39"E	78.70'
L44	S39°21'53"E	88.02'
L45	S47°48'11"E	121.65'
L46	S54°11'51"E	147.92'
L47	S67°46'24"E	41.38'
L48	S75°58'43"E	50.25'
L49	S86°11'22"E	78.52'
L50	S87°39'56"E	85.38'
L51	N81°07'42"E	56.39'
L52	N71°35'00"E	49.54'
L53	N68°26'11"E	82.17'
L54	S38°25'44"E	27.21'
L55	N67°40'46"E	28.13'
L56	S66°05'28"E	34.47'
L57	S3°38'01"W	22.41'
L58	S85°33'22"W	40.40'
L59	S35°28'12"W	66.82'
L60	S81°41'59"W	161.28'
L61	S82°12'32"W	139.38'
L62	N89°00'23"W	139.07'
L63	N71°24'37"W	56.73'
L64	N61°20'18"W	103.69'
L65	N53°02'36"W	91.40'
L66	N44°48'09"W	123.51'
L67	N39°40'48"W	22.89'
L68	N2°34'08"E	187.87'

LEGEND

- SYMBOL — INDICATES —
 © FOUND MONUMENT
 — BASE FLOOD ELEVATION 12.0', FIELD VERIFIED
 — PORTION OF PROPERTY TO BE REMOVED
 - - - SECTION LINES
 - - - PROPERTY LINES DEED 2010-917
 - - - EXISTING FEMA FLOODWAY
 ● POB POINT OF BEGINNING



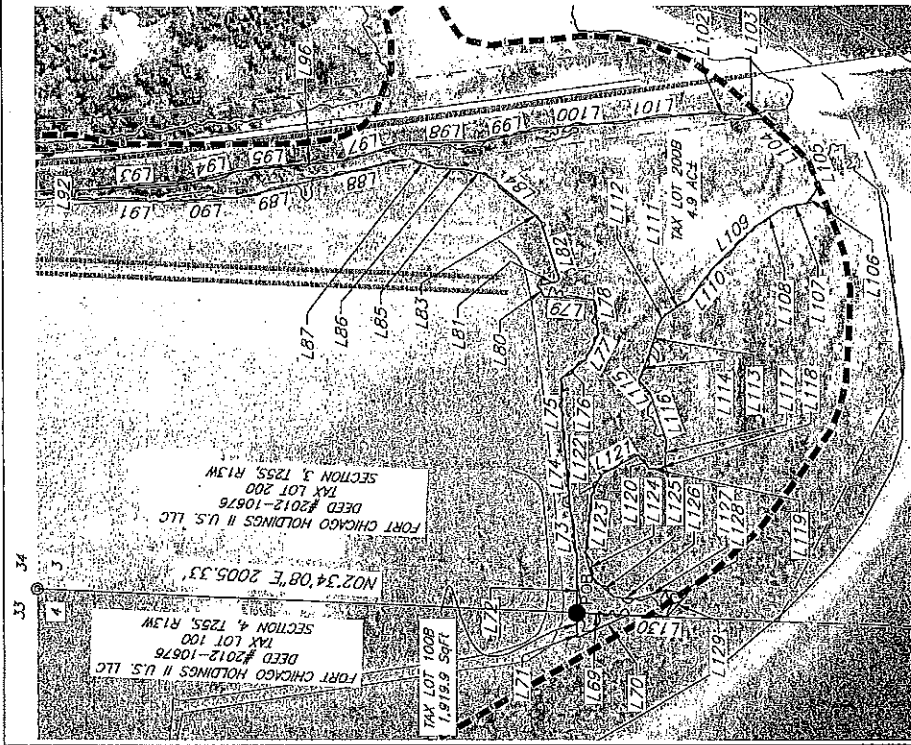
SCALE: 1"=200'



REGISTERED
 PROFESSIONAL
 LAND SURVEYOR
 OREGON
 JULY 19, 2002
 Walter E. White
 55547
 EXPIRES 6/30/14

TL 200, Sec. 3, T25S, R13W, W1A

	JCEP Land Use Coos County, Oregon	Exhibit "B"
	MARCH 2013 61048-MTI MLL SITE	LAND TO BE REMOVED SIN 61048112



