

ATTACHMENT A & B



1120 NW Couch Street
10th Floor
Portland, OR 97209-4128

T +1.503.727.2000
F +1.503.727.2222
PerkinsCoie.com

February 4, 2019

Seth J. King
sking@perkinscoie.com
D. +1.503.727.2024
F. +1.503.346.2024

VIA EMAIL ONLY

Henry O. Hearley
Assistant Planner
Lane Council of Governments
859 Willamette Street
Suite 500
Eugene, OR 97401

**Re: Concurrent Land Use Applications by Jordan Cove Energy Project L.P.
Coos Bay Estuary Navigation Reliability Improvements
City of Coos Bay File Nos. _____**

Dear Henry:

As you are aware, this office represents Jordan Cove Energy Project L.P. ("JCEP"), the applicant requesting City of Coos Bay ("City") approval of concurrent land use applications ("Applications") to authorize navigation reliability improvements on approximately 3.3 acres in the 52-NA estuary zone. This letter and its enclosures respond to your December 20, 2018 letter, which requested additional information about the Applications.

Enclosed please find an amended and restated application submittal, which we request that the City and the Lane Council of Governments ("LCOG") accept in place of the original submittal. The amended and restated submittal includes the complete application filing, which has been revised to include a revised application form, a revised application narrative, additional pages in Exhibit 1, and new Exhibits 7, 8, and 9. For convenience, we have also included a "track changes" version of the narrative showing the changes from the original version.

Further, thank you for raising the numbered questions that you did in your December 20, 2018 letter. JCEP responds to these questions below. The letter includes your numbered questions in bold followed by JCEP's responses.

59892-0024/143152371.1

1. Narrative Page 6 - CBMC - 17.215.020

Please include an update in your narrative to reflect the “Type III - with Council approval” approach that the City has agreed to pursue on the application.

RESPONSE: JCEP has included this update at pp. 6-7 of the revised narrative.

2. Narrative Page 7 - Approval Criteria

Please address the (Economic Development) Policy 1.5 of the CBCP

RESPONSE: JCEP has addressed this policy at pp. 8-9 of the revised narrative.

Although the CBEMP contains the policy language for Estuarine Resources, please address consistency with the stated Goal of the Estuarine Resources Element of the CBCP.

RESPONSE: For two reasons, the City should find that the Goal of the Estuarine Resources Element of the Coos Bay Comprehensive Plan (“CBCP”) is not applicable to the Applications. First, in general, consistency with the CBCP goals is not an approval criterion for a plan amendment. See Coos Bay Development Code 17.215.060(1) (requiring consistency with the applicable policies of the comprehensive plan). Second, the CBCP Estuarine Resources Goal is not applicable because it implements Statewide Planning Goal (“Goal”) 16, and JCEP is requesting an exception to Goal 16 as part of the Applications. See *Friends of Marion County v. Marion County*, 59 Or LUBA 323, 350-351, *aff’d* 233 Or App 488, 227 P3d 198 (2010) (“[w]hen a goal exception is taken to facilitate proposed development, any comprehensive plan policies that implement the goal for which the exception is taken no longer govern that development”).

Please address the Land Use Policies: LU.4, LU.5 and LU.7 of the CBCP.

RESPONSE: JCEP has addressed these policies at pp. 9-10.

3. Narrative Page 9 - Statewide Planning Goal 1: Citizen Involvement

Please include an update in your response to reflect the “Type III - with Council approval” approach that the City has agreed to pursue on the application.

RESPONSE: JCEP has updated this response at pp. 11-12 of the revised narrative.

4. Narrative Page 10 - Statewide Planning Goal 6: Air, Water Land Resources Quality

Please clarify the following response;

“Applicant anticipates that completing the NRIs will have effects upon air, water and land resources in the City, but these effects will be temporary, insignificant, or both, and Applicant will construct the NRIs using methods to protect these resources.”

This language seems contradictory (i.e. does the applicant anticipate that effects could be non-temporary or significant?). Do you feel comfortable stating that the applicant anticipates that “these effects will be both temporary and insignificant”?

RESPONSE: JCEP has revised its response to Goal 6 at p. 13 of the revised narrative to remove the passage in question.

5. Narrative Page 22 - OAR 660-004-0022(8)

Please clarify your response to this criterion. Goal 16 exception clarity is required for the relevance of 660-004-0022(8)(b) to the proposal. The provision describes permitting the “continuation of the present level of navigation.” The response identifies the proposal as the “minimum amount necessary to provide...channel depth...for enhanced navigation.”

RESPONSE: JCEP has clarified its response to OAR 660-004-0022(8)(b) at pp. 25-26 of the revised narrative.

The narrative also calls out 660-004-0022(8)(e) as being applicable. Please elaborate on the Goal 16 Exception applicability of this provision.

RESPONSE: The reference to OAR 660-004-0022(8)(e) in the narrative was a typographical error. OAR 660-004-0022(8)(e) explains how to justify an exception to alter or expand an existing public non-water-dependent use or a nonsubstantial fill for a private non-water-dependent use. The Applications do not request an exception for

Henry O. Hearley
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these uses/activities. Therefore, the City should find that OAR 660-004-0022(8)(e) is not applicable to the Applications.

6. Narrative Page 27 -

In the response at the very top of the page please clarify that, although prepared to address three NRIs, the application represented by the narrative addresses the approval of one NRI (Dredge Area 4).

RESPONSE: JCEP has made this clarification at p. 30 of the revised narrative.

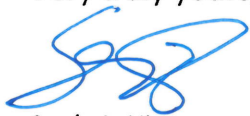
7. Narrative related to the Coos Bay Estuarine Management Plan (CBEMP) Pages 28 - 37.

Review of your submitted application narrative revealed inconsistencies between the language of the CBEMP that was provided to LCOG and specific language that you responded to. Policy #5: Estuarine Fill and Removal is an example of language that appears inconsistent. Attached is the latest adopted version of the CBEMP. Please provide criteria responses in your narrative consistent with this version.

RESPONSE: JCEP has included the current version of the relevant CBEMP policies, and where appropriate, has updated its responses to same at pp. 32-43 of the revised narrative.

Thank you for your attention to the points in this letter. Please feel free to contact me with any further questions.

Very truly yours,



Seth J. King

Encls.

cc: Carolyn Johnson, City of Coos Bay (via email) (w/encls.)
Jake Callister, LCOG (via email) (w/encls.)
Steve Pfeiffer, Perkins Coie LLP (via email) (w/encls.)
Client (via email) (w/encls.)



City of Coos Bay

Community Development • 500 Central Avenue • Coos Bay, Oregon 97420
Telephone 541.269.1181 • Fax 541.269.8916 • coosbay.org

LAND USE DEVELOPMENT REVIEW APPLICATION

For Office Use Only	
STAFF CONTACT	PROJECT NO(S).

Type of Review (Please check all that apply):

- | | | |
|--|--|---|
| <input type="checkbox"/> Annexation | <input type="checkbox"/> Home Occupation | <input type="checkbox"/> Subdivision |
| <input type="checkbox"/> Appeal and Review | <input checked="" type="checkbox"/> Legislative/Text Amendment | <input type="checkbox"/> Temporary Use |
| <input type="checkbox"/> Architectural Design Review | <input type="checkbox"/> Lot Line Adjustment | <input type="checkbox"/> Vacation |
| <input type="checkbox"/> Conditional Use | <input type="checkbox"/> Partition | <input type="checkbox"/> Variance |
| <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Planned Unit Development | <input type="checkbox"/> Zone Change |
| <input checked="" type="checkbox"/> Estuarine Use/Activities | <input type="checkbox"/> Site Plan and Architectural Review | <input checked="" type="checkbox"/> Other <u>Plan amendment</u> |

Pre-Application applications require a different application form available on the City website or at City Hall.

Site Location/Address:	Assessor's Map No./Tax Lot(s):
Coos Bay Estuary	Zoning: Multiple
	Total Land Area:

Detailed Description of Proposal:

Navigation reliability improvements in Coos Bay:

- (1) Map amendment for approximately 3.3 acres from 52-NA to DDNC-DA;
- (2) Text amendment to City of Coos Bay Comprehensive Plan to take reasons exception to Statewide Planning Goal 16; and
- (3) Estuarine and Coastal Shoreline Uses and Activities Permit to allow dredging in DDNC-DA; temporary pipeline in 52-NA, 53-CA, 54-DA, and 55-CA; and buoy in 52-NA.

Applicant/Owner Name: Jordan Cove Energy Project L.P.
(please print)

Phone:

Address: Attn: Meagan Masten, 111 SW 5th Avenue, Suite 1100

Email: mmasten@pembina.com

City State Zip: Portland, OR 97204

Applicant's Representative: Seth King

Phone: 503.727.2024

(please print)
Address: Perkins Coie LLP, 1120 NW Couch Street, Tenth Floor

Email: sking@perkinscoie.com

City State Zip: Portland, OR 97209

1. Provide evidence that you are the owner or purchaser of the property or have the written permission of owner(s) to make an application.
2. Copy of the deed for the subject property.
3. Attach (a) a certified list of names and addresses of all owners of property within designated distance of the exterior boundaries of the subject property according to the latest adopted County tax role and (b) an assessor's map showing all lots and parcels of land within that area.
4. Address the Decision Criteria or Goals/Standards outlined in the Coos Bay Municipal Code chapter(s) related to your request.
5. Additional information: Date construction is expected to begin; estimated completion date of the total project and of individual segments; and anticipated future development.
6. **Ten (10) complete hard-copy sets** (single sided) of application & submitted documents must be included with this application.
One (1) complete set of digital application materials must also be submitted electronically or on CD in Word format.
Additional copies may be required as directed by the Coos Bay Director of Community Development.

The undersigned property owner(s) hereby authorizes the filing of this application, and authorizes on site review by authorized staff. I hereby agree to comply with all code requirements applicable to my application. Acceptance of this application does not infer a complete submittal. All amendments to the Coos Bay Development Code and to other regulations adopted after the application is approved shall be enforced where applicable. Approved applications and subsequent development is not vested under the provisions in place at the time of the initial application.

Natalie Eades
Applicant's signature

2/4/19
Date

See application materials
Owner's signature (required)

Date

**BEFORE THE PLANNING COMMISSION AND
CITY COUNCIL OF THE CITY OF COOS BAY, OREGON**

In the Matter of Requests to Improve the Navigation Efficiency and Reliability of the Coos Bay Deep Draft Navigation Channel Pursuant to the Following Applications: (1) Map Amendment to the Coos Bay Estuary Management Plan to Change the Designation of Approximately 3.3 Acres from 52-NA to DDNC-DA; (2) Text Amendment to the City of Coos Bay Comprehensive Plan to take a Reasons Exception to Statewide Planning Goal 16 to Authorize this Map Amendment; (3) Estuarine and Coastal Shoreline Uses and Activities Permit For “New And Maintenance Dredging” in the DDNC-DA Estuarine Zone; and (4) Estuarine and Coastal Shoreline Uses and Activities Permit to Allow an Accessory Temporary Dredge Transport Pipeline in the 52-NA, 53-CA, 54-DA, and 55-CA Estuarine Zones and an Accessory Buoy in the 52-NA Estuarine Zone.

NARRATIVE IN SUPPORT OF THE APPLICATIONS FILED BY JORDAN COVE ENERGY PROJECT L.P.

I. Land Use Requests.

Jordan Cove Energy Project L.P. (“JCEP”) proposes to make navigation efficiency and reliability improvements to the City of Coos Bay (“City”)-designated Coos Bay Deep-Draft Navigation Channel (“Channel”) by dredging a submerged area lying adjacent to the existing Channel.¹ This dredging will allow for vessel transit under a broader

¹ JCEP is also proposing to widen and deepen the Channel in three additional locations, which are subject to the planning and zoning jurisdiction of Coos County. That request is outside the scope of this Application. JCEP is filing a separate land use application with Coos County to obtain authorization for the navigability enhancements at these other three locations.

weather window to enable JCEP to export the full capacity of the optimized design production of 7.8 metric tonnes per annum (“mtpa”) from JCEP’s liquefied natural gas (“LNG”) terminal on the nearby North Spit.

JCEP submits the following concurrent applications (together, “Application”) to the City to seek local land use authorization to complete these improvements to the Channel:

(1) Post-acknowledgment amendments to the Coos Bay Estuary Management Plan (“CBEMP”) map to change the zoning designation of approximately 3.3 acres located approximately 2,700 feet from the end of the North Bend airport runway within the Coos Bay estuary (“Navigation Reliability Improvement Site” or “NRI Site”) from 52-NA to DDNC-DA, as further depicted in Exhibit 1;

(2) A post-acknowledgment text amendment of the CBEMP, which is part of the City of Coos Bay Comprehensive Plan (“CBCP”), to take a reasons exception to Statewide Planning Goal (“Goal”) 16 to authorize the rezone of the NRI Site to DDNC-DA;

(3) Estuarine and Coastal Shoreline Uses and Activities Permit in the DDNC-DA estuarine zone to allow new and maintenance dredging at the rezoned NRI Site. The activities at the NRI Site will be referred to in this narrative as the “NRIs;”

(4) Estuarine and Coastal Shoreline Uses and Activities Permit in the 52-NA, 53-CA, 54-DA, and 55-CA estuarine zones to allow a temporary pipeline to transport the dredge spoils from the NRI Site to approved disposal sites and a buoy as accessory uses to the primary dredging activity. JCEP is not seeking approval of the dredged materials disposal activity in conjunction with this Application.

This narrative provides the evidentiary basis and related analysis demonstrating how the Application satisfies the applicable approval criteria set forth in the Statewide Planning Goals (“Goals”), the Oregon Revised Statutes (“ORS”), the CBEMP, the CBCP, and the City of Coos Bay Development Code (“CBDC”). Based upon this evidence and argument, the City should approve the Application.

JCEP discussed this proposal with the City in a pre-application conference on February 2, 2017. A copy of the pre-application conference notes prepared by the City are included in Exhibit 2.

II. Description of Request.

A. Current Constraints on Utilizing the Channel.

The Channel serves a vital purpose because it provides the only safe vessel access to and from Coos Bay and the Pacific Ocean for marine terminals located along the Bayfront. The Channel was initially authorized in 1899 and since then has undergone ten modifications. Most recently, the Channel was expanded from -35 feet to -37 feet in 1997 to allow for the safe navigation and transit of Coos Bay for the size of ships prevalent during that time period. However, over the last 20 years the dimensions and tonnage of ships serving terminals in Coos Bay has increased. The size of vessels typically calling on Coos Bay terminals has increased from an average of 45,422 Metric Tonnes to an average of 52,894 Metric Tonnes with a projected near-term vessel size of 70,400 Metric Tonnes.

Currently, environmental conditions, including wind, fog, and currents, coupled with the increasing ship size explained above, have caused the Coos Bay Pilots Association² (“Pilots”) to impose ever more limiting restrictions on when vessels may safely transit the Channel. These restrictions, in turn, cause significant delays and increased pressure on the Pilots to navigate ships through the Channel. Delays are measured in the total transit time, from the time the vessel arrives off the coast of Coos Bay until it returns offshore after calling at its local Coos Bay destination. These delays generally decrease the efficiency and competitiveness of maritime commerce on a global scale, thereby jeopardizing continued success for maritime commerce in Coos Bay. Minimizing delay is a pressing need because companies that utilize the port of Coos Bay have identified potential new customers in Asia that desire to export cargo using bulk carriers that are slightly larger than the ships typically calling today. Various marine terminal businesses within Coos Bay require assurances that terminals can efficiently accommodate larger dimension bulk carriers in the future.

B. How NRIs will Improve Navigation Efficiency and Reliability.

Dredging to complete the NRI Sites will increase the operational window to safely transit any vessel through the Channel. The NRIs, which are described in more detail

² The Pilots, regulated and approved by the State of Oregon, are responsible for supporting deep sea vessel Masters in navigating their vessels into and out of the Channel. Pilotage is mandatory in Oregon. The Pilots serve a vital function for maritime commerce in Coos Bay because they safely and efficiently guide vessels through the Channel (known as pilotage) using visual aids, radar, and other means. The Channel provides the only safe vessel access to marine terminals within Coos Bay. Pilots are trained to navigate the Channel and therefore have detailed knowledge of its bathymetric conditions and visual layout.

below, are designed to increase the environmental operating windows for all ships entering Coos Bay by softening critical turns, relocate aids to navigation and reduce the required Channel directional changes. The NRIs are designed to reduce entry and departure delays and allow for more efficient vessel transits through the Channel for the size of vessels entering the Port today.

The NRIs will allow companies to secure emerging opportunities to export products with today's larger vessels, including bulk carriers of up to 299.9 meters (983.3 feet) in length and 49 meters (160.8 feet) in beam and 11.9 meters (39 feet) in draft. Although log export vessels serving the upper bay are smaller, the proposed enhancements also benefit these vessels by broadening the tidal and environmental windows for transiting the Channel, providing an enhanced margin of safety and improved efficiency in the loaded vessel departure schedule. Both Roseburg Forest Products and the Pilots have submitted letters of support for the NRIs. See Exhibit 3.

For JCEP and its LNG terminal, the NRIs will allow for transit of LNG vessels of similar overall dimensions to those listed in the July 1, 2008 United States Coast Guard ("USCG") Waterway Suitability Report, the USCG Letter of Recommendation dated May 10, 2018 and USCG letter confirmation dated November 7, 2018 see Exhibit 4, but under a broader range of weather conditions, specifically higher wind speeds. As a result, JCEP estimates that, upon completion of the NRIs, JCEP will be able to export the full capacity of the optimized design production of the LNG Terminal on a consistent annual basis.

C. Description of Channel NRIs.

Maps and cross-sections of the NRI Site are included in Exhibit 1. In the City, the specific navigation improvements at the NRI Site consist of the following:

- NRI #4 (NRI #1 - #3 are subject to Coos County jurisdiction): JCEP proposes to widen the turn from Lower Jarvis Range to Jarvis Turn Range channels from the current 500 feet to 600 feet at the apex of the turn from the current 1,125 feet to about 1,750 feet, which will allow vessels to commence their turn in this area sooner.

The NRI Site would be dredged to a -37-foot MLLW elevation to match the current depth of the Channel. Dredging of the NRIs would include a two-foot over-dredge allowance and a two-foot advanced maintenance allowance (total depth: -41-foot MLLW). Channel side slopes would be constructed at a 4:1 horizontal to vertical slope. Notably, these improvements have been identified by the USCG as a required navigation risk mitigation measure for the JCEP terminal operations. See Letter of Recommendation from USCG dated May 10, 2018 in Exhibit 4.

D. Proposed Dredging and Accessory Activities.

JCEP will accomplish the Channel enhancements by dredging at each of the NRI Sites. Dredging would be accomplished with mechanical or hydraulic methods. The specific characteristics of the dredging are described in the memorandum from David Evans & Associates (“DEA”) included in Exhibit 5.

All work associated with the NRIs will take place during the approved in-water work period for Coos Bay (October 1 to February 15).

JCEP will place initial and future dredged material derived from the NRI Sites at the APCO 1 and 2 sites near the southern terminus of the U.S. Highway 101 McCullough Bridge. These sites are located in the City of North Bend; JCEP will file a separate application with that city to authorize disposal of these dredge spoils in these locations.

If dredging by hydraulic methods, JCEP will utilize a 24- to 36-inch temporary dredge pipeline to transport the dredged material to the disposal sites on the bottom or horizontal extent of the Channel to reduce potential conflicts with vessel navigation. The maximum distance from the NRIs to the APCO sites is approximately 8.3-miles. The dredge line is illustrated in Exhibit 6. Booster pumps would be required to move the material to the disposal sites through the pipeline. A segment of the temporary dredge line is located in the City of North Bend; JCEP will file a separate application with that city to authorize that segment of the line. In conjunction with and as a result of the dredging activity, JCEP will place a buoy on the south side of the Channel in the City. The general location of the buoy is illustrated in Exhibit 7.

III. Applicable Approval Criteria.

The Application complies with all applicable approval criteria, as follows.

A. Comprehensive Plan Map Amendment

1. CBDC - 17.215.010 Comprehensive plan amendment.

- (1) The boundaries of the comprehensive plan map designations and the comprehensive plan text may be amended as provided in CBDC 17.215.020.**
- (2) The city may amend its comprehensive plan and/or plan map. The approval body shall consider the cumulative effects of the proposed comprehensive plan and/or map amendments on other zoning districts and uses within the general area. Cumulative effects include sufficiency**

of capital facilities services, transportation, zone and location compatibility, and other issues related to public health and safety and welfare the decision making body determines to be relevant to the proposed amendment.