LINE#	DIRECTION	LENGTH
L69	S2°34'08"W	88.90'
L70	N2°4'03'32"W	96.37'
L71	N88°54'49"E	43.28'
L72	S89°02'21"E	95.17'
L73	N82°13'48"E	88.43'
L74	N84°43'48"E	118.19'
L75	N87°27'03"E	109.66'
L76	S38°13'57"E	54.10'
L77	S63°05'14"E	51.17'
L78	N82°02'41"E	60.77'
L79	N3°14'53"E	84.54'
L80	N57°27'40"E	22.70'
L81	S12°59'21"E	35.15'
L82	N72°40'53"E	104.87'
L83	N45°44'46"E	27.50'
L84	N40°03'52"E	96.43'
L85	N13°58'54"E	42.70'
L86	N2°00'41"E	48.72'
L87	N20°12'51"E	49.55'
L88	N12°25'07"W	210.84'
L89	N12°56'36"W	104.40'

LINE#	DIRECTION	LENGTH
L90	N2°47'35"W	129.30'
L91	N1°16'12"E	156.02'
L92	S89°20'58"E	16.46'
L93	S4°05'30"E	211.32'
L94	S13°44'29"E	80.20'
L95	S5°46'29"E	97.98'
L96	S4°32'49"E	90.98'
L97	S16°06'11"E	105.94'
L98	S1°59'54"E	147.66'
L99	S12°03'55"E	114.89'
L100	S4°26'24"E	88.23'
L101	S5°42'48"E	181.11'
L102	S3°35'12"W	81.62'
L103	S11°55'11"E	17.16'
L104	S43°42'29"W	122.26'
L105	S69°01'31"W	46.82'
L106	N54°25'25"W	36.73'
L107	N10°22'57"W	42.02'
L108	N33°10'13"W	58.61'
L109	N43°42'20"W	103.23'
L110	N52°12'34"W	72.44'

LINE#	DIRECTION	LENGTH
L111	N31°52'06"W	49.76'
L112	N53°37'33"W	18.01'
L113	N72°43'10"W	61.30'
L114	N67°32'30"W	45.36'
L115	S48°05'55"W	29.24'
L116	S70°57'51"W	88.54'
L117	N87°23'10"W	44.68'
L118	N35°49'11"W	9.10'
L119	N2°39'17"W	20.59'
L120	N51°00'25"E	31.93'
L121	N28°00'07"W	73.27'
L122	N64°31'37"W	41.48'
L123	N83°53'33"W	99.10'
L124	S75°01'31"W	45.51'
L125	S41°39'05"W	51.01'
L126	S5°59'33"W	35.02'
L127	S15°47'35"E	58.51'
L128	S11°19'25"W	38.42'
L129	N47°30'39"W	53.45'
L130	N2°34'08"E	68.85'

REGISTERED
PROFESSIONAL
LAND SURVEYOR

Walter E. White

OREGON
JULY 20, 2002
Walter E. White
55547
EXPIRES 6/30/14

7L 200, Sec. 3, T25S, R13W, W.M.
7L 100, Sec. 4, T25S, R13W, W.M.

SPIN
Consulting Engineers
& Geologists, Inc.

ICBP
Land Use
Coos County, Oregon
MARCH 2013
61048-MT1 MILL SITE

LAND TO BE INCLUDED
SHN 61048.122
Figure 1

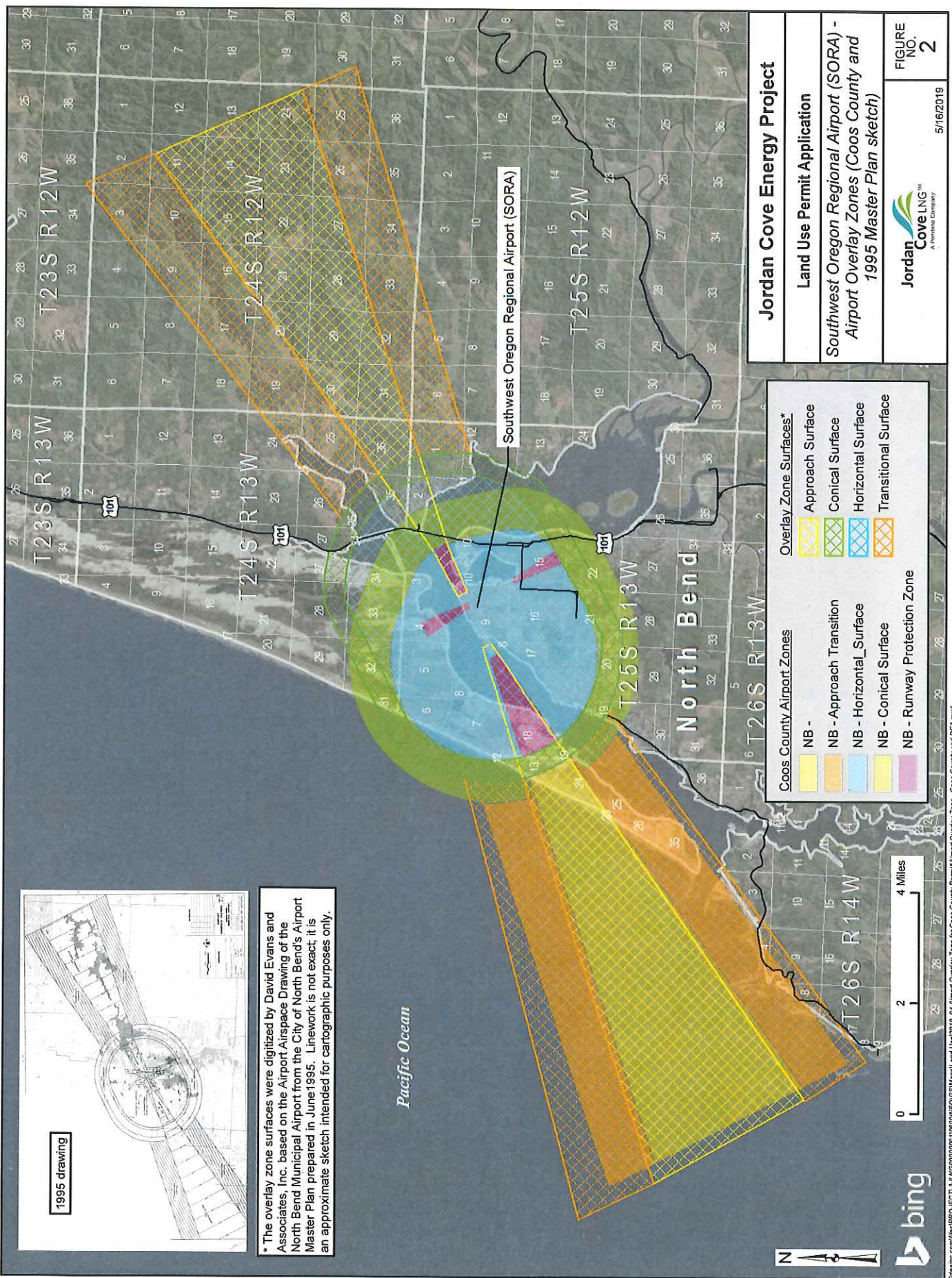


Eureka, CA | Arcata, CA | Redding, CA | Willits, CA | Coos Bay, OR | Klamath Falls, OR



* The overlay zone surfaces were digitized by David Evans and Associates, Inc. based on the Airport Airspace Drawing of the North Bend Municipal Airport from the City of North Bend's Airport Master Plan prepared in June 1995. Linework is not exact; it is an approximate sketch intended for cartographic purposes only.