RESPONSE: This Application requests an amendment of the CBCP map to change the CBCP designation of the NRI Site from 52-NA to DDNC-DA. The cumulative effects of such an amendment would be to facilitate an increase in safety and efficiency of navigation in the Channel, as described in Section II. of this narrative above. Therefore, the cumulative effect of the Application is to augment transportation in the bay. The Application is compatible with the zone because new and maintenance dredging is allowed in the DDNC-DA district (and because this Application requests a comprehensive plan map amendment to render the NRI Site with a DDNC-DA designation). The Application will not have cumulative effects on the sufficiency of capital facilities services, or health and welfare. Therefore, the City can find that the Application satisfies this criterion.

CBDC - 17.215.020 Initiation of Amendment

Amendments of the comprehensive plan text or map, zoning map, or this title may be initiated by the following:

- (1) A Type III application, CBDC 17.130.100, Type III procedure, by one or more owners of the property proposed to be changed or reclassified consistent with the adopted comprehensive plan; or**
- (2) A Type IV legislative process, CBDC 17.130.110, Type IV procedure, by motion of the planning commission and adoption by the city council.**

RESPONSE: The underlying landowner of the NRI Site, the Department of State Lands, has authorized the submittal of the Application. See Exhibit 8. Subsection (1) permits the landowner to initiate a plan text or map or zoning map amendment. The City should find that the Application has been correctly initiated pursuant to subsection (1) above.

Subsection (1) directs the City to follow the Type III review and decision-making procedures of CBDC 17.130.100 when reviewing the Application. These procedures typically apply to quasi-judicial applications and thus provide greater procedural protections to JCEP and members of the public. The Application is quasi-judicial in nature because it involves a single landowner, a limited geographic area, is not City-initiated, and concerns the application of existing policies to a specific set of facts.

Therefore, subject to one modification explained below, the City should review and decide upon the Application pursuant to the City's Type III procedures.

The modification is appropriate in this case in order to comply with state law. CBDC 17.130.100 ("Type III procedure") provides that a Type III application "will be considered at one or more public hearings before the city's planning commission." A Type III application does not as a matter of course go before the City Council. See CBDC 17.130.130(5)(c) (providing for City Council consideration of a Type III application but only in event of appeal). State law requires the local governing body to take final action to approve any post-acknowledgment comprehensive plan amendment before it can become final. *Housing Land Advocates v. City of Happy Valley*, __ Or LUBA __ (LUBA No. 2016-031, May 23, 2016). The Application includes a request for an exception to Goal 16, which is a request for a plan text amendment. Therefore, pursuant to *Housing Land Advocates*, the City should schedule the Application for final action by the City Council after the Planning Commission's initial decision.

In sum, the City should apply its Type III process in CBDC 17.30.100 to review and decide upon the Application, subject to also providing for a hearing and final decision on the Application by the City Council.

CBDC - 17.215.060 Approval Criteria

- 1) For a Type III or Type IV review, the city council shall approve the proposal upon findings that:**
 - (a) The proposed amendment is consistent with the applicable policies of the comprehensive plan or that a significant change in circumstances requires an amendment to the plan or map;**

RESPONSE: This Application to change the CBCP designation of the NRI Site from 52-NA to DDNC-DA is consistent with the applicable policies of the comprehensive plan.

CBCP Policies

- NRH.8 Coos Bay shall encourage the preservation and protection of riparian vegetation as an important fish and wildlife habitat and as a viable means of flood control by enactment of appropriate property development ordinances providing protection by establishing buffer strips along waterways, along designated HUD floodways, with the exception of navigable waterways. This strategy recognizes that such land use practices are necessary (1)**

to preserve the area's natural resources, and (2) to eliminate unnecessary drainage and erosion problems often accompanying development.

RESPONSE: JCEP anticipates possible temporary, but not permanent, impacts to shoreline habitat, including to riparian vegetation, where JCEP plans to offload dredged material for processing. These temporary impacts would be limited to a corridor approximately 10 feet wide. Furthermore, JCEP would locate this corridor in the field (location by the dredging contractor) to minimize impacts to vegetation and aquatic resources. Regardless, NRH.8 does not affirmatively obligate JCEP to take any action, but rather obligates the City to “encourage” preservation of riparian vegetation “by placing buffer strips along waterways, along designated HUD floodways, with the exception of navigable waterways.” JCEP will comply with any regulations the City has implemented in accordance with its obligation to so “encourage” preservation of riparian vegetation. Therefore, the City can find that the Application complies with NRH.8.

NRH.9 Coos Bay shall cooperation with local, state, and federal agencies in conserving and protecting fish and wildlife habitat, open spaces, and aesthetic and scenic values encompassed by areas enclosed by the Coos Bay-North Bend Water Board, Empire Lakes, and Mingus Park. This strategy is not intended to prohibit development in these areas, but rather to ensure that if development occurs it takes into consideration the ability of the land to support such development, i.e., soils, topography, habitat, natural processes, etc. This strategy recognizes that these areas are particularly sensitive and valuable resources.

RESPONSE: This policy creates no affirmative obligations for JCEP. Therefore, it does not apply to the Application.

7.5 ECONOMIC DEVELOPMENT

Goal 1, Policy 1.5 Support and cooperate with community and regional partners to encourage economic growth.

RESPONSE: The Application requests navigation reliability improvements for the Channel, which will primarily benefit large vessels that are navigating to and from the International Port of Coos Bay (“Port”). The Port is located outside the City limits but is an important regional entity that facilitates mass export and import of goods and commodities overseas and thus serves as a key driver of economic development

throughout southwest Oregon. As a result, approving the Application and facilitating the NRIs will support community and regional partners and encourage economic growth.

Goal 6, Policy 6.1, 6.2 Maximize the potential uses and benefits the waterfront and deep-water port offers to the city and region as a whole; Support the Port of Coos Bay in its development efforts for transportation linkage and to develop a deep-draft channel to accommodate large cargo vessels and increase shipping activities and water-dependent uses.

RESPONSE: The purpose of this Application is to allow the NRIs, which together with other improvements for which JCEP is seeking approval from Coos County, will facilitate increased navigational safety and efficiency for large vessels in the Channel, thereby maximizing the Channel’s economic benefits for the City and region as a whole by allowing increased economic input and output. Therefore, the Application complies with these policies.

LU.4 Coos Bay shall not make major revisions to this Comprehensive Plan more frequently than every two years, if at all possible. “Major revisions” are those that have widespread and immediate impact beyond the subject area under consideration. The city recognizes that wholesale approval of frequent major revisions could ruin the integrity of this Plan.

RESPONSE: The Application does not request “major revisions” to the CBCP. The text amendment only directly affects the NRI Site, which is approximately 3.3 acres in size and is located at an isolated, undeveloped point adjacent to the Channel. Approval of the Application will not, from a land development/conservation perspective, have a widespread and immediate impact beyond the NRI Site. Therefore, the City should find that the Application complies with this policy.

LU.5 Coos Bay may make minor changes to this Comprehensive Plan on an infrequent basis as need and justification arises. “Minor changes” are those which do not have significant impact beyond the immediate area of the property under consideration. The city recognizes that wholesale approval of frequent minor changes could ruin the integrity of this Plan.

RESPONSE: The Application requests an exception to Goal 16 to facilitate navigation reliability improvements to an isolated, undeveloped area that is approximately 3.3 acres in size. From a land development perspective, approval of the Application will not, from a land development/conservation standpoint, have a widespread, immediate, or significant impact beyond the NRI Site, and it will not require additional changes to the Plan. Further, for the reasons explained in this narrative, the City should find that the need for the amendments has been justified. Therefore, the City should find that the Application requests “minor changes” to the CBCP.

LU.7 Coos Bay shall anticipate that conflicts may arise between the various plan implementation strategies contained in this plan when applying the policies to specific situations. To resolve these conflicts, if and when such may occur, Coos Bay shall consider the long term environmental, economic, social, and energy consequences expected to result from applying one strategy in place of others, then to select and apply the strategy that results in maximum public benefit as supported by findings of fact. This strategy is based on the recognition that a viable conflict resolution process is essential to the success of any comprehensive plan.

RESPONSE: Approval of the Application will not cause any conflicts between various CBCP implementation strategies. As explained in this narrative, the Application is consistent with all applicable policies of the CBCP and with the Goal exception criteria of the OAR. Therefore, the City should find that there is no need to resolve any conflicts in order to approve the Application.

For the above reasons, the City can find that the Application complies with the policies of the CBCP that apply to the Application.

(b) The proposed amendment is in the public interest; and

RESPONSE: The CBCP amendment that this Application seeks is in the public interest because it will result in increased navigational safety and efficiency for large vessels in the Channel, which will allow increased economic input and output to flow through the Channel, which in turn will be an economic boon to the City and the region. The Application complies with this criterion.

(c) Approval of the amendment will not result in a decrease in the level-of-service for capital facilities and services identified in the Coos Bay capital improvement plan(s).

RESPONSE: Approving this Application will not result in a decrease in the level-of-service for any identified capital facilities and/or services identified in the Coos Bay capital improvement plan. Therefore, the City can find that the Application complies with this criterion.

2. Statewide Planning Goals

Post-acknowledgment plan amendments must be in compliance with the Goals. ORS 197.175(2)(a); *1000 Friends of Oregon v. LCDRC*, 301 Or 447, 724 P2d 268 (1986). The rezoning is a post-acknowledgment plan amendment. Therefore, the City's decision must explain why the rezoning is in compliance with the Goals. Alternatively, if a Goal is not applicable, the City must adopt findings explaining why that Goal is not applicable. *Davenport v. City of Tigard*, 22 Or LUBA 577, 586 (1992). The responses below provide findings explaining why the Application is in compliance with the Goals, or alternatively, why the Goals are not applicable to the Application.

Goal 1: Citizen Involvement.

To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.

RESPONSE: Goal 1 requires local governments to adopt and administer programs to ensure the opportunity for citizens to be involved in all phases of the planning process. The City has adopted such a program for PAPAs, and it is incorporated within the CBDC and has been acknowledged by LCDRC. Among other things, the City's program requires notice to citizens, agencies, neighbors, and other interested parties followed by multiple public hearings before the City makes a decision on the Application. These procedures will provide ample opportunity for citizen involvement in all phases of the Application. The City should find that, upon compliance with its notice and hearing procedures, the City has reviewed the Application in a manner consistent with Goal 1. *See Wade v. Lane County*, 20 Or LUBA 369, 376 (1990) (Goal 1 is satisfied as long as the local government follows its acknowledged citizen involvement program).

In this case, as explained above in response to CBDC 17.215.020(1), the City would typically follow the Type III review and decision-making procedures of CBDC 17.130.100 when reviewing the Application. However, a modification to that process is appropriate in this case in order to comply with state law. CBDC 17.130.100 ("Type III procedure") provides that a Type III application "will be considered at one or more public hearings before the city's planning commission." The Application does not as a matter of course go before the City Council. *See* CBDC 17.130.130(5)(c) (providing for City Council consideration of a Type III application but only in event of appeal). The City

should find that state law requires the local governing body to take final action to approve any post-acknowledgment comprehensive plan amendment before it can become final. *Housing Land Advocates*, ___ Or LUBA at ___ (LUBA No. 2016-031, May 23, 2016). The Application includes a request for an exception to Goal 16, which is a request for a plan text amendment. Therefore, pursuant to *Housing Land Advocates*, the City should schedule the Application for final action by the City Council after the Planning Commission's initial recommendation.

In sum, the City should apply its Type III process in CBDC 17.30.100 to review and decide upon the Application, subject to also providing for a hearing and final decision on the Application by the City Council. Upon doing so, the City should find that it has complied with Goal 1.

Goal 2: Land Use Planning.

To establish a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions.

RESPONSE: Goal 2 requires establishing a land use planning process and policy framework as a basis for all land use decisions and requires an adequate factual base for all land use decisions. In the present case, the provisions of the CBDC and the ORS establish the land use planning process and policy framework for considering the Application. Further, the enclosed materials, including this narrative, demonstrate that the Application satisfies all applicable approval criteria. As such, there is an adequate factual base for the City's decision.

Additionally, Goal 2 requires that the City coordinate its review and decision on the Application with appropriate government agencies. In its review of the Application, the City has provided notice and an opportunity to comment to affected government agencies, including nearby cities and the State Departments of Land Conservation and Development and Transportation.

The City should find that the Application is consistent with Goal 2.

Goal 3: Agricultural Lands.

To maintain and preserve agricultural lands.

RESPONSE: Goal 3 concerns agricultural lands. The NRI Site does not include any agricultural lands, and approval of the amendments will not impact any agricultural lands. Therefore, the City should find that Goal 3 is not applicable to the Application.

Goal 4: Forest Lands.

To conserve forest lands by maintaining the forest land base and to protect the state's forest economy by making possible economically efficient forest practices that assure the continuous growing and harvesting of forest tree species as the leading use on forest land consistent with sound management of soil, air, water, and fish and wildlife resources and to provide for recreational opportunities and agriculture.

RESPONSE: Goal 4 protects forest lands. The NRI Site does not include any forest lands, and approval of the amendments will not impact any forest lands. Therefore, the City should find that Goal 4 is not applicable to the Application.

Goal 5: Natural Resources, Scenic and Historic Areas, and Open Spaces.

To protect natural resources and conserve scenic and historic areas and open spaces.

RESPONSE: Goal 5 protects certain types of inventoried resources. The NRI Site does not include any inventoried Goal 5 resources, and approval of the Application will not impact any Goal 5 inventoried resources. Therefore, the City should find that Goal 5 is not applicable to the Application.

Goal 6: Air, Water and Land Resources Quality.

To maintain and improve the quality of the air, water and land resources of the state.

RESPONSE: Goal 6 requires comprehensive plans to follow multiple guidelines to conserve the quality of air, water and land resources in the state. In a post-acknowledgment plan amendment proceeding, in order to satisfy Goal 6, the City is only required to find that it is reasonable to expect that federal and state environmental standards will be met in the future when permits for the dredging are sought. *Nicita v. City of Oregon City*, 74 Or LUBA 176 (2016). For two reasons, the City should find that it is reasonable to expect that JCEP's proposed dredging will satisfy federal and state environmental standards. First, JCEP has applied for state and federal approval of dredging activities at the NRI Site, and there is no indication that JCEP is precluded as a matter of law from obtaining approval of these applications. Second, the proposed map amendments do not alter existing City protections provided by the CBEMP restricting dredging activities, which protections have been previously deemed consistent with Goal 6, and are addressed later in this narrative.

For the above reasons, the Application complies with Goal 6.

Goal 7: Areas Subject to Natural Hazards.

To protect people and property from natural hazards.

RESPONSE: Goal 7 requires local governments to identify and plan for natural hazard areas and coordinate their natural hazard plans and programs with state agencies. This Application complies with Goal 7 because it will not increase the likelihood of damage to people or property within the City from natural hazards.

Goal 8: Recreational Needs.

To satisfy the recreational needs of the citizens of the state and visitors, and where appropriate, to provide for the siting of necessary recreational facilities including destination resorts.

RESPONSE: Goal 8 does not apply to the Application because it does not involve recreation or inventoried recreation areas, facilities, or opportunities.

Goal 9: Economic Development.

To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens.

RESPONSE: The Application complies with Goal 9. The purpose of the Application is to complete the NRIs, which in turn will facilitate a broader operational window, and increase safety and efficiency of transit, in the Channel. This will be a boon to the economic prospects for the City and the state because it will make the Channel safer and more efficient for productive economic enterprises of the kind that provide opportunities to Oregonians.

Goal 10: Housing.

To provide for the housing needs of the citizens of the state.

RESPONSE: Goal 10 and its implementing rules require each local government to inventory the supply of buildable residential lands and to ensure that the supply of such buildable lands meets the local government's anticipated housing needs. The Application will not affect the supply of residential lands in the City. Therefore, the City should find that the Application is consistent with Goal 10, to the extent it is applicable.

Goal 11: Public Facilities and Services.

To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

RESPONSE: Goal 11 does not apply to the Application because the Application does not involve or affect public facilities and services as a framework for development.

Goal 12: Transportation.

To provide and encourage a safe, convenient and economic transportation system.

RESPONSE: The Application complies with Goal 12. Goal 12 directs local governments to plan transportation systems that consider all modes of transportation, including water, that facilitate the flow of goods and services so as to strengthen the local and regional economy, that conserve energy, and that avoid principal reliance on one mode of transportation. The Application furthers these goals by supporting safer and more efficient use of the Channel for water transportation. This safer and more efficient use of the Channel will conserve energy that is currently wasted when, outside the Channel's operational window, vessels wait outside the Channel, using fuel and adding time and expense to transit.

Goal 13: Energy Conservation.

To conserve energy.

RESPONSE: The Application complies with Goal 13. Goal 13 directs local governments to manage land use so as to maximize the conservation of all forms of energy. The Application will facilitate maximal energy conservation by increasing the safety and efficiency of vessel transit of the Channel, and by increasing the Channel's operational window. This will reduce the amount of time vessels spend waiting to enter and navigate the Channel, due to environmental conditions that exceed those required by the Pilots for a safe vessel transit, which will increase the efficiency of material transportation and reduce energy waste from inefficiency of transportation.

Goal 14: Urbanization.

To provide for an orderly and efficient transition from rural to urban land use.

RESPONSE: Goal 14 does not apply to the Application, which does not involve urban development on rural land.

Goal 15: Willamette River Greenway.

To protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River as the Willamette River Greenway.

RESPONSE: Goal 15 only applies to lands along the Willamette River. The Modification Sites are not located along the Willamette River or in the Willamette River Greenway. Approval of the amendments will not impact the Willamette River of the Willamette River Greenway. Therefore, the City should find that Goal 15 is not applicable to the Application.

Goal 16: Estuarine Resources.

To recognize and protect the unique environmental, economic, and social values of each estuary and associated wetlands; and to protect, maintain, where appropriate develop, and where appropriate restore the long-term environmental, economic, and social values, diversity and benefits of Oregon's estuaries.

...

MANAGEMENT UNITS

Diverse resources, values, and benefits shall be maintained by classifying the estuary into distinct water use management units. When classifying estuarine areas into management units, the following shall be considered in addition to the inventories:

- 1. Adjacent upland characteristics and existing land uses;**
- 2. Compatibility with adjacent uses;**
- 3. Energy costs and benefits; and**
- 4. The extent to which the limited water surface area of the estuary shall be committed to different surface uses.**

At a minimum, the following kinds of management units shall be established:

- 1. Natural -- in all estuaries, areas shall be designated to assure the protection of significant fish and wildlife habitats, of continued biological productivity within the estuary, and of scientific, research, and educational needs. These shall be managed to preserve the natural resources in recognition of dynamic, natural, geological, and evolutionary processes. Such areas shall include, at a minimum, all**

major tracts of salt marsh, tidflats, and seagrass and algae beds. Permissible uses in natural management units shall include the following:

- a. Undeveloped low-intensity, water-dependent recreation;
- b. Research and educational observations;
- c. Navigation aids, such as beacons and buoys;
- d. Protection of habitat, nutrient, fish, wildlife, and aesthetic resources;
- e. Passive restoration measures;
- f. Dredging necessary for on-site maintenance of existing functional tidegates and associated drainage channels and bridge crossing support structures;
- g. Riprap for protection of uses existing as of October 7, 1977, unique natural resources, historical and archaeological values; and public facilities; and
- h. Bridge crossings.

Where consistent with the resource capabilities of the area and the purposes of this management unit the following uses may be allowed:

- a. Aquaculture which does not involve dredge or fill or other estuarine alteration other than incidental dredging for harvest or benthic species or removable in-water structures such as stakes or racks;
- b. Communication facilities;
- c. Active restoration of fish and wildlife habitat or water quality and estuarine enhancement;
- d. Boat ramps for public use where no dredging or fill for navigational access is needed; and
- e. Pipelines, cables, and utility crossings, including incidental dredging necessary for their installation.
- f. Installation of tidegates in existing functional dikes.
- g. Temporary alterations.

h. Bridge crossing support structures and dredging necessary for their installation.