Pacific Ocean



Jordan Cove Energy Project

Land Use Permit Application

**Southwest Oregon Regional Airport (SORA) -
Airport Overlay Zones (Coos County and
1995 Master Plan sketch)**

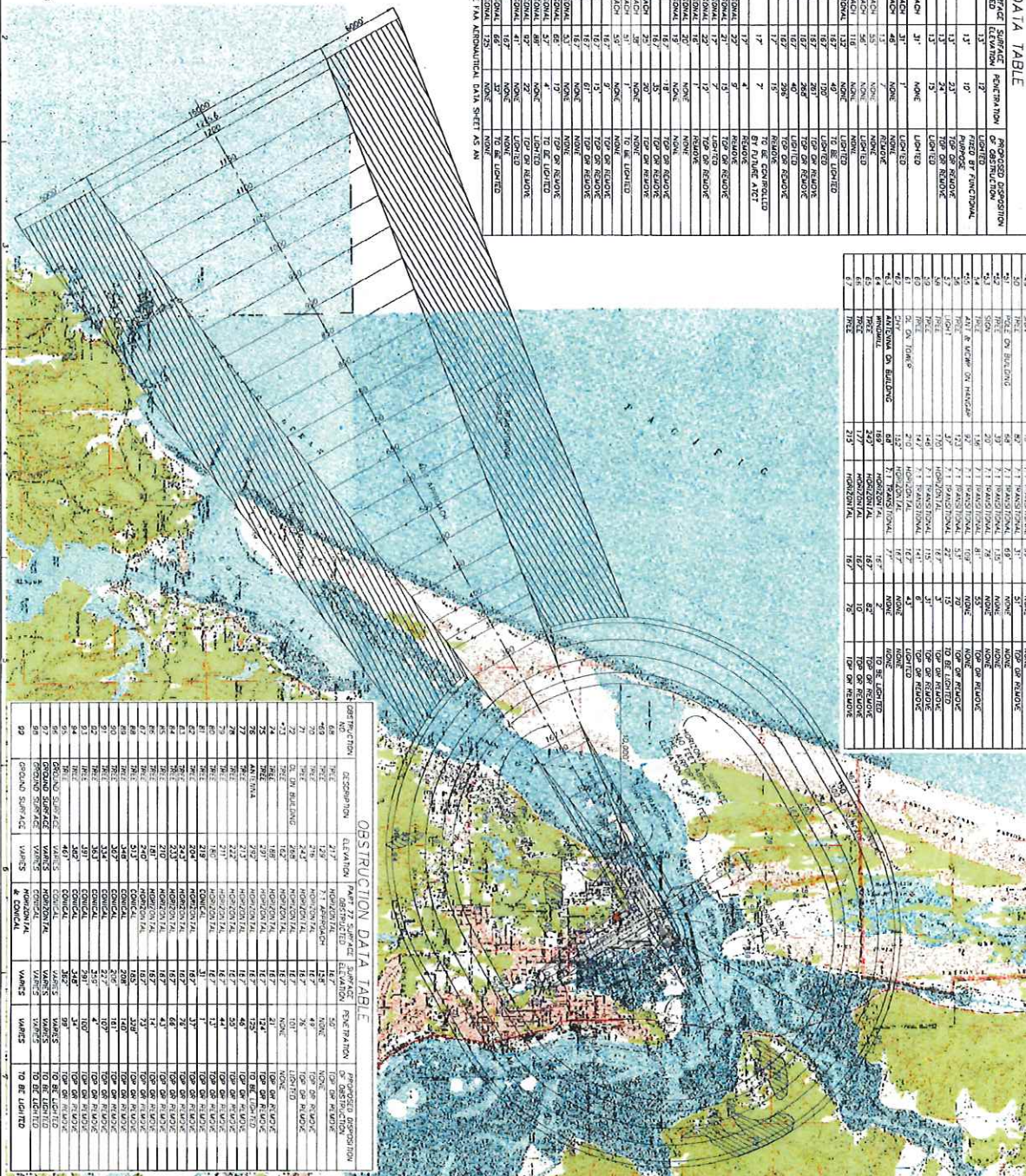
Jordan Cove LNG
A Pembina Company

5/16/2019

FIGURE NO. 2

Exhibit 12
Page 1 of 1

DISTRICT NO	DESCRIPTION	ELEVATION	PART 77 SURVEY		SURFACE ELEVATION	TABULATION	PROPOSED DISPOSITION OF OBSTRUCTION
			EXISTING	DESTROYED			
1	POD ON R. RST F	35	PRIMARY		13	12	FIELD BY FUNCTIONAL PURPOSE
2	MAEL	23	PRIMARY		13	12	POD ON RAILROAD
3	BRG	43	INDUSTRY		13	13	POD ON RAILROAD
4	POD ON R. BUILDING	38	INDUSTRY		13	13	POD ON RAILROAD
5	POD ON R. BUILDING	38	INDUSTRY		13	13	POD ON RAILROAD
6	POD ON R. BUILDING	28	50+ APPROACH		13	13	POD ON RAILROAD
7	POD ON R. BUILDING	16	35+ APPROACH		31	1	POD ON RAILROAD
8	POD ON R. BUILDING	12	35+ APPROACH		48	1	POD ON RAILROAD
9	POD ON R. BUILDING	31	35+ APPROACH		56	1	POD ON RAILROAD
10	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
11	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
12	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
13	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
14	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
15	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
16	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
17	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
18	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
19	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
20	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
21	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
22	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
23	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
24	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
25	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
26	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
27	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
28	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
29	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
30	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
31	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
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36	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
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38	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
39	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
40	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
41	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
42	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
43	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
44	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
45	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
46	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
47	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
48	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
49	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
50	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
51	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
52	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
53	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
54	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
55	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
56	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
57	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
58	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
59	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
60	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
61	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
62	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
63	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
64	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
65	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
66	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
67	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
68	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
69	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
70	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
71	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
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179	POD ON R. BUILDING	29	35+ APPROACH		56	1	POD ON RAILROAD
180	POD ON R. BUILDING	29	35+ APPROACH				

[illegible][illegible]

PORT OF COOS BAY NORTH BEND MUNICIPAL AIRPORT AIRPORT AIRSPACE PLAN

NORTH BEND
SCALE: 1"=10'

PROJECT NO.
819142

DRAWING FILE NAME:
ANRMA501



8405 SW Nimbus Avenue
Beaverton, Oregon 97008-7141
(503)596-0155
(503)596-0775 Fax

A Member of The McGraw-Hill Companies



North Bend Municipal Airport

Operated by **OREGON INTERNATIONAL PORT OF COOS BAY**



AIRPORT MASTER PLAN

AIRPORT MASTER PLAN

FINAL TECHNICAL REPORT

for

NORTH BEND MUNICIPAL AIRPORT
NORTH BEND, OREGON
Operated By Oregon International Port of Coos Bay

**Developed
through the
Coordinated Efforts of
W&H Pacific, Beaverton, Oregon
Coffman Associates, Lee's Summit, Missouri
Landrum & Brown, Seattle Washington
Richard Turi Architecture & Planning, North Bend, Oregon
The Benkendorf Associates, Portland, Oregon**

November 2002

"The preparation of this document was financed in part through an Airport Improvement Program grant from the Federal Aviation Administration (Project Number 3-41-0041-14) as provided under Section 505 of the Airport and Airway Improvement Act of 1982, as amended. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of this report by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws."

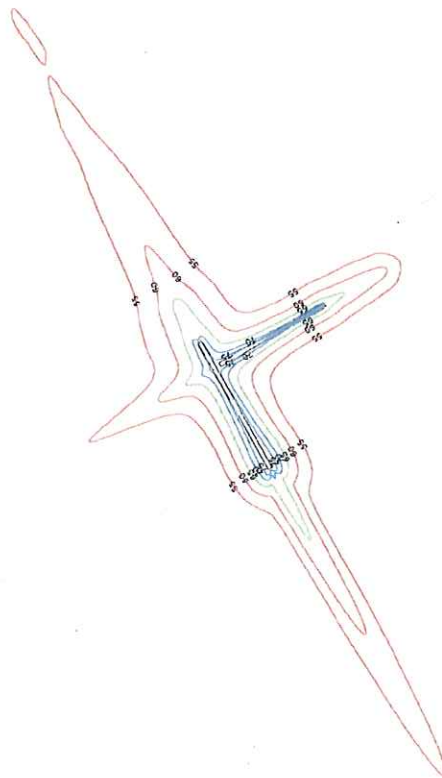
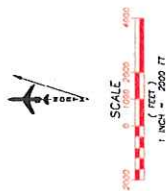
AIRPORT MASTER PLAN
FINAL TECHNICAL REPORT
for
NORTH BEND MUNICIPAL AIRPORT
NORTH BEND, OREGON
Operated By Oregon International Port of Coos Bay

**Developed
through the
Coordinated Efforts of
W&H Pacific, Beaverton, Oregon
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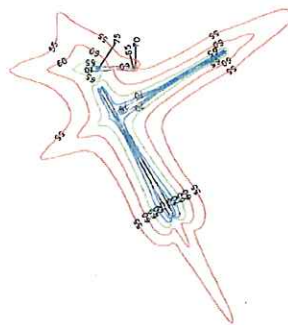
November 2002