A use or activity is consistent with the resource capabilities of the area when either the impacts of the use on estuarine species, habitats, biological productivity and water quality are not significant or that the resources of the area are able to assimilate the use and activity and their effects and continue to function in a manner to protect significant wildlife habitats, natural biological productivity, and values for scientific research and education.

2. Conservation -- in all estuaries, except those in the overall Oregon Estuary Classification which are classed for preservation, areas shall be designated for long-term uses of renewable resources that do not require major alteration of the estuary, except for the purpose of restoration. These areas shall be managed to conserve the natural resources and benefits. These shall include areas needed for maintenance and enhancement of biological productivity, recreational and aesthetic uses, and aquaculture. They shall include tracts of significant habitat smaller or of less biological importance than those in (1) above, and recreational or commercial oyster and clam beds are not included in (1) above. Areas that are partially altered and adjacent to existing development of moderate intensity which do not possess the resource characteristics of natural or development units shall also be included in this classification. Permissible uses in conservation management units shall be all uses listed in (1) above except temporary alterations. Where consistent with the resource capabilities of the area and the purposes of this management unit the following uses may be allowed:

- a. High-intensity water-dependent recreation, including boat ramps, marinas and new dredging for boat ramps and marinas;**
- b. Minor navigational improvements;**
- c. Mining and mineral extraction, including dredging necessary for mineral extraction;**
- d. Other water dependent uses requiring occupation of water surface area by means other than dredge or fill;**
- e. Aquaculture requiring dredge or fill or other alteration of the estuary;**
- f. Active restoration for purposes other than those listed in 1(d).**
- g. Temporary alterations.**

A use or activity is consistent with the resource capabilities of the area when either the impacts of the use on estuarine species, habitats, biological productivity, and water quality are not significant or that the resources of the area are able to assimilate the use and activity and their effects and continue to function in a manner which conserves long-term renewable resources, natural biologic productivity, recreational and aesthetic values and aquaculture.

3. Development -- in estuaries classified in the overall Oregon Estuary Classification for more intense development or alteration, areas shall be designated to provide for navigation and other identified needs for public, commercial, and industrial water-dependent uses, consistent with the level of development or alteration allowed by the overall Oregon Estuary Classification. Such areas shall include deep-water areas adjacent or in proximity to the shoreline, navigation channels, subtidal areas for in-water disposal of dredged material and areas of minimal biological significance needed for uses requiring alterations of the estuary not included in (1) and (2) above. Permissible uses in areas managed for water-dependent activities shall be navigation and water-dependent commercial and industrial uses. As appropriate the following uses shall also be permissible in development management units:

- a. Dredge or fill, as allowed elsewhere in the goal;**
- b. Navigation and water-dependent commercial enterprises and activities;**
- c. Water transport channels where dredging may be necessary;**
- d. Flow-lane disposal of dredged material monitored to assure that estuarine sedimentation is consistent with the resource capabilities and purposes of affected natural and conservation management units.**
- e. Water storage areas where needed for products used in or resulting from industry, commerce, and recreation;**
- f. Marinas.**

Where consistent with the purposes of this management unit and adjacent shorelands designated especially suited for water-dependent uses or designated for waterfront redevelopment, water-related and nondependent, nonrelated uses not requiring dredge or fill; mining and mineral extraction; and activities identified in (1) and (2) above shall also be appropriate. In designating areas for these uses, local

governments shall consider the potential for using upland sites to reduce or limit the commitment of the estuarine surface area for surface uses.

RESPONSE: Goal 16 requires that local governments divide all estuaries that Goal 16 protects into, at a minimum, the above “management units”--Natural, Conservation, and Development. The CBEMP complies with Goal 16 by creating and maintaining three “Aquatic Management Units” and seven “Shoreland Management Units” including the baseline Natural, Conservation, and Development management units that Goal 16 requires. The NRI Site is currently zoned 52-NA (a natural aquatic unit). This Application seeks to amend the CBEMP to apply the DDNC-DA (a development aquatic) management unit to the NRI Site in order to allow dredging necessary to complete the NRIs. Such dredging is not allowed in natural management units. Therefore, a Goal 16 exception is required to rezone the NRI Site to DDNC-DA.

Goal 17: Coastal Shorelands.

To conserve, protect, where appropriate, develop and where appropriate restore the resources and benefits of all coastal shorelands, recognizing their value for protection and maintenance of water quality, fish and wildlife habitat, water-dependent uses, economic resources and recreation and aesthetics. The management of these shoreland areas shall be compatible with the characteristics of the adjacent coastal waters; and

To reduce the hazard to human life and property, and the adverse effects upon water quality and fish and wildlife habitat, resulting from the use and enjoyment of Oregon’s coastal shorelands.

RESPONSE: Goal 17 regulates coastal shorelands. The NRI Site does not include any designated coastal shorelands. Moreover, the proposed amendments will not impact any designated coastal shorelands. Therefore, the City should find that Goal 17 is not applicable to the Application.

Goal 18: Beaches and Dunes.

To conserve, protect, where appropriate develop, and where appropriate restore the resources and benefits of coastal beach and dune areas; and

To reduce the hazard to human life and property from natural or man-induced actions associated with these areas.

RESPONSE: Goal 18 concerns beaches and dunes. The NRI Site does not include any designated beaches or dunes. Moreover, the proposed amendments will not

impact any designated beaches or dunes. Thus, the City should find that Goal 18 is not applicable to the Application.

Goal 19: Ocean Resources.

To conserve marine resources and ecological functions for the purpose of providing long-term ecological, economic, and social value and benefits to future generations.

RESPONSE: Goal 19 calls for the conservation of ocean resources. The NRI Site does not include or abut any ocean resources, and the proposed amendments will not impact any ocean resources. Therefore, the City should find that Goal 19 is not applicable to the Application.

For the above reasons, the City can find that the Application complies with the Goals.

B. Goal 16 “Reasons” Exception:

ORS 197.732

(2) A local government may adopt an exception to a goal if:

...

(c) The following standards are met:

- (A) Reasons justify why the state policy embodied in the applicable goals should not apply;**
- (B) Areas that do not require a new exception cannot reasonably accommodate the use;**
- (C) The long term environmental, economic, social and energy consequences resulting from the use at the proposed site with measures designed to reduce adverse impacts are not significantly more adverse than would typically result from the same proposal being located in areas requiring a goal exception other than the proposed site; and**
- (D) The proposed uses are compatible with other adjacent uses or will be so rendered through measures designed to reduce adverse impacts.**

RESPONSE: The above criteria are duplicative with the same criteria set forth in OAR 660-004-0020, which implements ORS 197.732. Therefore, this Application responds to the above criteria in the section immediately below that is devoted to OAR 660-004-0020. For the reasons explained below, the proposed exception complies with the administrative rules, and compliance with these administrative rules will ensure compliance with these statutory provisions.

OAR 660-004-0020

- (1) If a jurisdiction determines there are reasons consistent with OAR 660-004-0022 to use resource lands for uses not allowed by the applicable Goal or to allow public facilities or services not allowed by the applicable Goal, the justification shall be set forth in the comprehensive plan as an exception. As provided in OAR 660-004-0000(1), rules in other divisions may also apply.**

RESPONSE: This Application presents “reasons” (as set forth in more detail below) consistent with OAR 660-004-0022 why Goal 16 should not apply to the NRI Site. This Application proposes that the City set forth in its comprehensive plan the justification for a Goal 16 exception at the NRI Site. Therefore, this Application satisfies this approval criterion.

- (2) The four standards in Goal 2 Part II(c) required to be addressed when taking an exception to a goal are described in subsections (a) through (d) of this section, including general requirements applicable to each of the factors:**
- (a) “Reasons justify why the state policy embodied in the applicable goals should not apply.” The exception shall set forth the facts and assumptions used as the basis for determining that a state policy embodied in a goal should not apply to specific properties or situations, including the amount of land for the use being planned and why the use requires a location on resource land;**

RESPONSE: This standard requires identifying “reasons” why the state policy in Goal 16 should not apply to the NRI Site. OAR 660-004-0022 identifies the types of “reasons” that may be used to justify the exception. JCEP’s responses to that rule below justify the proposed Goal 16 exception.

OAR 660-004-0022

An exception under Goal 2, Part II(c) may be taken for any use not allowed by the applicable goal(s) or for a use authorized by a statewide planning goal that cannot comply with the approval standards for that type of use. The types of reasons that may or may not be used to justify certain types of uses not allowed on resource lands are set forth in the following sections of this rule. Reasons that may allow an exception to Goal 11 to provide sewer service to rural lands are described in OAR 660-011-0060. Reasons that may allow transportation facilities and improvements that do not meet the requirements of OAR 660-012-0065 are provided in OAR 660-012-0070. Reasons that rural lands are irrevocably committed to urban levels of development are provided in OAR 660-014-0030. Reasons that may justify the establishment of new urban development on undeveloped rural land are provided in OAR 660-014-0040.

- (1) For uses not specifically provided for in this division, or in OAR 660-011-0060, 660-012-0070, 660-014-0030 or 660-014-0040, the reasons shall justify why the state policy embodied in the applicable goals should not apply. Such reasons include but are not limited to the following:**
 - (a) There is a demonstrated need for the proposed use or activity, based on one or more of the requirements of Goals 3 to 19; and either**
 - (A) A resource upon which the proposed use or activity is dependent can be reasonably obtained only at the proposed exception site and the use or activity requires a location near the resource. An exception based on this paragraph must include analysis of the market area to be served by the proposed use or activity. That analysis must demonstrate that the proposed exception site is the only one within the market area at which the resource depended upon can be reasonably obtained; or**
 - (B) The proposed use or activity has special features or qualities that necessitate its location on or near the proposed exception site.**

RESPONSE: The Application must show a “demonstrated need” for the proposed use or activity based on the requirements of one or more of Goals 3 to 19. The “demonstrated need” for the NRIs is based primarily on Goals 9 and 12. As explained in

Section II. of this narrative above, structural restrictions on the Channel cause significant transit delays and unduly increase required directional changes during transit through the Channel. Delays are measured in the total transit time, from the time the vessel arrives off the coast of Coos Bay until it returns offshore after calling at its local Coos Bay destination. These delays decrease the efficiency and competitiveness of maritime commerce on a global scale, thereby jeopardizing continued success for maritime commerce in Coos Bay. Minimizing delay is a pressing need because companies that utilize the port of Coos Bay have identified potential new customers in Asia that desire to export cargo using bulk carriers that are slightly larger than the ships typically calling today. Various marine terminal businesses within Coos Bay require assurances that terminals can efficiently accommodate larger dimension bulk carriers in the future. The NRIs will allow companies to secure emerging opportunities to export products with today's larger vessels, including bulk carriers of up to 299.9 meters (983.3 feet) in length, 49 meters (160.8 feet) in beam, and 11.9 meters (39 feet) in draft. With respect to the Liquefied Natural Gas ("LNG") facility that JCEP proposes to develop in the lower bay, JCEP and the Pilots believe the NRIs are essential to achieve the required number of LNG vessel transits needed to lift the JCEP design annual LNG production volume. Excessive delays in LNG carrier transit in the Channel, to and from the LNG terminal, could result in a shore storage tank topping situation, requiring JCEP to curtail LNG production.

The JCEP estimate that dredging to complete navigation efficiency and reliability improvements at the NRI Sites will allow JCEP to export the full capacity of the optimized design production of 7.8 mtpa from JCEP's LNG terminal on the North Spit. To satisfy this need, JCEP proposes the NRIs to improve the navigation efficiency and reliability for vessels transiting the Channel by widening an extremely restrictive, unavoidable turn in the Channel. The NRIs will fulfill a demonstrated need for continued and enhanced shipping within the Bay; consistent with the Policy objectives of Goals 9 and 12.

The Application must also provide "reasons" that "justify why the state policy embodied in the applicable goals should not apply." OAR 660-004-0022(1)(a)(B) provides that a sufficient "reason" is that the "proposed use or activity has special features or qualities that necessitate its location on or near the proposed exception site." That is the case here. JCEP seeks to improve navigation in the Channel and to do so has selected the NRI Site that corresponds to the area of the Channel in the City that is most in need of improvement in order to facilitate safer and more efficient navigation. Therefore, this Application provides reasons why the "proposed use or activity has special features or qualities that necessitate its location on or near the proposed exception site."

- (8) Goal 16 - Other Alterations or Uses: An exception to the requirement limiting dredge and fill or other reductions or degradations of natural values to water-dependent uses or to the natural and conservation management unit requirements limiting alterations and uses is justified, where consistent with ORS chapter 196, in any of the circumstances specified in subsections (a) through (e) of this section:**

RESPONSE: The Application seeks an exception to the requirement limiting dredging in an area that is currently designated, in accordance with Goal 16, as a natural management unit. As explained below, the exception is justified because the Application will authorize dredging to maintain adequate depth to permit continuation of the present level of navigation as contemplated by OAR 660-004-0022(8)(b).

...

- (b) Dredging to maintain adequate depth to permit continuation of the present level of navigation in the area to be dredged.**

RESPONSE: The Application proposes dredging to maintain adequate depth to permit continuation of the presently authorized level of navigation at the NRI Site. As background, the Channel was initially authorized in 1899 and since then has undergone ten modifications. Most recently, the Channel was expanded from -35 feet to -37 feet in 1997 to allow for the safe navigation and transit of Coos Bay for the size of ships prevalent during that time period.

However, as explained above, environmental conditions, including wind, fog, and currents have caused the Pilots to impose ever more limiting restrictions on when vessels may safely transit the Channel. These restrictions, in turn, cause significant delays and thus prevent the Channel from operating at maximum efficiency. Minimizing delay is a pressing need because companies that utilize the International Port of Coos Bay have identified potential new customers in Asia that desire to export cargo using bulk carriers through the Channel. Various marine terminal businesses within Coos Bay require assurances that the Channel can efficiently accommodate bulk carriers.

Dredging to complete the NRI Sites will increase the operational window to safely transit any vessel through the Channel. The NRIs are designed to increase the environmental operating windows for all ships entering Coos Bay by softening critical turns, relocating aids to navigation, and reducing the required Channel directional changes. The NRIs are designed to reduce entry and departure delays and allow for more efficient vessel transits through the Channel for the size of vessels entering the Port today.

For JCEP and its LNG terminal, the NRI enhancements will allow for transit of LNG vessels of similar overall dimensions to those listed in the July 1, 2008 USCG Waterway Suitability Report, the USCG Letter of Recommendation dated May 10, 2018 and USCG letter confirmation dated November 7, 2018 see Exhibit 4, but under a broader range of weather conditions, specifically higher wind speeds. As a result, JCEP estimates that, upon completion of the NRIs, JCEP will be able to export the full capacity of the optimized design production of the LNG Terminal on a consistent annual basis.

For these reasons, the dredging associated with the NRIs will maintain adequate depth to permit continuation of the presently allowed level of navigation, yet allow that navigation to occur more efficiently, safely, and reliably. This standard is met.

- (f) In each of the situations set forth in subsections (7)(a) to (e) of this rule, the exception must demonstrate that the proposed use and alteration (including, where applicable, disposal of dredged materials) will be carried out in a manner that minimizes adverse impacts upon the affected aquatic and shoreland areas and habitats.**

RESPONSE: JCEP will complete its proposed NRIs in a manner that minimizes adverse impacts upon the affected aquatic and shoreland areas and habitats. To complete the NRIs, JCEP will dredge within the Channel and adjacent to the Channel at the NRI Sites. JCEP will minimize adverse impacts for the reasons explained below.

JCEP plans to perform capital and maintenance dredging during the ODFW-approved in-water work window (October 1 to February 15) to reduce impacts to sensitive life stages of fish in the bay.

JCEP will use various dredging methods to minimize the effects of the NRIs on water turbidity within the Bay. JCEP will use best management practices (including cutter head suction, clamshell, and hopper dredging) associated with dredging to reduce turbidity effects, and as a result of those methods JCEP expects increased water turbidity as a result of the NRIs to be temporary and limited to the immediate vicinity of dredging operations. Furthermore, JCEP does not anticipate oil spills or toxic discharges to occur when constructing the NRIs, and JCEP will use precautions to avoid either. Dredging and material transport vessels will carry small volumes of petroleum in comparison to large bulk carriers and Panamax vessels that regular traverse Coos Bay. JCEP will use best management practices to avoid and minimize spills or discharges during dredging operations and dredged material transport, including the implementation of spill containment plans.

Dredging equipment and material transport vessels related to the NRIs may generate temporary noise disturbances. However, the noise will be localized to the immediate dredging area. JCEP does not anticipate that noise levels will have more than temporary effects on the behavior of aquatic species in the area of the NRI Sites.

JCEP's environmental consultant has further evaluated potential adverse impacts associated with the dredging activities and describes ways by which JCEP will minimize such adverse impacts. See DEA memorandum in Exhibit 5.

For these reasons, the City should find that the Application satisfies this standard.

- (b) "Areas that do not require a new exception cannot reasonably accommodate the use." The exception must meet the following requirements:**

RESPONSE: The NRIs are location-specific. Their purpose is to improve safety and navigational efficiency in the Channel. There are no other areas that could accommodate the use. Therefore, "areas that do not require a new exception cannot reasonably accommodate the use." The Application satisfies this criterion.

- (A) The exception shall indicate on a map or otherwise describe the location of possible alternative areas considered for the use that do not require a new exception. The area for which the exception is taken shall be identified;**

RESPONSE: As explained above, the NRIs are location-specific and it would not be possible for JCEP to locate them anywhere that does not require a new exception. Exhibit 1 identifies the NRI Site, which is the area where JCEP proposes to locate the exception. The Application satisfies this criterion.

- (B) To show why the particular site is justified, it is necessary to discuss why other areas that do not require a new exception cannot reasonably accommodate the proposed use. Economic factors may be considered along with other relevant factors in determining that the use cannot reasonably be accommodated in other areas. Under this test the following questions shall be addressed:**

- (i) Can the proposed use be reasonably accommodated on resource land that would not require an**

exception, including the density of uses on nonresource land? If not, why not?

- (ii) Can the proposed use be reasonably accommodated on resource land that is already irrevocably committed to nonresource uses not allowed by the applicable Goal, including resource land in existing unincorporated communities, or by increasing the density of uses on committed lands? If not, why not?
- (iii) Can the proposed use be reasonably accommodated inside an urban growth boundary? If not, why not?
- (iv) Can the proposed use be reasonably accommodated without the provision of a proposed public facility or service? If not, why not?

RESPONSE: As explained above, the NRIs are location-specific and it would not be possible for JCEP to locate them anywhere that does not require a new exception. Whether or not the NRIs can be accommodated inside a UGB, they still require a Goal 16 exception and they still must be located at the NRI sites, so this question is not applicable to an analysis of whether alternative areas that do not require an exception cannot accommodate the NRIs. Moreover, the NRIs relate to a public facility and will not require any additional public facilities or services to construct. The Application satisfies this criterion.

- (C) The “alternative areas” standard in paragraph B may be met by a broad review of similar types of areas rather than a review of specific alternative sites. Initially, a local government adopting an exception need assess only whether those similar types of areas in the vicinity could not reasonably accommodate the proposed use. Site specific comparisons are not required of a local government taking an exception unless another party to the local proceeding describes specific sites that can more reasonably accommodate the proposed use. A detailed evaluation of specific alternative sites is thus not required unless such sites are specifically described, with facts to support the assertion that the sites are more reasonable, by another party during the local exceptions proceeding.

RESPONSE: As explained above, the NRIs are location-specific and so it is not possible for JCEP to locate them anywhere that does not require a new exception. There are no “alternative areas” that can accommodate the NRIs. The Application satisfies this criterion.

- (c) **“The long-term environmental, economic, social and energy consequences resulting from the use at the proposed site with measures designed to reduce adverse impacts are not significantly more adverse than would typically result from the same proposal being located in areas requiring a goal exception other than the proposed site.”** The exception shall describe: the characteristics of each alternative area considered by the jurisdiction in which an exception might be taken, the typical advantages and disadvantages of using the area for a use not allowed by the Goal, and the typical positive and negative consequences resulting from the use at the proposed site with measures designed to reduce adverse impacts. A detailed evaluation of specific alternative sites is not required unless such sites are specifically described with facts to support the assertion that the sites have significantly fewer adverse impacts during the local exceptions proceeding. The exception shall include the reasons why the consequences of the use at the chosen site are not significantly more adverse than would typically result from the same proposal being located in areas requiring a goal exception other than the proposed site. Such reasons shall include but are not limited to a description of: the facts used to determine which resource land is least productive, the ability to sustain resource uses near the proposed use, and the long-term economic impact on the general area caused by irreversible removal of the land from the resource base. Other possible impacts to be addressed include the effects of the proposed use on the water table, on the costs of improving roads and on the costs to special service districts.