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DATE: 12/20/21
NORMALIZATION
STANDARD

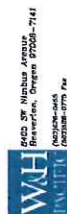


ULTIMATE NOISE CONTOURS-2020



EXISTING NOISE CONTOURS-2000

DESIGNED BY	DATE	REVISION	APPROVED BY	DATE
LAST DATE	11/01/21			
DATE	12/20/21			
DATE	12/20/21			
DATE	12/20/21			
DATE	12/20/21			
DATE	12/20/21			
DATE	12/20/21			
DATE	12/20/21			
DATE	12/20/21			



WAH Engineering
400 W. Highway 101
Bend, Oregon 97601-7141
Tel: 531-336-4444
Fax: 531-336-4444
www.waheng.com



PORT OF COOS BAY
NORTH BEND MUNICIPAL AIRPORT
NOISE CONTOURS

PROJECT NO. B19142
DRAWING FILE NAME: FIGURE B-1.DWG
SHEET 8A
EXHIBIT 8A



Notice of Proposed Construction or Alteration - Off Airport

[Add a new Case Off Airport - Desk Reference Guide V_2018.2.1](#)

[Add a New Case \(Off Airport\) for Wind Turbines - Met Towers \(with WT Farm\) - WT-Barge Crane - Desk Reference Guide V_2018.2.1](#)

Project Name: JORDA-00044454-17

Sponsor: Jordan Cove LNG

Details for Case : Oxidizer

[Show Project Summary](#)

Case Status	
ASN:	2017-ANM-5388-OE
Status:	Interim
Date Accepted:	12/06/2017
Date Determined:	05/07/2018
Letters:	05/07/2018 NPH 12/07/2017 ADD
Public Comments:	None
Documents:	None
Project Documents:	12/06/2017 JordanCove_OECASE...
Construction / Alteration Information	
Notice Of:	Construction
Duration:	Permanent
if Temporary:	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	
<i>*For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.</i>	
State Filing:	
Structure Details	
Latitude:	43° 25' 59.24" N
Longitude:	124° 16' 0.87" W
Horizontal Datum:	NAD83
Site Elevation (SE):	42 (nearest foot) PASSED
Structure Height (AGL):	131 (nearest foot)
Current Height (AGL):	(nearest foot)
<i>* For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal</i>	
Minimum Operating Height (AGL):	(nearest foot)
<i>* For aeronautical study of a crane or construction equipment the maximum height should be listed above as the Structure Height (AGL). Additionally, provide the minimum operating height to avoid delays if impacts are identified that require negotiation to a reduced height. If the Structure Height and minimum operating height are the same enter the same value in both fields.</i>	
Requested Marking/Lighting:	None
Other:	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other:	
Nearest City:	North Bend
Nearest State:	Oregon
Description of Location:	North spit of Coos Bay
<i>On the Project Summary page upload any certified survey.</i>	
Description of Proposal:	Required structures for the Jordan Cove LNG Terminal.

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: Oxidizer

FDC NOTAM:

NOTAM Number:

FCC Number:

Prior ASN:

Proposed Frequency Bands

Select any combination of the applicable frequencies/powers identified in the Colo Void Clause Coalition, Antenna System Co-Location, Voluntary Best Practices, effective 21 Nov 2007, to be evaluated by the FAA with your filing. If not within one of the frequency bands listed below, manually input your proposed frequency(ies) and power using the Add Specific Frequency link.

[Add Specific Frequency](#)

Low Freq	High Freq	Freq Unit	ERP	ERP Unit
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Notice of Proposed Construction or Alteration - Off Airport

[Add a new Case Off Airport - Desk Reference Guide V_2018.2.1](#)

[Add a New Case \(Off Airport\) for Wind Turbines - Met Towers \(with WT Farm\) - WT-Barge Crane - Desk Reference Guide V_2018.2.1](#)

Project Name: JORDA-000537222-19

Sponsor: Jordan Cove LNG

Details for Case : Amine regenerator

[Show Project Summary](#)

Case Status				
ASN:	2019-ANM-5197-OE			
Status:	Work In Progress			
Date Accepted:	07/29/2019			
Date Determined:				
Letters:	None			
Documents:	None			
Public Comments:	None			
Project Documents:	None			
Construction / Alteration Information				
Notice Of:	Construction			
Duration:	Permanent			
if Temporary:	Months: Days:			
Work Schedule - Start:				
Work Schedule - End:				
<i>*For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.</i>				
State Filing:				
Structure Details				
Latitude:	43° 26' 1.43" N			
Longitude:	124° 16' 3.53" W			
Horizontal Datum:	NAD83			
Site Elevation (SE):	43 (nearest foot) PASSED			
Structure Height (AGL):	161 (nearest foot)			
Current Height (AGL):	(nearest foot)			
<i>* For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal</i>				
Minimum Operating Height (AGL):	(nearest foot)			
<i>* For aeronautical study of a crane or construction equipment the maximum height should be listed above as the Structure Height (AGL). Additionally, provide the minimum operating height to avoid delays if impacts are identified that require negotiation to a reduced height. If the Structure Height and minimum operating height are the same enter the same value in both fields.</i>				
Requested Marking/Lighting:	None			
Other:				
Recommended Marking/Lighting:				
Current Marking/Lighting:	N/A Proposed Structure			
Other:				
Nearest City:	North Bend			
Nearest State:	Oregon			
Description of Location:	north spit of Coos Bay			
<i>On the Project Summary page upload any certified survey.</i>				
Description of Proposal:	Required structure for Jordan Cove LNG facility.			
Structure Summary				
Structure Type:	Other w/o Antenna			
Structure Name:	Amine regenerator			
FDC NOTAM:				
NOTAM Number:				
FCC Number:				
Prior ASN:				
Proposed Frequency Bands				
Select any combination of the applicable frequencies/powers identified in the Colo Void Clause Coalition, Antenna System Co-Location, Voluntary Best Practices, effective 21 Nov 2007, to be evaluated by the FAA with your filing. If not within one of the frequency bands listed below, manually input your proposed frequency(ies) and power using the Add Specific Frequency link.				
Add Specific Frequency				
Low Freq	High Freq	Freq Unit	ERP	ERP Unit

[← Previous](#) [Back to Search Result](#) [Next](#)



Notice of Proposed Construction or Alteration - Off Airport

[Add a new Case Off Airport - Desk Reference Guide V_2018.2.1](#)

[Add a New Case \(Off Airport\) for Wind Turbines - Met Towers \(with WT Farm\) - WT-Barge Crane - Desk Reference Guide V_2018.2.1](#)

Project Name: JORDA-000537221-19

Sponsor: Jordan Cove LNG

Details for Case : Amine Contactor

[Show Project Summary](#)

Case Status

ASN: 2019-ANM-5196-OE
Status: Work In Progress

Date Accepted: 07/29/2019

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Public Comments: None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
if Temporary : Months: Days:

Work Schedule - Start:

Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: Amine Contactor

FDC NOTAM:

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 43° 26' 0.98" N
Longitude: 124° 16' 3.50" W
Horizontal Datum: NAD83
Site Elevation (SE): 42 (nearest foot) PASSED
Structure Height (AGL): 146 (nearest foot)
Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current
AGL height of the existing structure.
Include details in the Description of Proposal*

Minimum Operating Height (AGL): (nearest foot)

** For aeronautical study of a crane or construction equipment
the maximum height should be listed above as the
Structure Height (AGL). Additionally, provide the minimum
operating height to avoid delays if impacts are identified that
require negotiation to a reduced height. If the Structure Height
and minimum operating height are the same enter the same
value in both fields.*

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other :

Nearest City: North Bend

Nearest State: Oregon

Description of Location: North spit of Coos Bay

On the Project Summary page upload any certified survey.

Description of Proposal: Required structure for Jordan Cove LNG terminal

Proposed Frequency Bands

Select any combination of the applicable frequencies/powers identified in the Colo Void Clause Coalition, Antenna System Co-Location, Voluntary Best Practices, effective 21 Nov 2007, to be evaluated by the FAA with your filing. If not within one of the frequency bands listed below, manually input your proposed frequency(ies) and power using the Add Specific Frequency link.

[Add Specific Frequency](#)

Low Freq	High Freq	Freq Unit	ERP	ERP Unit
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