RESPONSE: The NRI Site is the only possible site at which JCEP can make the improvements necessary to increase the safety and efficiency of vessel navigation in the Channel. The NRI Site is a location that JCEP identified where, as explained above, there is an extremely restrictive, unavoidable turn in the Channel. This turn is responsible for significant delays in vessel transit in the Channel. Although JCEP could widen other areas of the Channel to improve navigational efficiency, the NRI Site is the site most in need of improvement to achieve the results in improved efficiency and safety of navigation, that

is required within the Channel. Therefore, in order to improve the safety and efficiency of such transit, JCEP must widen the Channel at the locations of this turn (the NRI Site). There are no alternative sites requiring a Goal exception at which JCEP can make the necessary improvements. Moreover, the long-term economic, environmental, social and energy costs of widening other areas of the Channel that JCEP could feasibly widen (although doing so would not achieve the results in improved efficiency and safety of navigation that JCEP desires) are not materially different from the same consequences of making the NRIs at the NRI Site. All such areas are nearby each other and are within the Channel. Furthermore, the Channel itself is a fixed location that cannot be moved. Therefore, the City should find that the Application satisfies this criterion.

- (d) **“The proposed uses are compatible with other adjacent uses or will be so rendered through measures designed to reduce adverse impacts.” The exception shall describe how the proposed use will be rendered compatible with adjacent land uses. The exception shall demonstrate that the proposed use is situated in such a manner as to be compatible with surrounding natural resources and resource management or production practices. “Compatible” is not intended as an absolute term meaning no interference or adverse impacts of any type with adjacent uses.**

RESPONSE: The NRI Sites located immediately adjacent to the existing Channel. This criterion, therefore, requires JCEP to demonstrate that JCEP’s proposal for the NRIs is designed to reduce adverse impacts on the waters of the Bay and the Channel, and to be compatible with the use of the Channel for transportation. The proposal is compatible with land uses in the Channel (including transit) because it involves dredging below the surface of the water for the purpose of increasing safety and efficiency in navigating the Channel. The proposal is compatible with land uses in the Channel because it is designed to make them easier and more effective. Furthermore, the proposal is designed to reduce adverse environmental impacts upon the waters of the bay and the Channel. See DEA memo included in Exhibit 5.

- (3) **If the exception involves more than one area for which the reasons and circumstances are the same, the areas may be considered as a group. Each of the areas shall be identified on a map, or their location otherwise described, and keyed to the appropriate findings.**

RESPONSE: This Application seeks a Goal 16 exception for one NRI site in the City. The remaining NRI Sites are located outside of the City’s jurisdiction. Exhibit 1 includes a map that identifies the NRI Sites.

- (4) For the expansion of an unincorporated community described under OAR 660-022-0010, including an urban unincorporated community pursuant to OAR 660-022-0040(2), the reasons exception requirements necessary to address standards 2 through 4 of Goal 2, Part II(c), as described in of subsections (2)(b), (c) and (d) of this rule, are modified to also include the following:
- (a) Prioritize land for expansion: First priority goes to exceptions lands in proximity to an unincorporated community boundary. Second priority goes to land designated as marginal land. Third priority goes to land designated in an acknowledged comprehensive plan for agriculture or forestry, or both. Higher priority is given to land of lower capability site class for agricultural land, or lower cubic foot site class for forest land; and
 - (b) Land of lower priority described in subsection (a) of this section may be included if land of higher priority is inadequate to accommodate the use for any of the following reasons:
 - (A) Specific types of identified land needs cannot be reasonably accommodated on higher priority land;
 - (B) Public facilities and services cannot reasonably be provided to the higher priority area due to topographic or other physical constraints; or
 - (C) Maximum efficiency of land uses with the unincorporated community requires inclusion of lower priority land in order to provide public facilities and services to higher priority land.

RESPONSE: This Application does not seek to expand an unincorporated community. Therefore, these approval criteria do not apply to the Application.

C. Approval For Estuarine and Coastal Shoreland Uses and Activities Permit

1. CBDC

CBDC - 17.370.010 General

Uses and activities permitted by the Coos Bay estuary management plan are subject to general and special conditions and policies to comply with statewide

planning goals and the Coos Bay Estuary Plan as adopted by the city of Coos Bay. Compliance with these conditions and policies must be verified; therefore, all uses and activities under jurisdiction of the Coos Bay estuary management plan must be reviewed.

RESPONSE: CBDC 17.370.010 makes the general and special conditions of the CBEMP approval criteria for this Application. The DDNC-DA CBEMP zone allows new and maintenance dredging, which this Application seeks approval for, subject to general conditions (CBEMP Policies #17 and #18) and a special condition (mitigation of adverse impacts - CBEMP Policy #5). As explained below, CBEMP Policy #5, in turn, triggers consideration of CBEMP Policies #4 and #4a. Therefore, this Application addresses these policies.

JCEP also requests approval of an accessory temporary dredge line in the 52-NA, 53-CA, 54-DA, and 55-CA CBEMP management units. The dredge line is described in the DEA memo included in Exhibit 5, and it is depicted in the figures included in Exhibit 6. Finally, JCEP requests approval of an accessory buoy in the 52-NA management unit. The buoy is located south of the Channel and is depicted in Exhibit 7.

DDNC-DA Zone - General Conditions For Approval of “New and Maintenance Dredging”

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

Local government shall protect major marshes, significant wildlife habitat, coastal headlands, and exceptional aesthetic resources located within the Coos Bay Coastal Shorelands Boundary and included in the Plan inventory, except where exceptions allow otherwise. Local government shall consider:

- A. “major marshes” to include areas identified in the Goal #17 “Linkage Matrix” and the Shoreland Values Inventory map;**
- B. “significant wildlife habitats,” coastal headlands and exceptional aesthetic resources to include those areas identified on the map “Shoreland Values.”**

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 “Shoreland Values” 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.

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: According to the Shoreland Values map, there are no inventoried resources at the NRI Site for which Policy #17 requires protection. Therefore, CBEMP Policy #17 does not apply to JCEP’s request for approval to complete the NRIs.

CBEMP Policy #18 - Protection of Historical and Archaeological Sites Within Coastal Shorelands

Local government shall provide special protection to historic and archaeological sites located within the Coos Bay Coastal Shorelands Boundary, except where Exceptions allow otherwise. These sites are identified in the section entitled: “Coastal Shoreland Values Requiring Mandatory Protection” and on the “Special Considerations Map.” Further, local government shall continue to refrain from widespread dissemination of site-specific information about identified archaeological sites.

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 archaeological and historical values of the site.

The development proposal, when submitted, shall include a site development plan 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 Coos, Siuslaw, Lower Umpqua Tribal Council in writing, together with a copy of the site development plan. The Tribal Council shall have the right to submit a written statement to the local government within ten (10) 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 measures 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 Tribal Council; 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(8) and (9). Upon receipt of the statement by the Tribal Council, or upon expiration of the Tribal Council’s ten-day response period, the local government shall conduct an administrative review of the development proposal 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 Tribal Council, as well as any additional measures deemed necessary by the local government to protect the historical and archaeological values of the site. If the property owner and the Tribal Council 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 the evidence whether the development project may be allowed to proceed, subject to any modifications deemed necessary by the governing body to protect the historical and archaeological values of the site.

This strategy recognizes that protection of historical and archaeological sites is not only a community's social responsibility, but is also legally required by Goal #17 and ORS 97.745. It also recognizes that historical and archaeological sites are non-renewable cultural resources.

RESPONSE: The City has not inventoried any historical, cultural, and archaeological resources in the area of proposed development. Therefore, there are no known inventoried resources in this location to consider under this policy.

Notwithstanding this fact, JCEP recognizes that, during the course of development consistent with the Application, there may be unanticipated discovery of cultural resources, remains, and/or objects. To address this possibility, JCEP has coordinated with the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians ("Tribes") to enter a memorandum of agreement ("MOA") addressing these circumstances, and more broadly, CBEMP Policy #18.

A copy of the signed 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 Pipeline. The CRPA and UDP are attached as exhibits to the MOA in Exhibit 9. In the MOA, JCEP and the Tribes expressly agreed that the CRPA and the UDP constitute appropriate measures under CBEMP Policy #18 that would protect the cultural, historical, and archaeological values of this development site. JCEP is willing to accept a condition of City approval of the Application requiring compliance with the MOA and its attachments.

Subject to the proposed condition, the City should find that the Application is consistent with CBEMP Policy #18.

DDNC-DA Zone - Special Condition For Approval of "New and Maintenance Dredging"

CBEMP Policy #5 - Estuarine Fill and Removal

Dredging and/or filling shall be allowed only:

- A. If required for navigation or other water-dependent uses that requires an estuarine location or if specifically allowed by the applicable management unit requirements of this goal; and**
- B. If no feasible alternative upland location exists; and**
- C. If a public need (i.e., a substantial public benefit) is demonstrated and the use or alteration does not unreasonably interfere with public trust rights; and**
- D. If adverse impacts are minimized; and**
- E. 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).**

Other uses and activities which could alter the estuary shall only be allowed if the requirements in B, C, and D are met. All portions of these requirements may be applied at the time of plan development for actions identified in the Plan. Otherwise, they shall be applied at the time of permit review.

This strategy shall be implemented by the preparation of findings by local government documenting that such proposed actions are consistent with the Comprehensive Plan and with criteria "a" through "e" above. However, where goal exceptions are included within this plan, the findings in the exception shall be sufficient to satisfy criteria "a" through "c" above. Identification and minimization of adverse impacts as required in "d" above shall follow the procedure set forth in Policy #4a. The findings shall be developed in response to a "request for comment" by the Division of State Lands (DSL), which shall seek local government's determination regarding the appropriateness of a permit to allow the proposed action.

"Significant" as used in "other significant reduction or degradation of natural estuarine values", shall be determined by:

- A. The U.S. Army Corps of Engineers through its Section 10 and 404 permit processes; or
- B. The Department of Environmental Quality (DEQ) for approvals of new aquatic log storage areas only; or
- C. The Department of Fish and Wildlife for new aquaculture proposals only.

This strategy recognizes that Goal #16 limits dredging, fill, and other estuarine degradation in order to protect the integrity of the estuary.

RESPONSE: JCEP's new and maintenance dredging activities must be consistent with CBEMP Policy #5. The DDNC-DA zone allows new and maintenance dredging. Furthermore, because the Application includes a Goal 16 exception, Policy #5 requires only that the Application comply with criteria D. and E. above, because, as expressly noted within the Policy, the findings for the Goal 16 exception suffice for this Application to comply with criteria A. - C.

Policy #5 directs that an applicant demonstrate compliance with criterion D. of Policy #5 (identification and minimization of adverse impacts) pursuant to the procedure set forth in CBEMP Policy #4a. Furthermore, Special Conditions for approval of new and maintenance dredging in the DDNC-DA zone provide that such dredging is allowed only "subject to finding that adverse impacts have been minimized." JCEP will minimize adverse impacts as summarized below, in response to CBEMP Policies #4 and #4a, and as further discussed in the DEA memo included in Exhibit 5.

JCEP will use various dredging methods to minimize the effects of the NRIs on water turbidity within the bay. JCEP will use best management practices (including cutter head suction, clamshell, and hopper dredging) associated with dredging to reduce turbidity effects, and as a result of those methods JCEP expects increased water turbidity as a result of the NRIs to be temporary and limited to the immediate vicinity of dredging operations. Furthermore, JCEP does not anticipate oil spills or toxic discharges to occur when constructing the NRIs, and JCEP will use precautions to avoid either. Dredging and material transport vessels will carry small volumes of petroleum in comparison to large bulk carriers and Panamax vessels that regularly traverse Coos Bay. JCEP will use best management practices to avoid and minimize spills or discharges during dredging operations and dredged material transport, including the implementation of spill containment plans. JCEP plans to perform capital and maintenance dredging during the ODFW-approved in-water work window (October 1 to February 15) to reduce impacts to sensitive life stages of fish in the bay.

Criterion E. of Policy #5 requires that the NRIs are “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).” The NRIs are consistent with the objectives of Goal 16 (Estuarine Resources Goal) because they protect the economic values of the estuary while minimizing adverse impacts of the dredging activity. The Application is consistent with other requirements of state and federal law, including the conditions in ORS 541.615 and Section 404 of the Federal Water Pollution Control Act. ORS 541.615, which is now ORS 196.810, requires a permit from the Department of State Lands (“DSL”) to remove any material from the beds or banks of waters of the state. JCEP acknowledges this obligation, and all necessary DSL and Federal Section 404 authorizations will be obtained as a condition precedent to dredging.

For these reasons, the City should find that JCEP’s proposed new and maintenance dredging activities are consistent with CBEMP Policy #5.

Alternatively, the City should find that CBEMP Policy #5 is not applicable to the Application pursuant to state law. LUBA has held, and the Court of Appeals has affirmed, that “[w]hen a goal exception is taken to facilitate proposed development, any comprehensive plan policies that implement the goal for which the exception is taken no longer govern that development.” *Friends of Marion County v. Marion County*, 59 Or LUBA 323, 350-351 (2009), *aff’d* 233 Or App 488, 227 P3d 198 (2010). The Application requests an exception to Goal 16 to facilitate dredging in a natural management unit. As the last sentence of CBEMP Policy #5 clearly states, the purpose of this policy is to implement Goal 16: “This strategy recognizes that Goal #16 limits dredging, fill, and other estuarine degradation in order to protect the integrity of the estuary.” Accordingly, pursuant to the appellate decisions in *Friends of Marion County*, CBEMP Policy #5 is not applicable to the Application.

#4 Resource Capability Consistency and Impact Assessment

Local government concludes that all proposed actions (approved in this Plan) which would potentially alter the estuarine ecosystem have been based upon a full consideration of the impacts of the proposed alteration, except for the following uses and activities:

A. Natural Management Units

- Aquaculture**
- Bridge crossings**
- Log storage**

B. Conservation Management Units

- Aquaculture
- Bulkheading
- Dike maintenance dredging
- High-intensity water-dependent recreation
- Log storage dredging
- Minor navigational improvements requiring dredging or fill
- New or expanded log storage
- Rip-rap
- Water intake or withdrawal and effluent discharge

C. Development Management Units

- Aquaculture
- Bulkheading (except for Aquatic Units #3-DA, 5DA, and 6DA)
- Dredging
- Fill
- Flow lane disposal of dredged material
- In-water structures
- Mining and mineral extraction
- New or expanded log storage
- Water-related and nondependent, nonrelated uses not requiring fill

D. Any other uses and activities which require the resource capability consistency test as a condition within a particular management unit or which could affect the estuary's physical processes or biological resources.

Unless fully addressed during the development and adoption of comprehensive plans, actions which would potentially alter the estuarine ecosystem shall be preceded by a clear presentation of the impacts of the proposed alteration.

For uses and activities requiring the resource capabilities test, a special condition is noted in the applicable management unit uses/activities matrix. A determination of consistency with resource capability and the purposes of the management unit shall be based on the following:

- A. A description of resources identified in the plan inventory;**

B. An evaluation of impacts on those resources by the proposed use (see impact assessment procedure, below); and

C. In a natural management unit, a use or activity is consistent with the resource capabilities of the area when either the impacts of the use on estuarine species, habitats, biological productivity and water quality are not significant or that the resources of the area are able to assimilate the use and activity and their effects and continue to function in a manner to protect significant wildlife habitats, natural biological productivity, and values for scientific research and education.

D. In a conservation management unit, a use or activity is consistent with the resource capabilities of the area when either the impacts of the use on estuarine species, habitats, biological productivity, and water quality are not significant or that the resources of the area are able to assimilate the use and activity and their effects and continue to function in a manner which conserves long-term renewal resources, natural biologic productivity, recreational and aesthetic values, and aquaculture.

An impact assessment need not be lengthy or complex, but it should enable reviewers to gain a clear understanding of the impacts to be expected. It shall include information on:

A. The type and extent of alterations expected;

B. The type of resource(s) affected;

C. The expected extent of impacts of the proposed alteration on water quality and other physical characteristics of the estuary, living resources, recreation and aesthetic use, navigation and other existing and potential uses of the estuary; and

D. The methods which could be employed to avoid or minimize adverse impacts.

This policy is based on the recognition that the need for and cumulative effects of estuarine developments were fully addressed during the preparation of this Plan and that, except as otherwise stated above, no additional findings are required to meet Implementation Requirement #1 of LCDC Goal 16.

RESPONSE: As required by CBEMP Policy #5, “[i]dentification and minimization of impacts shall follow the procedure set forth in Policy #4. JCEP has addressed the provisions of this policy in the DEA memo included in Exhibit 5. This memo is incorporated herein by reference.

Alternatively, the City should find that CBEMP Policy #4 is not applicable to the Application pursuant to state law. LUBA has held, and the Court of Appeals has affirmed, that “[w]hen a goal exception is taken to facilitate proposed development, any comprehensive plan policies that implement the goal for which the exception is taken no longer govern that development.” *Friends of Marion County*, 59 Or LUBA at 350-351, *aff’d* 233 Or App at 488. The Application requests an exception to Goal 16 to facilitate dredging in a natural management unit. As the last sentence of CBEMP Policy #4 clearly states, the purpose of this policy is to implement Goal 16: “This policy is based on the recognition that the need for and cumulative effects of estuarine developments were fully addressed during the preparation of this Plan and that, except as otherwise stated above, no additional findings are required to meet Implementation Requirement #1 of LCDC Goal 16.” Accordingly, pursuant to the appellate decisions in *Friends of Marion County*, CBEMP Policy #4 is not applicable to the Application.

#4a Deferral of (A) Resource Capability Consistency Findings and (B) Resource Impact Assessments

Local government shall defer, until the time of permit application, findings regarding consistency of the uses/activities listed in Policy #4 with the resource capabilities of the particular management unit.

Additionally, the impact assessment requirement for those uses/activities as specified in Policy #4 shall be performed concurrently with resource capability findings above at the time of permit application.

This strategy shall be implemented through an Administrative Conditional Use process that includes local cooperation with the appropriate state agencies such that:

A. Where aquaculture is proposed as a use, local government shall notify the Oregon Department of Fish & Wildlife (ODFW) in writing of the request, with a map of the proposed site;

B. Where log storage dredging is proposed as an activity, local government shall notify the Oregon Department of Environmental Quality (DEQ) in writing of the request, together with a map of the proposed site.

Within twenty (20) days of receipt of the notification, ODFW or DEQ, as appropriate, shall submit in writing to local government a statement as to whether the proposed use/activity will be consistent with the resource capabilities of the management segment, or if determined to be not consistent, whether the proposal can be made consistent through imposition of conditions on the permit. The

appropriate state agency shall also perform the impact assessment required in Policy #4. If no statement is received from the affected state agency by the expiration of the twenty (20) day period, local government shall presume consistency of the proposal with the resource capabilities of the management segment, shall make findings appropriate to the presumption, and shall perform the assessment of impacts required by Policy #4.

For all other uses/activities specified above, local government shall determine appropriate findings whether the proposed use/activity is consistent with the resource capabilities of the management segment and shall perform the assessment of impacts required by Policy #4.

This strategy recognizes:

A. that resource capability consistency findings and impact assessments as required by LCDC Goal #16 can only be made for the uses specified above at the time of permit application, and

B. that the specified state agencies have expertise appropriate to assist local government in making the required finding and assessments.

This strategy is based upon the recognition that the need for and cumulative effects of estuarine developments were fully addressed during development of this Plan and that no additional findings are required to meet Implementation Requirement #1 of Goal #16.

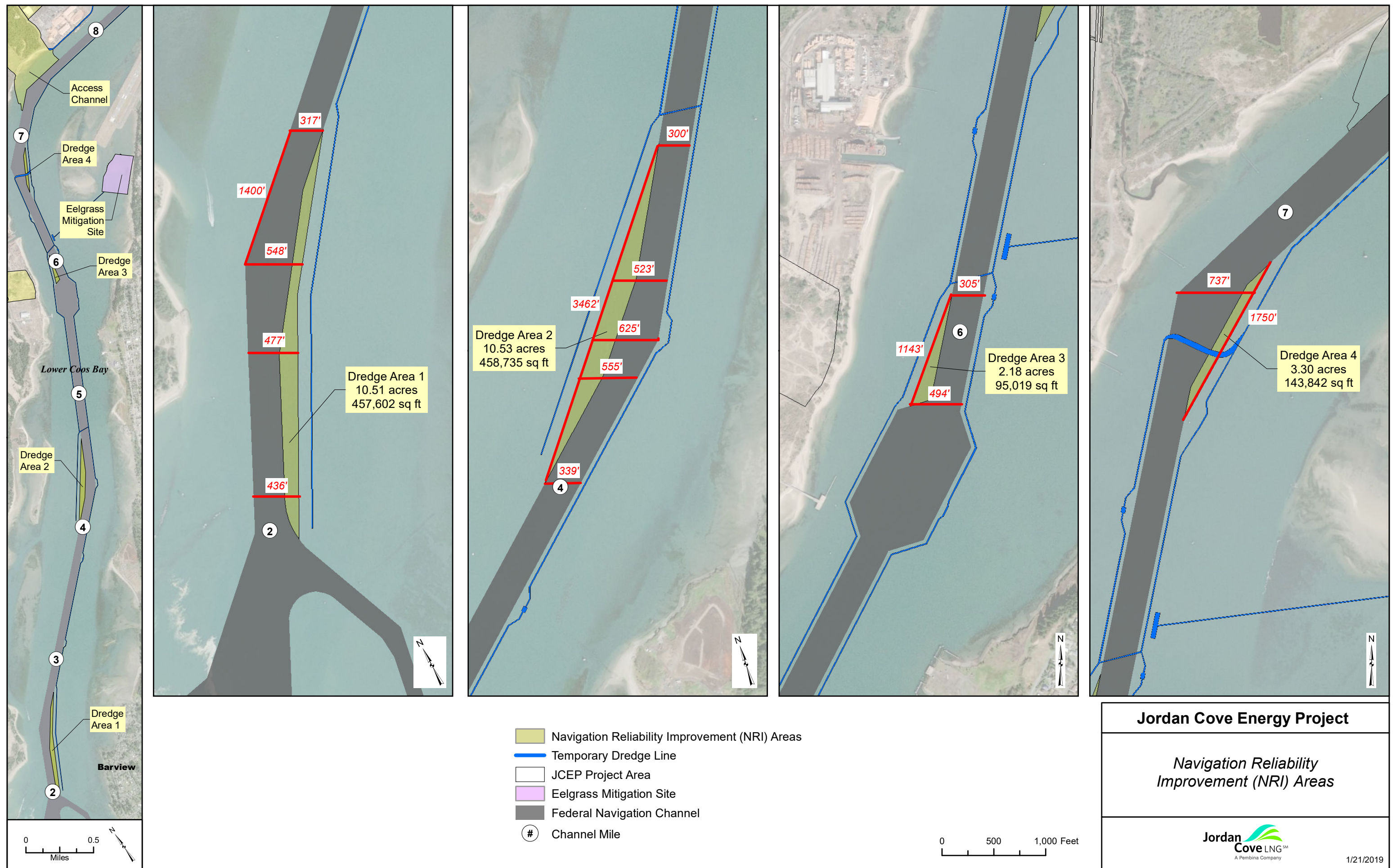
RESPONSE: As noted above, CBEMP Policy #4 requires findings demonstrating the public's need and gain that would warrant any modification or loss to the estuarine ecosystem, based upon a clear presentation of the impacts of the proposed alteration, as implemented in Policy #4a. None of the prerequisites to providing notice to state agencies under Policy #4a are triggered. Therefore, this policy requires the City to perform the impacts assessment consistent with CBEMP Policy #4. The City has completed that assessment above.

For an additional reason, the City should find that CBEMP Policy #4a is not applicable to the Application. LUBA has held, and the Court of Appeals has affirmed, that "[w]hen a goal exception is taken to facilitate proposed development, any comprehensive plan policies that implement the goal for which the exception is taken no longer govern that development." *Friends of Marion County*, 59 Or LUBA at 350-351, *aff'd* 233 Or App at 488. The Application requests an exception to Goal 16 to facilitate dredging in a natural management unit. As the last sentence of CBEMP Policy #4a

clearly states, the purpose of this policy is to implement Goal 16: “This strategy is based upon the recognition that the need for and cumulative effects of estuarine developments were fully addressed during development of this Plan and that no additional findings are required to meet Implementation Requirement #1 of Goal #16.” Accordingly, pursuant to the appellate decisions in *Friends of Marion County*, CBEMP Policy #4a is not applicable to the Application.

IV. Conclusion.

Based upon the above, the City should approve JCEP’s requests: (1) to amend the CBEMP map to change the zoning designation of the NRI Site from 52-NA to DDNC-DA; (2) to amend the CBCP to take a reasons exception to Goal 16 to change the zoning designation of the NRI Site to DDNC-DA; (3) for Estuarine and Coastal Shoreline Uses and Activities Permit For “New And Maintenance Dredging” in the DDNC-DA estuarine zone; and (4) Estuarine and Coastal Shoreline Uses and Activities Permit to allow an accessory temporary dredge transport pipeline in the 52-NA, 53-CA, 54-DA, and 55-CA estuarine zones and an accessory buoy in the 52-NA estuarine zone.



Jordan Cove Energy Project

Navigation Reliability Improvement (NRI) Areas



1/21/2019

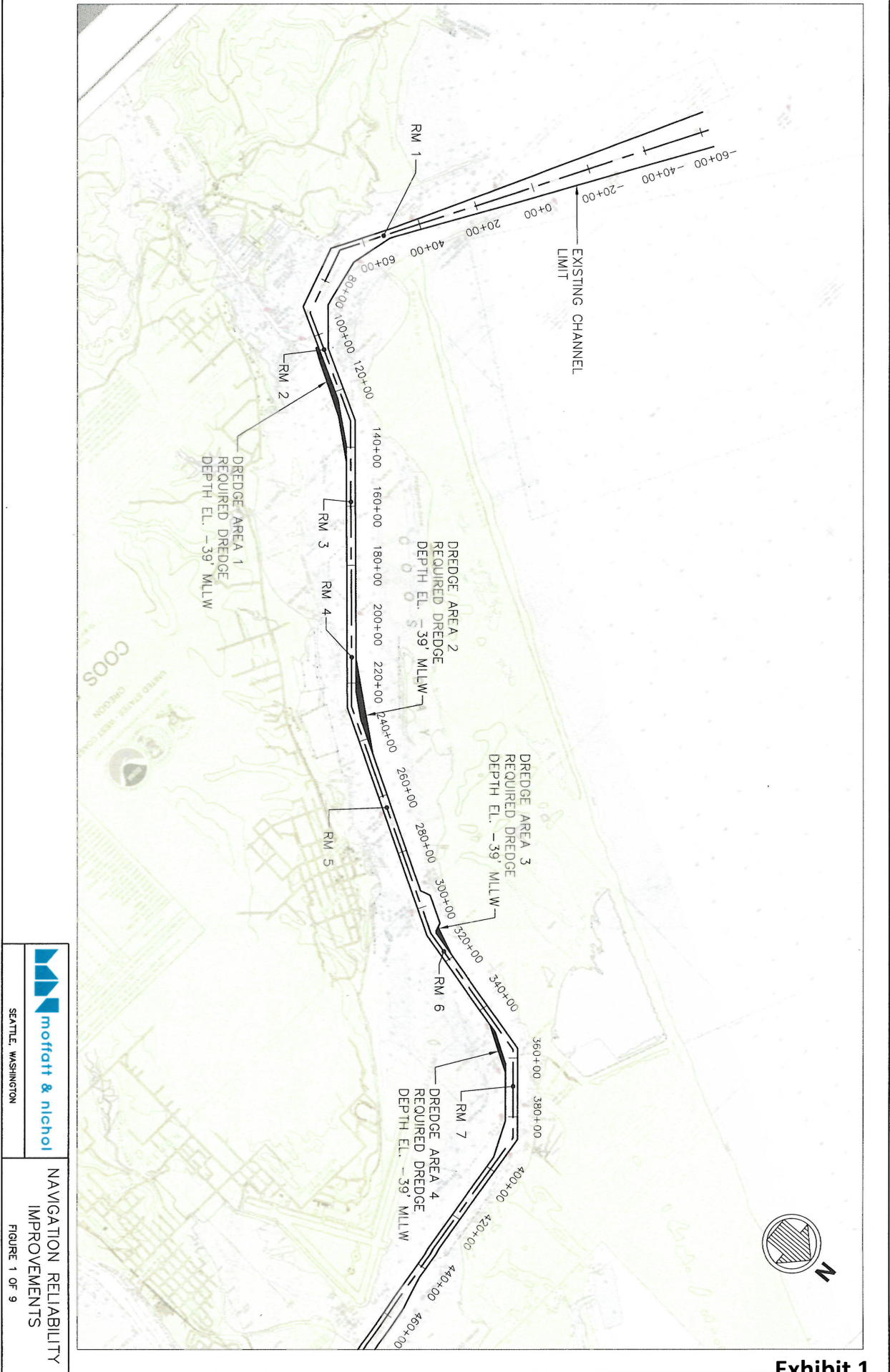


Exhibit 1

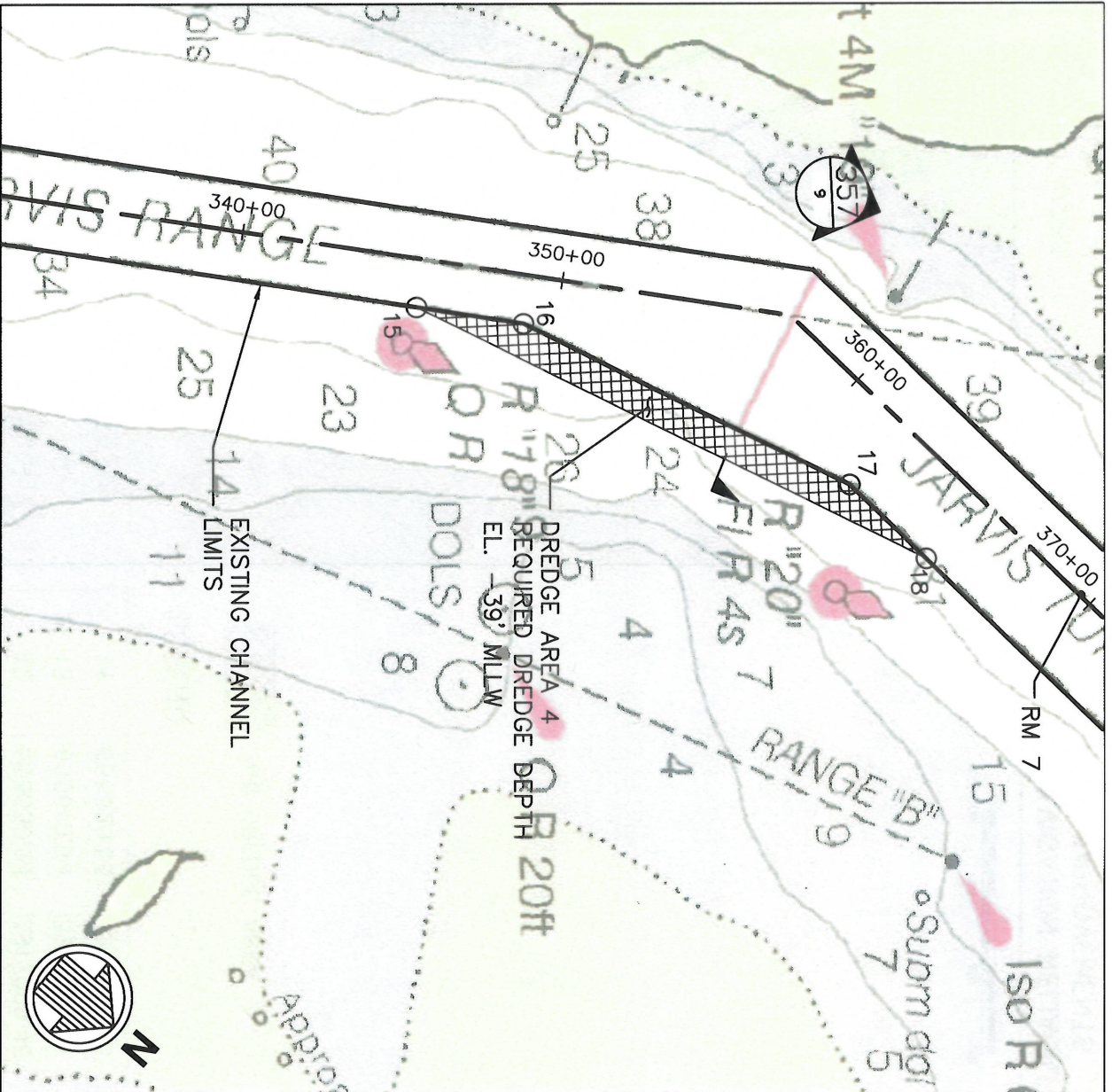
PROPOSED DREDGE COORDINATE
TABLE

POINT #	NORTHING	EASTING
15	659067.23	3918213.13
16	659392.65	3918278.77
17	660377.49	3918823.24
18	660603.73	3919062.58

LEGEND



NRI DREDGE AREA



Approp

ISO R

Summ

RM 7

RANGE "B"

EL. -39' MLW

DREDGE AREA 4

REQUIRED DREDGE DEPTH

EXISTING CHANNEL LIMITS

25

34

38

40

4M

357

360+00

370+00

350+00

340+00

25

23

24

26

16

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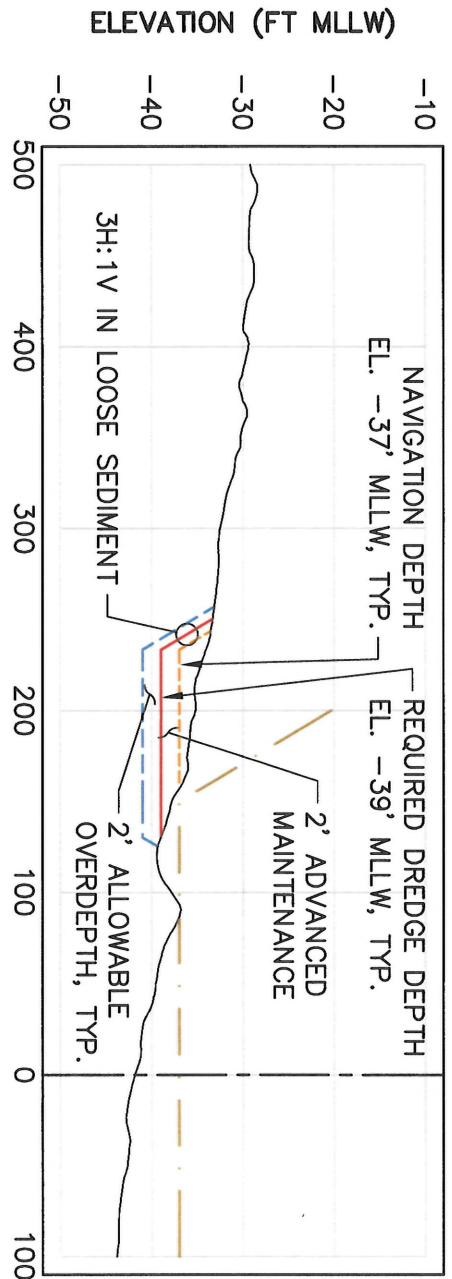
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EXISTING CHANNEL

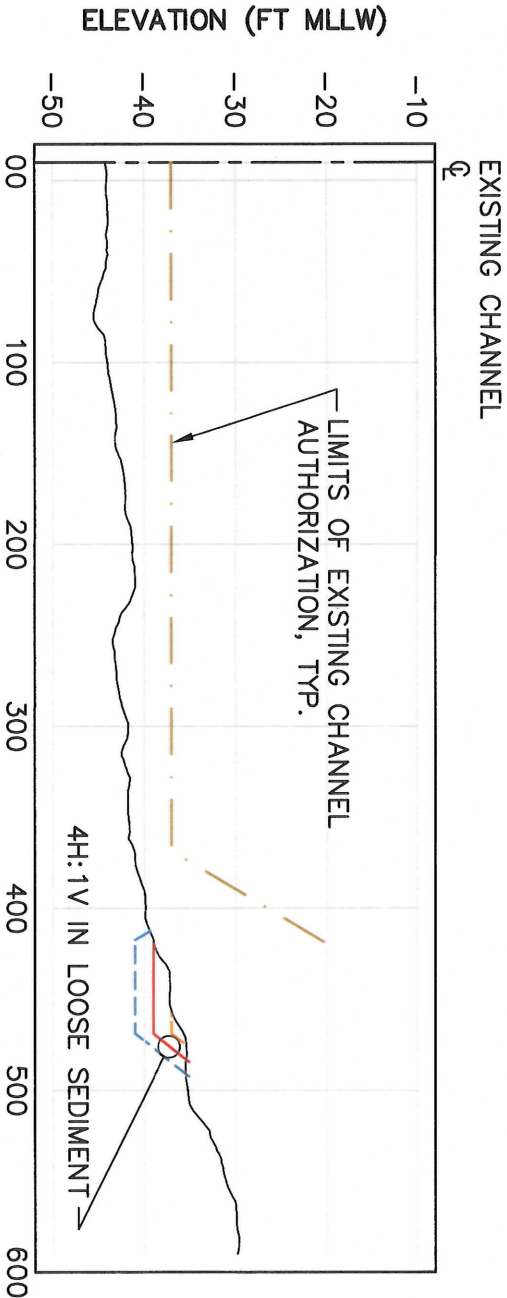


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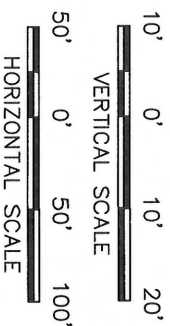
LEGEND

- MUDDLIN
- EXISTING CHANNEL
- NRI REQUIRED DREDGE DEPTH (-39' MLLW)
- NRI NAVIGATION DEPTH (-37' MLLW)
- NRI ALLOWABLE OVERDEPTH

NRI = NAVIGATION RELIABILITY IMPROVEMENTS



357
6
AREA 4 STA 357+00 (RM 6.8)



SEATTLE, WASHINGTON

NAVIGATION RELIABILITY IMPROVEMENTS

FIGURE 9 OF 9

NOTE: SECTION VIEWS FACE UPSTREAM.



CITY OF COOS BAY
Community Development Department

500 Central
Avenue Coos
Bay, OR 97420

541.269.8918
www.coosbay.org

PRE-APPLICATION CONFERENCE NOTES

CASE FILE#: 187-ZON17-006

LOCATION: Coos Bay Estuary, approximately 2,700 feet northwest of the end of the North Bend airport runway

TYPE OF REQUEST: Comprehensive Plan and Text Amendment

CITY STAFF ATTENDING: Eric Day, Tom Dixon, and Debbie Erler

COUNTY STAFF ATTENDING: Jill Rolfe

DATE OF PRE-APPLICATION: February 2, 2017

All Coos Bay code chapters referenced in this report are available on the City's website at <http://www.codepublishing.com/or/coosbay/>.

1. TYPE OF APPLICATION

Comprehensive Plan and Text Amendments (per CBMC 17.215)
Estuarine and Coastal Shoreline Uses and Activities (per CBMC 17.370)

2. PROCESS SUMMARY

The applicant will submit Comprehensive Plan Amendment and Text Amendment applications which require a Type IV review. Per the CBDC the hearing bodies will be the Planning Commission for a recommendation and the City Council for final decision.

Review Process:

- Pre-application conference (completed).
- Application submittal.
- Staff review for completeness (up to 30 days).
- When application is determined to be technically complete, the application is considered to be vested.
- Public notices are mailed/published and hearing dates are set before the Planning Commission and the City Council.
- Staff report is prepared and made available to the applicant at least seven days before the date of the Planning Commission public hearing.
- The Planning Commission will make a recommendation to the City Council for approval

PRE-APPLICATION

187-ZON17-006

or denial based upon the staff recommendation and the criteria found in the CBMC and the City's Comprehensive Plan.

- The City Council will make a final decision after a public hearing
- A Final Order and Ordinance is provided following the City Council decision

3. COMMUNITY DEVELOPMENT CODE AND COMPREHENSIVE PLAN

The applicant must address all standards of the applicable criteria for Plan Amendments and Zone Changes per CBMC 17.215.060. For the City of Coos Bay's review, the review is only for text and plan amendments but no zone change.

The applicant must address all application submittal requirements for the Estuarine and Coastal Shoreline Uses and Activities per CBMC 17.370.030.

The applicant must also describe proposed changes to estuary segments including both existing and proposed designations.

The applicant must address elements of the Coos Bay Comprehensive Plan pertaining to this project and address relevant State of Oregon Land Use Goals including Goal 6 – Air, Water and Land Resources Quality; Goal 9 – Economic Development; Goal 12 – Transportation; and Goal 16 Estuarine Resources.

4. ADDITIONAL REVIEW MATERIAL

The applicant should include supporting information including existing graphic portrayals of the channel section being considered, dredging cross sections of both width and depth profiles for areas of expansion or alteration, the quality and quantity of materials to be excavated, and final expected bathymetric contours for area of impact. In addition, information should be shared regarding potential impacts to the marine environment and how these impacts will be mitigated.

5. DOCUMENTATION REQUIRED FOR A COMPLETE APPLICATION

The following items are required to be submitted in only in a single form, along with a digital copy, for the main application:

- Application form signed by the owner and applicant, if applicable. In place of a signed application form the property owner may submit as a part of the application that they give the applicant permission to apply for the required land use applications in their place. This permission will not preclude the property owner from withdrawing consent at any time.
- Proof of ownership (Department of State Lands).

In addition, the following items are required to be submitted in ten collated sets in addition to a digital a copy:

- Application maps and narrative information as stipulated per CBMC 17.215.040 and 17.370.030,
- A narrative of the applicable State of Oregon Land Use Goals and Comprehensive Plan Goals and Policies, and
- Additional information that will provide reviewers and decision makers sufficient basis to weigh the criteria and render a decision.

5. APPLICATION FEES

Per the City fee resolution, the City will be collecting a \$70.00/hr. fee for the review of this project as it

PRE-APPLICATION

187-ZON17-006

is believed that City staff time will far outweigh the outlined fee(s) in the resolution for this type of review. The City will collect a \$7,000.00 fee up front at time of application submittal. Should any additional fees be required they will be requested at that time. Should the City not exhaust the initial fee the unused portion will be returned to the applicant after the review is finalized.

The City may retain an outside land use consultant/attorney to aid in the review of this application. Should the City elect this approach the consultants fees will be passed along to the applicant for payment.

6. TIME FRAME FOR REVIEW PROCESS

Per State law, staff has 30 days to review the application submittal for technical completeness. If incomplete, the applicant will have 180 days from the date of the incomplete letter to submit additional information. Once deemed complete the application review shall not exceed 120 days for a final decision, including appeals to the City Council. Appeals to LUBA fall outside the 120 day review process.

NOTICE TO APPLICANTS:

The standards noted in this checklist are those which staff believes may be applicable to your proposal. Additional standards may also be determined applicable at the time of a development submittal. The burden is upon the applicant to review all applicable City documents and address all the relevant standards. The applicant should verify the fees prior to submitting application.



July 26, 2018

Via Electronic Mail

TO: Department of State Lands
FROM: Roseburg Forest Products Co.
RE: **Letter of Support for the JCEP Navigation Reliability Improvements**

To whom it may concern,

Roseburg Forest Products Co. ("Roseburg") wishes to express its support for the excavation and widening of four submerged areas adjacent to the federally authorized Coos Bay Navigation Channel ("Channel"). These areas are collectively referred to by the Jordan Cove Energy Project ("JCEP") as the Navigation Reliability Improvements ("NRIs"). Roseburg supports this proposal because the NRIs will provide navigation enhancements that will increase the margin of safety available not only for vessels serving the proposed JCEP LNG Terminal, but for vessels serving Roseburg's terminal and other marine terminal facilities in Coos Bay.

The proposed NRIs will increase the operational window for safe vessel transit by approximately 20% according to analysis conducted by JCEP. The improvements are designed to reduce entry and departure delays which will allow for more efficient vessel transits through the Channel for the size of vessels calling at the Port of Coos Bay today as well as for vessels calling in the future. Minimizing delay is a pressing concern because Roseburg has identified potential new wood chip customers in Asia which will require using bulk carriers that are slightly larger than the ships typically calling today.

Upon completion of the proposed NRIs, the Channel will operate more efficiently and with an increased operational margin of safety. Without the proposed improvements, shipping commerce will be delayed or otherwise compromised. The potential for growth in shipping commerce in Coos Bay via larger ships will also be in jeopardy. Implementing the proposed improvements will help to ensure safe and efficient navigation for vessels calling at Roseburg's terminal and all other vessels transiting the Coos Bay Channel. The proposed NRIs are needed to ensure the current and future viability of maritime commerce in Coos Bay. Roseburg respectfully urges that these navigation improvements be granted favorable consideration.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Richard D. D.' with a stylized flourish at the end.

Roseburg Forest Products Co.

Coos Bay Pilots Association

*686 N. Front Street
Coos Bay, Oregon 97420
Tel. 541-267-6555*

July 25, 2018

RE: Letter of Support from the Coos Bay Pilots Association for the Jordan Cove Energy Project's Navigation Reliability Improvements

To whom it may concern,

The Jordan Cove Energy Project ("JCEP") proposes to excavate and widen four submerged areas adjacent to the federally authorized Coos Bay Navigation Channel ("Channel"), collectively known as the Navigation Reliability Improvements (NRIs). The Coos Bay Pilots Association ("Pilots") supports this proposal because it provides navigation enhancements necessary to increase the margin of safety available to the Pilots and the vessel Master, in turn improving the efficiency and navigability of the Channel.

The Pilots, regulated and approved by the State of Oregon, are responsible for supporting deep sea vessel Masters in navigating their vessels into and out of the Channel. The Pilots serve a vital function for maritime commerce in Coos Bay by safely and efficiently guiding vessels through the Channel (known as pilotage) using visual aids, radar, and other means. The Channel provides the only safe vessel access to marine terminals located within Coos Bay. Pilots are specifically trained to navigate the Channel, possessing detailed local knowledge of its unique bathymetric conditions and visual references. Pilotage is mandatory in Oregon.

Marine terminal facilities in Coos Bay are grouped into two categories: 1) the lower bay terminals from the entrance up to River Mile ("RM") 9.0 and 2) the upper bay terminals upstream of RM 9.0. The railroad swing bridge at RM 9.0 limits the size of vessels that can pass through the bridge opening. Four terminals are currently in operation in the lower bay. The proposed JCEP LNG terminal site is also in the lower bay. Ten terminal and dock facilities are located in the upper bay. Currently, three of the terminals in the upper bay and one terminal in the lower bay can handle deep draft vessels.

The Channel was initially authorized in 1899 and has undergone ten subsequent modifications. Most recently, the Channel was deepened from -35 feet to -37 feet in 1997 to allow for safe navigation and transit by the size of ships prevalent at that time. Over the past 20 years, the dimensions and tonnage of ships serving terminals in Coos Bay have increased. Specifically, the size of vessels calling on Coos Bay terminals has increased from an average of 45,422 metric tonnes to an average of 52,894 metric tonnes with a projected near-term vessel size of up to 70,400 metric tonnes. Safety margin considerations due to environmental conditions, including wind, fog, tides, and currents, coupled with increasing ship size, have caused the Pilots to impose restrictions on when vessels may safely transit the Channel. These restrictions in turn cause significant delays and increase pressure on the Pilots. These types of delays decrease the efficiency and competitiveness

of maritime commerce on a global scale, and jeopardize the continued success of maritime commerce in Coos Bay.

The Pilots believe the proposed NRIs are essential for achieving the required number of LNG vessel transits needed to lift the JCEP design annual LNG production volume. JCEP has informed the Pilots that excessive delays in LNG Carrier transits to and from the LNG terminal could result in a shore storage tank topping situation, requiring the project to curtail production of LNG. The Pilots also believe that, in addition to the JCEP LNG terminal, the NRIs will directly benefit other marine terminals in Coos Bay that currently handle deep draft vessels. Further, the NRIs have the potential to benefit any future marine terminal that may be constructed in the Port.

The Pilots estimate that completion of the proposed NRIs will increase the operational window for safe vessel transit by approximately 20%. Minimizing delay is a pressing concern because companies that utilize the port of Coos Bay have identified potential new customers in Asia that desire to export cargo using bulk carriers that are slightly larger than the ships typically calling today. Various marine terminal businesses, within Coos Bay, require enhanced assurances that terminals will be able to efficiently accommodate larger dimension bulk carriers in the near term.

The proposed NRIs are designed to reduce entry and departure delays and to allow for more efficient vessel transits through the Channel for the size of vessels entering the Port today. Although log export vessels serving the upper bay are smaller, the proposed enhancements also benefit these vessels by broadening the tidal and environmental windows for transiting the Channel, providing an enhanced margin of safety and improved efficiency in the loaded vessel departure schedule. The proposed actions are needed to ensure the current and future viability of maritime commerce in Coos Bay. The NRIs will allow companies to engage in emerging opportunities to export products with today's larger vessels, including bulk carriers of up to 223 meters (732 feet) in length and 40 meters (131 feet) in beam with a cargo carrying capacity up to 70,400 deadweight tonnes.

Upon completion of the proposed NRIs, the Channel will operate more efficiently and with an increased operational margin for vessels calling today as well as for JCEP LNG carriers and other vessels calling in the future. Without the proposed improvements, shipping commerce will continue to operate with the same narrow weather and tidal windows. Implementing the proposed improvements will help to ensure that the Pilots can continue to serve their role of providing safe and efficient navigation for all vessels transiting the Coos Bay Channel.

Respectfully,

A handwritten signature in black ink, appearing to read "George Wales", written over a horizontal line.

Captain George Wales
Coos Bay Pilots Association



October 30, 2018

via email

Mr. Robert Lobdell
Aquatic Resource Coordinator
Oregon Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279

Re: Jordan Cove Energy - Navigation Reliability Improvements Project

Dear Mr. Lobdell:

On behalf of the Oregon International Port of Coos Bay ("OIPCB"), I would like to take the opportunity to offer our support for the proposal by the Jordan Cove Energy Project ("JCEP") to deepen and widen four submerged areas adjacent to the federally authorized Coos Bay Navigation Channel ("Channel").

We understand that JCEP is seeking local, state and federal authorizations to undertake this work, which is collectively referred to as the Navigation Reliability Improvements ("NRI"), including Removal-Fill authorization from the Department of State Lands. Specifically, the improvements are designed to reduce entry and departure delays to facilitate more efficient vessel transits through the Channel for the size of vessels calling at the Port of Coos Bay today as well as for likely larger vessels served by the Port in the future. Upon completion of the proposed NRIs, the Channel will operate more efficiently and with an increased operational margin of safety, which is necessary to ensure the current and future viability of maritime commerce in Coos Bay. The OIPCB supports these proposed Channel improvements because the navigation enhancements will increase the margin of safety available not only for vessels serving the proposed JCEP LNG Terminal, but, of equal importance to the Port, for vessels serving existing and future marine terminal facilities in Coos Bay.

For these reasons, the OIPCB respectfully urges that these navigation improvements be granted favorable consideration.

Sincerely,

Mr. John Burns
Chief Executive Officer
Oregon International Port of Coos Bay



16611
May 10, 2018

Director of Gas Environment and Engineering, PJ 11
Attn: Mr. Rich McGuire
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Dear Mr. McGuire:

This Letter of Recommendation (LOR) is issued pursuant to 33 Code of Federal Regulations (CFR) 127.009 in response to the Letter of Intent submitted by Jordan Cove Energy Project, L.P. (Jordan Cove) on January 9, 2017. Jordan Cove proposes to construct and operate the Jordan Cove LNG facility in Coos Bay, Oregon from which Liquefied Natural Gas (LNG) is proposed to be transferred in bulk to a vessel for export. This LOR conveys the Coast Guard's recommendation on the suitability of the Coos Bay Channel for LNG marine traffic as it relates to safety and security. In addition to meeting the requirements of 33 CFR 127.009, this LOR fulfills the Coast Guard's commitment for providing information to your agency under the Interagency Agreement signed in February 2004.

After reviewing the information in the applicant's Letter of Intent (LOI) and Waterway Suitability Assessment (WSA) with subsequent annual updates and completing an evaluation of the waterway in consultation with a variety of state and local port stakeholders, I recommend that the Coos Bay Channel be considered suitable for LNG marine traffic. My recommendation is based on review of the factors listed in 33 CFR 127.007 and 33 CFR 127.009. The reasons supporting my recommendation are outlined below.

On November 1, 2017, I completed a review of the WSA for the Jordan Cove Energy Project, submitted to the Coast Guard by KSEAS Consulting on behalf of Jordan Cove in February 2007. This review was conducted following the guidance provided in U.S. Coast Guard Navigation and Vessel Inspection Circular (NVIC) 01-2011, dated January 24, 2011. In conducting this review and analysis, I focused on the navigation safety and maritime security aspects of LNG vessel transits along the affected waterway. My analysis included an assessment of the risks posed by these transits and validation of the risk management measures proposed by the applicant in the WSA. During the review, I consulted a variety of stakeholders including the Area Maritime Security Committees, Harbor Safety Committees, State representatives, Pilot Organizations, and local emergency responders.

Based upon a comprehensive review of Jordan Cove's WSA, and after consultation with State and Local port stakeholders, I recommend that the Coos Bay Channel be considered suitable for accommodating the type and frequency of LNG marine traffic associated with this project.

The attached LOR Analysis contains a detailed summary of the WSA review process that has guided this recommendation. It documents the assumptions made during the analysis of Jordan Cove's WSA. It discusses details of potential vulnerabilities and operational safety and security measures that were analyzed during the review. The portion of the LOR Analysis which

addresses matters that affect maritime security is marked as Sensitive Security Information and is withheld from distribution.¹ The LOR Analysis sets forth the navigational safety and maritime security resource gaps that currently exist in, on, and adjacent to the waterway, including the marine transfer area of the proposed facility, and which, to the extent allowable under FERC's existing legal authority, may be addressed in its Commission Order if one is issued. To the extent implementation of specific mitigation measures fall outside the scope of FERC's legal authority, the applicant is expected to examine the feasibility of implementing such mitigation measures, in consultation with the Coast Guard and State and Local agencies as applicable.

This recommendation is provided to assist in the Commission's determination of whether the proposed facility should be authorized. This Letter of Recommendation is not an enforceable order, permit, or authorization that allows any party, including the applicant, to operate a facility or a vessel on the affected waterway. Similarly, it does not impose any legally enforceable obligations on any party to undertake any future action be it on the waterway or at the proposed facility. It does not authorize, nor in any way restrict, the possible future transit of properly certificated vessels on the Coos Bay Channel. As with all issues related to waterway safety and security, I will assess each vessel transit on a case by case basis to identify what, if any, safety and security measures are necessary to safeguard the public health and welfare, critical marine infrastructure and key resources, the port, the marine environment, and vessels. In the event the facility begins operation and LNG vessel transits commence, if matters arise concerning the safety or security of any aspect of the proposed operation, a Captain of the Port Order could be issued pursuant to my authority under the Ports and Waterways Safety Act of 1972, as amended by the Port and Tanker Safety Act of 1978, 33 U.S.C. § 1221 – 1232, among other authorities, to address those matters.

Please note that Enclosures (4) is Sensitive Security Information (SSI) and shall be disseminated, handled and safeguarded in accordance with 49 CFR Part 1520, "Protection of Sensitive Security Information."

If you have any questions on this recommendation, my point of contact is Lieutenant Commander Laura Springer. She can be reached at the address listed above, by phone at (503) 209-2468, or by email at Laura.M.Springer@uscg.mil.

Sincerely,

A handwritten signature in blue ink, appearing to read "W. R. Timmons", with a long horizontal stroke extending to the right.

W. R. TIMMONS,
Captain, U. S. Coast Guard
Captain of the Port, Sector Columbia River

- Enclosure (1) LOR Analysis
(2) LOR issued by Sector Portland on April 24, 2009
(3) U.S.C.G.'s Waterway Suitability Report for the Jordan Cove Energy Project
(4) LOR Analysis (SSI Portion)

¹ Documents containing SSI may be made available upon certification that the requestor has a need to know and appropriate document handling and non-disclosure protocols have been established.

Copy: Commander, Coast Guard District Thirteen (dp)
Commander, Pacific Area (PAC-54)
Commandant (CG-OES), (CG-ODO), (CG-FAC), (CG-741), (CG-CVC), (CG-ENG),
(LNGNCOE)
Marine Safety Center (CG MSC)
Jordan Cove

Jordan Cove LNG

ANALYSIS SUPPORTING THE LETTER OF RECOMMENDATION ISSUED BY
COTP SECTOR COLUMBIA RIVER ON MAY 10, 2018

Introduction

1. This analysis is a supplement to my Letter of Recommendation (LOR) dated May 10, 2018, that conveys my recommendation on the suitability of the Coos Bay Ship Channel for liquefied natural gas (LNG) marine traffic associated with the Jordan Cove LNG (JCLNG) export terminal project Coos Bay, Oregon. It documents the processes followed in analyzing JCLNG's Waterway Suitability Assessment (WSA) and the suitability of the waterway for LNG marine traffic.
2. For the purposes of this analysis, the following assumptions were made:
 - a. The applicant is fully capable of, and would fully implement, any and all risk management measures identified in their WSA.
 - b. The conditions of the port identified in the WSA fully and accurately describe the actual conditions of the port at the time of the WSA submission.
 - c. The conditions of the port have not changed substantially during the analysis process.
 - d. The applicant will fully meet all regulatory requirements including the development and submission of a Facility Security Plan, Emergency Manual, and Operations Manual.
3. The Port of Coos Bay is a deepwater port located in Coos Bay, Oregon on the Pacific Coast of the United States. The Port of Coos Bay offers easy access to Asian markets and facilitates the international movement of goods between the United States and Asia. The Port of Coos Bay is managed under the jurisdiction of the Portland Navigation District and has an authorized channel depth of 37 feet. The channel width is 300 nominal feet. The principal exports are logs, wood chips, lumber, and plywood. The Port of Coos Bay is currently conducting a feasibility study to examine widening and deepening its ship channel.
4. The Port of Coos Bay is approximately 173 nautical miles south of the Columbia River and 367 miles north of the entrance to San Francisco Bay. The Port has seen declining arrivals and is not currently heavily trafficked.
5. Inbound and outbound traffic density in the Port of Coos Bay is currently minimal. In the summer months and during fishing season there are a number of commercial fishing vessels working in the region. The maximum anticipated LNG Carrier port calls per year is expected to be around 120. These projections are based on a maximum nominal LNG output of 7.8 MTPA. Other traffic transiting through the Port of Coos Bay include fishing vessels, recreational vessels, and towing vessels.
6. The Terminal will be sited at the north end of the Coos Bay Channel near Jordan Cove. All Terminal facilities will be located within an approximately 200-acre parcel of land. The approximate locations of the coordinates of the facility are: 43 degrees-25.5' North and 124 degrees 15.7' West.

7. The U.S. Coast Guard regulates the port under the Maritime Transportation Security Act (MTSA), Security and Accountability for Every Port Act (SAFE Port Act), Ports and Waterways Safety Act (PWSA) and other laws applicable to maritime safety and security. U.S. Coast Guard regulated facilities in the area include chip terminals and fuel transfer facilities.
8. Ships entering or departing Coos Bay require a pilot. The Coos Bay Pilots are state licensed Oregon pilots responsible for ensuring the safe transit of vessels transiting through the Port of Coos Bay. They handle approximately 50 vessel transits through the Port of Coos Bay each year.
9. In order to support operations associated with the facility, the applicant will provide additional towing vessels as outlined in their WSA. All tractor tugs must be at least 80 Ton Astern Bollard or larger and equipped with Class 1 Fire Fighting equipment.
10. The applicant established an emergency response planning group in preparation for facility construction and operation in 2006. This group is tasked with education and preparedness concerning this facility. It must be noted that there are schools located in the zones of concern.

Impact to Coast Guard Operations

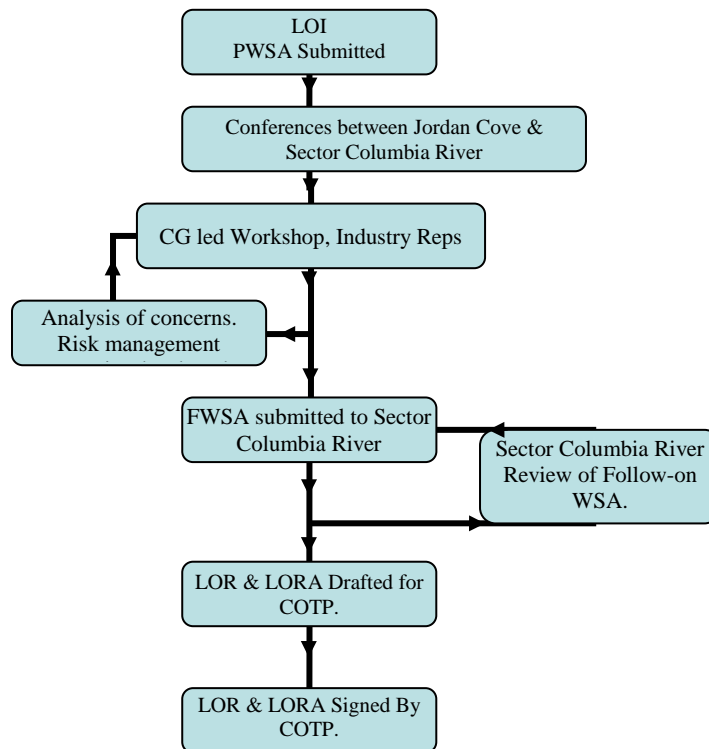
1. The U.S. Coast Guard is responsible for screening LNG Carriers transiting from foreign ports prior to arrival and will screen all vessels in accordance with existing policies and procedures. The vessels calling on the facility will be foreign flagged and the flag state is yet to be determined. I do not intend to require additional government conducted safety inspections beyond those which already apply to deep draft LNG vessels.
2. Facility and vessel inspection activities will be supported by Marine Safety Unit Portland personnel.
3. Limited access areas (LAA) associated with the project have yet to be established. Sector Columbia River will use risk based decision making and work with existing policy to determine the appropriate LAAs. The proposed LAA in enclosure (3) was not put out for regulatory review and is not in effect.
4. LNG is not considered oil and all vessels calling on the facility will be required to comply with non-tank vessel response plan requirements. The applicant is highly encouraged to work with the Area Committees established under the National Contingency Plan to address issues associated with response in Coos Bay.
5. The Facility will be in the Sector Columbia River Captain of the Port Zone and falls under the purview of the Federal Maritime Security Coordinator who is also the Sector Columbia River Captain of the Port. Specific issues related to this are outlined in Enclosure (4).



Figure 1. Jordan Cove Conceptual rendering of facility

Decision Making Process

1. The following factors regarding the condition of the waterway, vessel traffic, and facilities upon the waterway, were taken into consideration during the LOR process. The processes used are detailed in this section.
2. To ensure all regulatory processes were met, Sector Columbia River took a systematic approach in the WSA validation process. To streamline and ensure transparency, Sector Columbia River worked with Jordan Cove, the Consulting Group KSEAS, and port partners through a series of ad hoc meetings and a one day workshop.



**Figure 2 - LNG LOR Process
(Sector Columbia River)**

3. NVIC 01-2011 provides guidance on the review and validation of a WSA. Applying NVIC 01-2011's procedural framework, my staff held several in-house reviews of the WSA, and facilitated discussions during a workshop held in Coos Bay, OR on October 16, 2017. The workshop included a wide range of participants, including representatives from; the USCG; Coos Bay Pilots Association; Port Authorities, the State of Oregon and law enforcement agencies.

Members	Position/Role
LCDR Laura Springer	Waterways Management Division Chief, MSU Portland
LCDR Ben Crowell	Surface Operations, Sector North Bend
LCDR Andrew Madjeska	Incident Management Division Chief, Sector Columbia River
LCDR Xochitl Castaneda	District Thirteen Prevention
Ms. Deanna Henry	Oregon Department of Energy
George Wales	Coos Bay Pilots
Richard Dybevik	Roseburg Forest Products
Doug Strain	Coos Bay Sheriff
Jim Brown	North Bend Fire Department
Doug Eberlein	Coos Bay Response Co-op (CBRC)
LT Ethan Lewallen	USCG LNG NCOE

**Table 1 – Jordan Cove WSA Team 1 Nov 2017
(Port of Coos Bay)**

4. The participants of this “ad-hoc” workshop, recommended by NVIC 01-2011, utilized their expertise on the physical characteristics and traffic patterns of the waterway, as well as their respective specialty knowledge of the marine environment, LNG, safety, security, and facility operations, to analyze the suitability of the waterway to support LNG marine traffic associated with JCLNG.
5. Participants considered the changes in the area’s safety and security dynamics which may result from the introduction of LNG ship traffic associated with the JCLNG Project. Jordan Cove used the American National Standards Institute (ANSI)/American Petroleum Institute (API) Standard 780 Security Risk Assessment (SRA) Methodology, as the basic approach for assessing risk. The standard was published in June of 2013 as a U. S. standard for security risk assessments on petroleum and petrochemical facilities. The standard is a tool used to evaluate all security risks associated with petroleum and petrochemical infrastructure and operations, and assists owners and operators through the process of conducting thorough and consistent SRAs. For security purposes, participants considered potential threats and consequences of intentional act of aggression to the facility and developed security measures to mitigate the risks.
 - a. Please see Enclosure (4) if you have a need to know concerning the results of this
6. During the above mentioned workshop held in Coos Bay, OR on October 16, 2017, the ad-hoc working group also evaluated safety factors including the potential impacts of groundings, collisions, and allisions and thoroughly examined the simulator data presented in the WSA.
7. Each of the recommended risk management measures from enclosure (7) of NVIC 01-2011 were considered. In the WSA workshop, additional risks and recommendations were discussed related to a Cascadia Subduction Zone Earthquake and associated implications for the facility and region if a laden vessel was tied up at the layberth.
8. The ad-hoc working group considered each scenario along each transit segment and evaluated the causes of accidental or intentional events. The workshop analyzed the contributing factors for each scenario and their likelihood of occurrence given the adequacy of safety and security layers.
9. Sector Columbia River followed the checklist found in NVIC 01-2011 during the review. Through this review, Sector Columbia River clarified certain points in the WSA to ensure that the document contained accurate information and that references were applicable. With the 2017 update to the WSA, Jordan Cove has satisfied the requirements of the LOR process.
10. Based on my review of the WSA completed on November 1, 2017, and input from state and local port stakeholders, and taking into account previously reviewed expansion projects, I recommend to the Federal Energy Regulatory Commission

that the waterway in its current state be considered suitable for the LNG marine traffic associated with the proposed project.

11. This recommendation is contingent upon the applicant completing all actions outlined in the Waterways Suitability Assessment as submitted, and actions associated with subsequent annual updates, and completing all actions outlined in the most current WSA and actions under the control of the applicant from the July 1, 2008, Waterway Suitability Report.

Waterway Conditions Adjacent to the Facility

1. **Depth of Water.** The channel is currently maintained at a 37' depth.
2. **Tidal Range.** The tides of Coos Bay are of the mixed semi-diurnal type with paired highs and lows of unequal duration and amplitude. The tidal range increases upstream to the City of Coos Bay and the time difference between peak tides at the entrance and City of Coos Bay is about 40-90 minutes, depending on the location. The head of the tide is located at River Mile 27 on both the Millicoma and South Fork Coos Rivers. The tidal range is 7.5 feet near the open sea channel and 6.7 feet at the entrance to Charleston Harbor.

Table 2 Tidal Datums, Coos Bay, OR NOAA Tide Stations 9432895, 9432879, and 9432780

Tide Level	Abbreviation	Tide Level (ft) North Bend	Tide Level (ft) Empire	Tide Level (ft) Charleston
Tide Station ID #		9432895	9432879	9432780
Latitude		43° 24.6'N	43° 22.6'N	43° 20.7'N
Longitude		124° 13.1'W	124° 17.8'W	124° 19.3'W
Extreme High Water	EHW	-	-	+10.5
Mean Higher High Water	MHHW	+8.4	+7.7	+7.6
Mean High Water	MHW	+7.8	+7.1	+7.0
Mean Sea Level	MSL	+4.7	+4.2	+4.1
Mean Low Water	MLW	+1.3	+1.3	+1.3
Mean Lower Low Water	MLLW	+0.0	+0.0	+0.0
Extreme Low Water	ELW	-	-	-3.0

3. **Protection from High Seas.** The entrance to Coos Bay is similar to most harbors along the Pacific Coastline of Northern California, Oregon, and Washington. Strong winds are often experienced at North Bend on Coos Bay during the months of June, July, and August. These winds blow at 17 knots or greater 15-20 percent of the time and at 28 knots or greater 1 to 2 percent of the time. The harbor consists of a river estuary at the mouth of the Coos River. Sand and silt

from the river are carried out to the sea from this entrance. As a result of this material meeting the predominantly westerly seas and swells of the Pacific, a sandy ridge bar is formed at the mouth. This sand ridge causes the channel to be known as “a Bar Channel”. As such, a breaking bar does occur in this port.

4. **Natural Hazards.** The navigational hazards in the vicinity of the project site are rock jetties on either side of the channel entrance extending into the Pacific Ocean, and a submerged jetty which extends 50 yards off the east shore of Coos Bay. Discussions and simulations with the Coos Bay Pilots Association have shown that these hazards will not interfere with normal navigation and mooring operations and the applicant has developed transit mitigations to address this issue such as not bringing vessels in or leaving them at the lay berth during conditions that are not conducive to safe navigation i.e. restricted visibility, severe weather and and/or low tides.
5. **Fishing Vessels.** Heavy concentrations of fishing gear may be expected between December 1 and August 15, from shore to about 30 fathoms.
6. **Underwater Pipelines and Cables.** Based on current pipeline charts that are available, there are three cables which are submerged approximately 20 feet running across/underneath the channel in the vicinity of the town of Empire which is on the LNG Carrier transit route.
7. **Maximum Vessel Size by Dock.** The primary dock can accommodate a vessel with a maximum length of 300 meters, 52 meters in breadth, and a draft which can be accommodated by the existing channel. Although the facility dock is able to accommodate vessels drafting up to 12m (39ft), current channel draft is 11m (37ft) with future plans to dredge the channel to accommodate larger deep draft vessels. Jordan Cove Energy Project and the local pilots must ensure transiting LNG vessels are able to maintain 10% under keel clearance as required by JCEP's LNG Transit Management Plan.
 - a. The dock must be able to accommodate all vessels calling on the facility.
 - b. It must be equipped with adequate numbers of mooring hooks, fendering, and mooring dolphins.
 - c. The mooring arrangement must also be able to accommodate safe working loads.
 - d. In coordination with appropriate stakeholders, JCLNG must develop and implement vessel mooring/unmooring procedures to ensure safe and environmentally protective operations for LNG Carriers arriving and departing the JCLNG facility.
8. **Vessel Routing.** Included in the WSA, was a plan to divide the LNG Carrier transit route into five (5) inbound, one (1) loading at berth, and five (5) outbound segments. The total inbound transit from the Sea Buoy (pilot boarding area) to the terminal berth is approximately eight (8) miles and will take between 1.5 and 2.0

hours to berth, pilots will be transiting at around 4.5 knots. The route has been divided into segments in order to manage vessel traffic and increase the safety of LNG carrier transits. This was done in conjunction with the Coos Bay Pilots Association.

The route is reversed for outbound LNG Carrier transits with the exception of the turning/maneuvering basin which is bypassed on the outbound transit where the LNG Carrier is moved directly into the Coos Bay Ship Channel. The route and segments are shown in Figure 3.

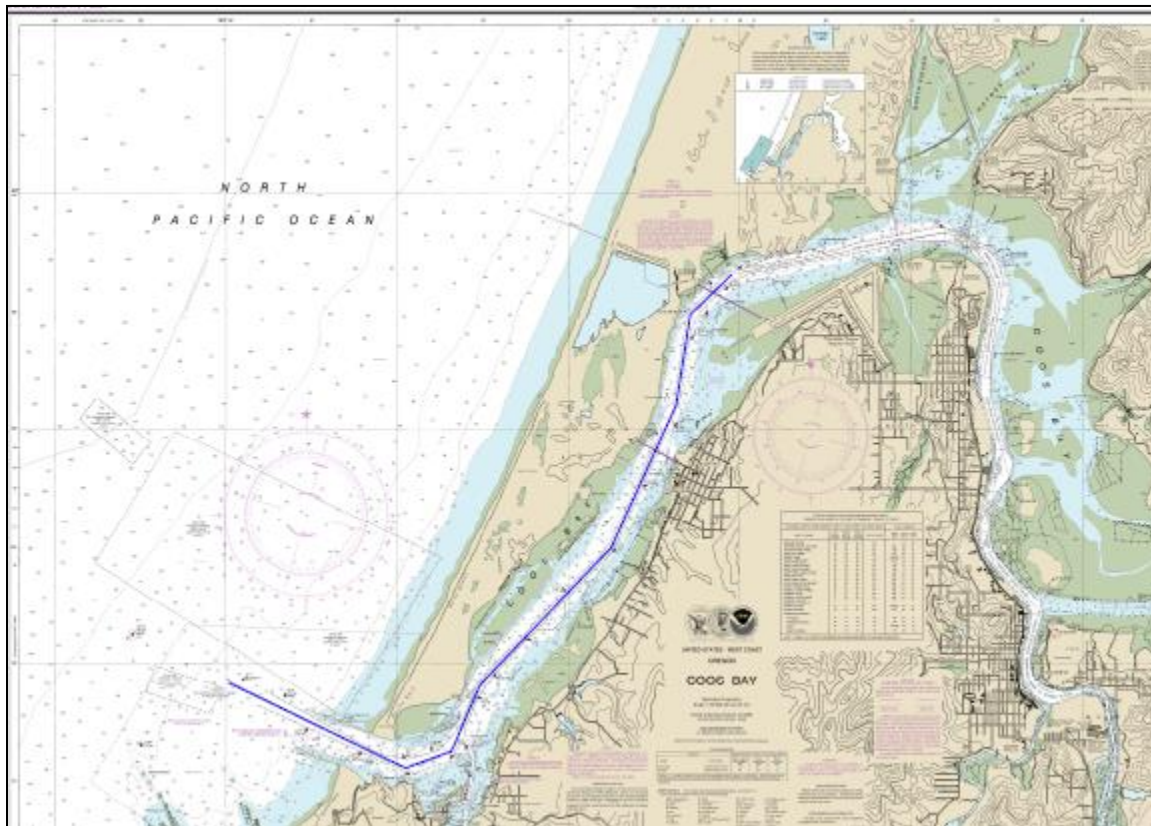


Figure 3. Overview of LNG Carrier Transit Route

9. **Vessel Operations** –LNG vessels will load cargo at the facility. 110-120 arrivals are expected at the facility annually with a dedicated fleet of LNG Carriers conducting cargo operations at the facility. A lay berth will be constructed to accommodate delays, repairs, and maintenance issues associated with Trans-Pacific Trade. Cargo operations will not be permitted at the lay berth and the applicant will outline procedures for the lay berth after the permitting process is complete.

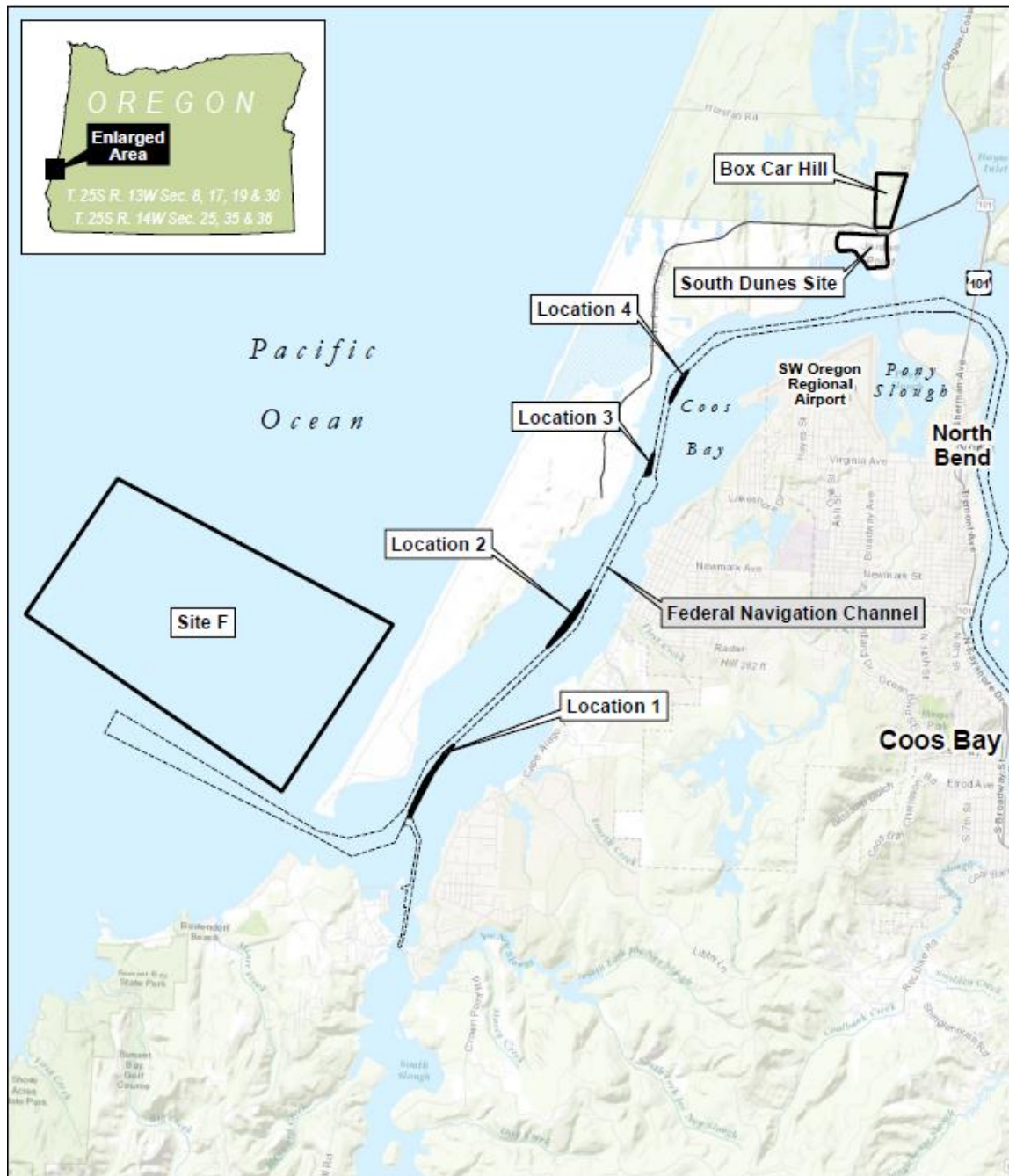


Figure 4. Channel Improvements

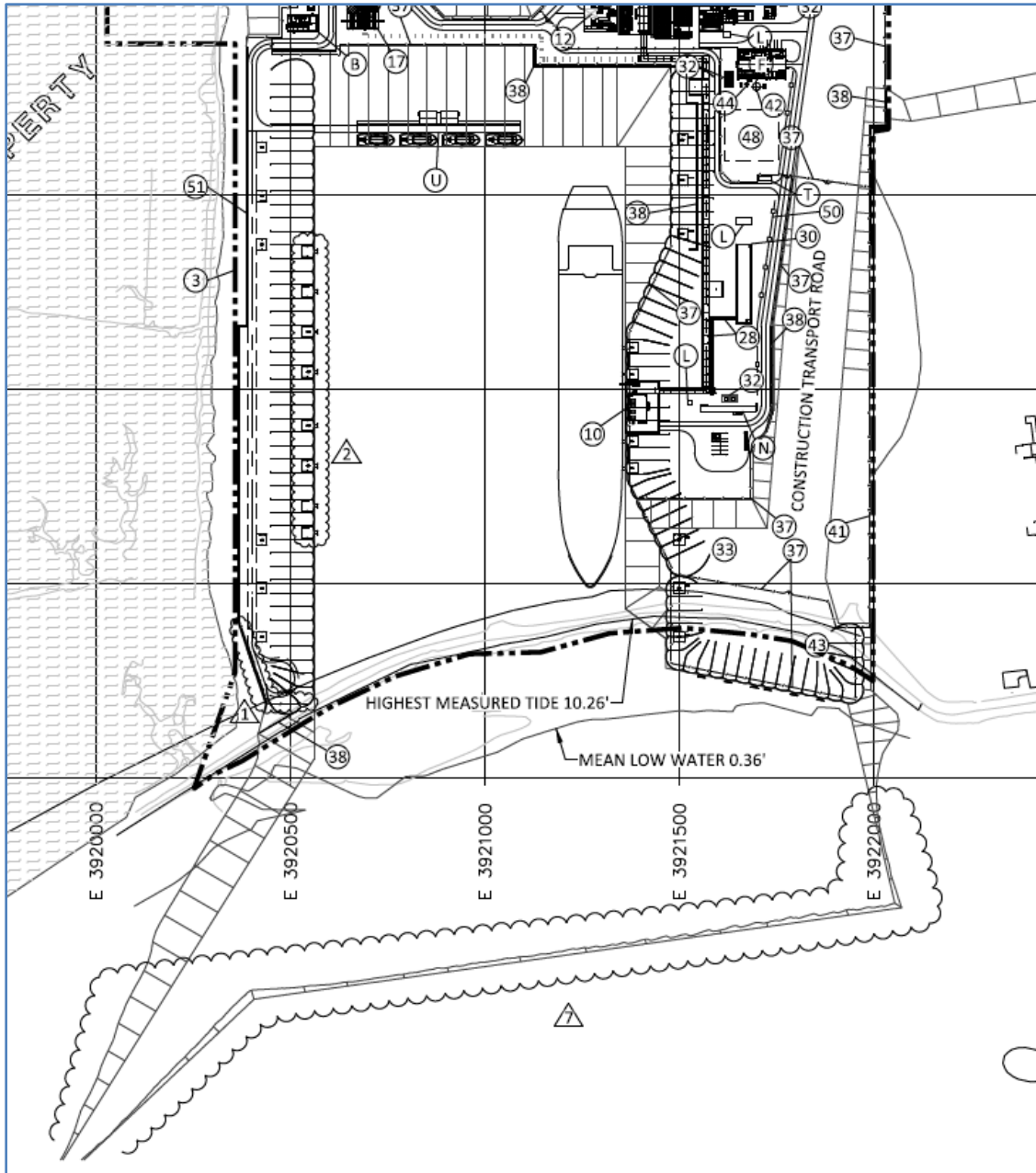


Figure 5. Dredging at the berth

U.S. Department of
Homeland Security

United States
Coast Guard



Captain of the Port
United States Coast Guard
Sector Columbia River

2185 SE 12th Place
Warrenton, OR 97146-9693
Staff Symbol: s
Phone: (503) 861-6206
Fax: (503) 861-6355

16611

NOV 07 2018

Tony Diocee, Vice President, Projects
Jordan Cove Energy Project, L. P.
5615 Kirby, Suite 500
Houston, TX 77005

Dear Mr Diocee:

The USCG Waterways Suitability Report provided to the Federal Energy Regulatory Commission (FERC) on July 1, 2008 and a subsequent Letter of Recommendation provided to FERC on May 10, 2018 required the applicant, Jordon Cove Energy Project, L.P. (JCEP), to conduct additional ship transit simulator studies for liquid natural gas (LNG) carriers that exceed a 148,000 m³ spherical containment class vessel or for any increase in physical dimensions.

Since the initial Waterway Suitability Analysis was submitted to the USCG in 2007 LNG Tanker technology has improved and tanker sizes and capacities have changed. As a result, additional simulator studies were required. In response, JCEP conducted additional vessel transit simulations during September 26-27, 2018 using modern ship design and carrying capacities.

The simulated transits were piloted by the Coos Bay Pilots and witnessed by the USCG. They were conducted at California Maritime Academy in Vallejo, CA using a Transas Simulator. They were conducted to demonstrate that the Coos Bay Pilots can safely and successfully maneuver LNG carriers up to 299.9 x 49m x 11.9m dimensionally while transiting the channel.

These successful simulations expand the ability for Jordan Cove LNG to use any class of LNG carrier (membrane, Moss, or SBT) with physical dimensions equal to or smaller than observed during the simulated transits. JCEP will continue development of the Transit Management Plan and work with the Coos Bay Pilots in establishing any other operating parameters.

Sincerely,

A handwritten signature in black ink, appearing to read "J. C. Smith".

J. C. SMITH
Commander, Sector Columbia River
Captain of the Port
Captain, U. S. Coast Guard

Enclosure: 1) Jordon Cove LNG Terminal Simulation Plan, September 2018
2) TRANSAS Simulation Printouts

Copy: FERC

Commander, Coast Guard District Thirteen (dp)
Commander, Pacific Area (PAC-54)
Commandant (CG-OES), (CG-ODO), (CG-FAC), (CG-741), (CG-CVC), (CG-ENG),
(LNGNCOE)
Marine Safety Center (CG MSC)

Exhibit 5



DAVID EVANS
AND ASSOCIATES INC.

MEMORANDUM

DATE: March 12, 2019

TO: Seth King, Steve Pfeiffer
Perkins Coie LLP
1120 N.W. Couch Street Tenth Floor
Portland OR 97209-4128

FROM: Gigi Cooper

SUBJECT: Federal Navigation Channel Dredge Area 4 – City of Coos Bay Land Use Permit Support

PROJECT: JLNG0003 112DE
Jordan Cove Energy Project – Regulatory Permitting

CC: Derik Vowels, Jordan Cove LNG

Perkins Coie LLP requested the following two work products from DEA to support the land use applications for the JCEP NRI #4:

- Explanation of how the NRI dredging work will be completed (timing, duration, equipment, materials) and how that work will affect users of the Bay; and

DEA response: Please see Attachment 1: Description of Dredging Work.

- Explanation of the environmental impacts of the NRI #4 by addressing the highlighted aspects of Coos Bay Estuary Management Plan Policies 4 and 5 (starting with 5 because it includes the cross-reference to 4, which, in turn, cross-references 4a).

DEA response: Please see Attachment 2: Responses to CBEMP Policies 4 and 5.

Please let me know if you have any questions.

Attachments/Enclosures: Attachment 1: Description of Dredging Work; Attachment 2: Responses to CBEMP Policies 4, 4a, 5

File Path: Document2

DEA Task:

- Explanation of how the NRI dredging work will be completed (timing, duration, equipment, materials) and how that work will affect users of the Bay.

Sources:

- Bill Gerken, PE, Moffatt & Nichol; Terry Stones, PE, David Evans and Associates, Inc.; and Pilots' Enhancement Narrative, April 20, 2017

DEA response:

Hydraulic dredging, the technique that would most likely be used, will employ a cutter suction dredge, in which material is loosened from its *in situ* state and lifted in suspension through a pipe system connected to a centrifugal pump that removes the material and pumps the slurry through a discharge pipeline. A rotating cutting apparatus (cutter head) is used around/ahead of the intake of a suction pipe to break up or loosen bottom material. The temporary dredge line for disposal will run up to approximately seven miles from the farthest location adjacent to but outside the Federal Navigation Channel (FNC). The pipeline would land at the north side of the upland confined disposal site denoted as APCO 2, in the City of North Bend, at approximately River Mile (RM) 9 of the FNC, near the southern terminus of the U.S. Highway 101 McCullough Bridge. The temporary dredge line would be approximately 24 to 30 inches in diameter and would be placed within a corridor of up to 50 feet in width. Corridors are designed to be wider than the dredge line to accommodate for inaccuracies and flexibility in dredge line placement, any shifting/settling of pipeline, and ability to accommodate variations in bathymetry. At the APCO disposal site, the material would be pumped onto the site in a slurry, decanted and dried within a containment dike system, and permanently stockpiled.

Construction of the temporary dredge line and dredging will occur during the ODFW in-water work window (IWWW) which occurs between October 1 and February 15, for three consecutive years. The duration over several years is required for material handling and dredge water decanting at the APCO 2 disposal site. Weather delays and/or equipment failures are not factored into the production rates and construction durations. Following completion of dredging, all in water pipelines, dredge equipment, and off-loading facilities if used, will be removed prior to the end of the IWWW in mid-February.

DEA Task:

- Explanation of the environmental impacts of the Dredge Area 4 by addressing the highlighted aspects of Coos Bay Estuary Management Plan Policies 4 and 5 below (starting with 5 because it includes the cross-reference to 4).

Sources:

- City of Coos Bay. No date. Coos Bay Estuary Management Plan, Management Framework: Definitions, Policies and Standards, and Plan Provisions.
http://coosbay.org/uploads/PDF/Plans/Estuary_Plan_-_Vol_3.pdf
- David Evans and Associates, Inc., Coos Bay Pilots Association Navigation Efficiency Improvement Project Draft Biological Assessment, April 2017
- David Evans and Associates, Inc., Coos Bay Pilots Association Safety Enhancements Project Draft Biological Assessment, January 2017
- David Evans and Associates, Inc., FERC Resource Report 8: Land Use, Recreation, and Aesthetics, September 28, 2017
- David Evans and Associates, Inc., Visual Impact Assessment Report (Appendix to FERC Resource Report 8: Land Use, Recreation, and Aesthetics), September 14, 2017
- David Evans and Associates, Inc., USACE/DSL Joint Permit Application Removal-Fill for the Navigation Reliability Improvements, Box 4, #3, Recreation, October 2017
- King, Seth, Perkins Coie LLC, Draft narrative in support of the application (mainly for Derik Vowels' comments on consistency with the project removal/fill application)
- Moffatt & Nichol, Inc. 2016. Draft Technical Memorandum – Safety Enhancements to the Coos Bay Navigation Channel, Task 5 Turbidity Study Technical Memorandum.
- Oregon Department of Environmental Quality (ODEQ). 2017b. ODEQ website for Total Maximum Daily Loads, South Coast Basin. Available online at:
<http://www.oregon.gov/deq/wq/tmdls/Pages/TMDLs-South-Coast-Basin.aspx>. Accessed on September 7, 2017
- Oregon Department of Fish and Wildlife. 1979. Natural Resources of Coos Bay Estuary: Estuary Inventory Report. Vol. 2, No. 6., for Oregon Land Conservation and Development Commission.
- Pfeiffer, Steven L., Perkins Coie LLC, Purpose and Need Statement for Safety Enhancements to the Coos Bay Navigation Channel, May 2, 2016

DEA response:

Text from the City of Coos Bay's Coos Bay Estuary Management Plan, 3. Management Framework: Definitions, Policies and Standards, and Plan Provisions, Section 3.3 – Bay-Wide Policies, is shown in *italics*. Provisions that Perkins Coie requested a response from DEA are in black font; other provisions are shown in grey font.

#5 Estuarine Fill and Removal

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*

Response: The proposed activity, dredging one 3.3-acre area, is required for navigation. The purpose of the proposed action is to improve reliability and efficiency of navigation for existing deep draft vessels by reducing the existing navigation constraints at the key turn (“Dredge Area”) in the Federal Navigation Channel (FNC). The proposed activity does not include fills for non-water-dependent uses.

- B. *If no feasible alternative upland location exists; and*

- C. *If a public need (i.e., a substantial public benefit) is demonstrated and the use or alteration does not unreasonably interfere with public trust rights; and*

- D. *If adverse impacts are minimized; and*

Response: Please see responses to Policy #4, D.

- E. *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 ORS541.615 and Section 404 of the Federal Water Pollution Control Act (P.L. 92-500).*

Other uses and activities which could alter the estuary shall only be allowed if the requirements in B, C, and D are met. All portions of these requirements may be applied at the time of plan development for actions identified in the Plan. Otherwise, they shall be applied at the time of permit review.

This strategy shall be implemented by the preparation of findings by local government documenting that such proposed actions are consistent with the Comprehensive Plan, and with criteria “a” through “e” above. However, where goal exceptions are included within this plan, the findings in the exception shall be sufficient to satisfy criteria “a” through “c” above. Identification and minimization of adverse impacts as required in “d” above shall follow the procedure set forth in Policy #4a. The findings shall be developed in response to a “request for comment” by the Division of State Lands, which shall seek local government’s determination regarding the appropriateness of a permit to allow the proposed action.

Response: Please see responses to Policy #4, the following section D., below.

“Significant,” as used in “other significant reduction or degradation of natural estuarine values,” shall be determined by:

- A. *The U.S. Army Corps of Engineers through its Section 10 and 404 permit processes; or*
B. *The Department of Environmental Quality for approvals of new aquatic log storage areas only;*
or
C. *The Department of Fish & Wildlife for new aquaculture proposals only.*

This strategy recognizes that Goal #16 limits dredge, fill and other estuarine degradation in order to protect the integrity of the estuary.

4. RESOURCE CAPABILITY CONSISTENCY AND IMPACT ASSESSMENT

Local government concludes that all proposed actions (approved in this Plan) which would alter or potentially alter the estuarine ecosystem have been based upon a full consideration of the impacts of the proposed alteration, except for the following uses and activities:

[EXCERPT OMITTED because these proposed project actions do not fall under any of these exceptions, a through d]

- D. *Any other uses and activities which require the resource capability consistency test as a condition within a particular management unit or which could affect the estuary's physical processes or biological resources.*

Response: Please see responses to 4. A. through D., immediately below.

Unless fully addressed during the development and adoption of comprehensive plans, actions, which would potentially alter the estuarine ecosystem shall be preceded by a clear presentation of the impacts of the proposed alteration.

For uses and activities requiring the resource capabilities test, a special condition is noted in the applicable management unit uses/activities matrix. A determination of consistency with resource capability and the purposes of the management unit shall be based on the following:

- A. *A description of resources identified in the plan inventory;*

Response: Dredge Area 4 is designated 52-NA. The temporary dredge lines from Dredge Area 4 are in City of Coos Bay CBEMP designation 52-NA and DDNC. In 52-NA, temporary alterations may be allowed subject to “Special Conditions” presented following the use and activity matrix. A few of the special conditions are non-discretionary, but most require local judgment and discretion and that development of findings to support any final decision about whether or not to allow the use or activity. In DDNC, temporary alterations are permitted outright.

The Oregon Department of Fish and Wildlife Natural Resources of Coos Bay Estuary: Estuary Inventory Report (1979), describes the area:

Although the sandy shore between RM 6 and 8 on the western side of the bay appears unproductive because it does not have attached vegetation, it is a valuable habitat for certain species of fish. Any development occurring there should preserve the sandy substrate and water quality of the area. Use of pilings may be appropriate in the area unless subsequent reduction in current velocity changes the quality of the substrate.

Significant Habitat of Major Importance and other inventory maps. The Shoreland Values Requiring Mandatory Protection map (June 14, 1982) shows three categories of Significant Wildlife Habitat: freshwater wetlands, snowy plover habitat, and heron rookery. All of the mapped resources are on land. As these three categories of Significant Wildlife Habitat are all terrestrial, and this dredging project solely would occur within the waters of Coos Bay, the proposed project would not disturb any Significant Habitat of Major Importance that are Shoreland Values Requiring Mandatory Protection. Other mapped shoreland values are major marsh, archaeological sites, historical sites, and coastal headlands, which likewise are terrestrial and would not be disturbed.

The Significant Habitat of “Major” Importance Qualifying as Natural Management Units Under Estuarine Resources Goal (June 11, 1982), maps major salt marsh, seagrass and algae beds, intertidal flats, seagrass/algae beds and intertidal flats, and other significant habitat. These are terrestrial, not

within the waters of Coos Bay, and eelgrass is to the east of Dredge Area 4, and none would be disturbed by this proposed project.

The Fish & Wildlife Habitats Map I shows anadromous fish distribution (salmon, steelhead, and cutthroat trout) throughout Coos Bay. It indicates a snowy plover nest site and a blue heron nest site on the North Spit, but neither are near, or would be affected by, the dredging project at Dredge Area 4. The Fish & Wildlife Habitats Map II (1980) shows elk and deer big game range and wetlands, all of which are terrestrial only.

The Crustacean Habitats map delineates areas of amphipod (*Corophium sp.*), ghost shrimp (*Neotrypaea californiensis*), and mud shrimp (*Upogebia pugettensis*). The Dredge Area 4 is not in a mapped crustacean habitat. Dredge Area 4 is near an amphipod habitat area on the North Spit, but dredging activities would not disturb it.

The Clam Beds and Oyster Leases map (August 5, 1981) shows clam beds on both sides of the FNC. Beds between RM 6 and RM 8 are directly adjacent to the existing FNC, but on the other side of it from Dredge Area 4. The Clam Species in the Coos Bay Estuary map indicates that these primarily are gaper (*Tresus capax*) clams.

The inventory document is from July 1984 and the maps are from 1980 and 1981, based on sources from the 1970s. At that time, few resource-specific inventories had been done, and conditions in the Bay have changed in the past 35 and 45 years. Therefore, the information in the inventory is not as useful as studies conducted specifically for the Jordan Cove project, including Dredge Area 4, within the past decade.

B. An evaluation of impacts on those resources by the proposed use (see impact assessment procedure, below); and

Response: Please see the responses to Policy #4, the following section, C., below.

C. In a natural management unit, a use or activity is consistent with the resource capabilities of the area when either the impacts of the use on estuarine species, habitats, biological productivity and water quality are not significant or that the resources of the area are able to assimilate the use and activity and their effects and continue to function in a manner to protect significant wildlife habitats, natural biological productivity, and values for scientific research and education.

D. In a conservation management unit a use or activity is consistent with the resource capabilities of the area when either the impacts of the use on estuarine species, habitats, biological productivity and water quality are not significant or that the resources of the area are able to assimilate the use and activity and their effects and continue to function in a manner which conserves long-term renewable resources, natural biologic productivity, recreational and aesthetic values and aquaculture.

The impact assessment need not be lengthy or complex, but it should enable reviewers to gain a clear understanding of the impacts to be expected. It shall include information on:

A. The type and extent of alterations expected;

Response: Dredge Area 4 is the turn from Lower Jarvis Range to Jarvis Turn Range channels: JCEP proposes to widen the turn area here from the current 500 feet to 600 feet at the apex of the turn and lengthen to total corner cutoff area of the turn from the current 1,125 feet to about 1,750 feet

thereby allowing vessels to begin their turn in this area earlier. A dredge material pipeline would carry dredge material from Dredge Area 4 to the APCO 2 disposal site, outside of City of Coos Bay jurisdiction.

B. The type of resource(s) affected;

Response: The resources evaluated are water quality including turbidity and discharges, physical characteristics including shoaling and shoreline erosion, noise, deep subtidal area, living resources, recreation, aesthetics, and navigation. The only affected resource would be the temporary disturbance for the removal of approximately 3.3 acres of deep subtidal area. Dredging would take place in deep subtidal habitat, which also provides habitat for benthic organisms such as worms, crustaceans, and mollusks. These activities would temporarily affect the macroinvertebrates that live within the substrate in these areas and move, rest, find shelter, and feed on the substrate and organic material. Additionally, the fish species that utilize these habitats could be temporarily affected. Dredging would result in increased turbidity within the estuarine analysis area. The restriction of construction activities to the in-water work window of October 1 through February 15, when salmonid species abundance is lower, would reduce the likelihood of impacts to these species. The substrate in these areas consists primarily of unvegetated sand and rock, and is therefore of low ecological value. The dredging project would temporarily increase water turbidity. It would be temporarily visible and may be audible.

C. The expected extent of impacts of the proposed alteration on water quality and other physical characteristics of the estuary, living resources, recreation and aesthetic use, navigation and other existing and potential uses of the estuary; and

Response:

Water quality. The Oregon Department of Environmental Quality's (ODEQ) Ambient Water Quality Monitoring Program and the Oregon Beach Monitoring Program (OBMP) monitor water quality. ODEQ has designated CWA Section 303(d) water quality limited segments within the Coos Bay watershed. The ODEQ is currently in the initial scoping and data collection phase for the preparation of a total maximum daily load (TMDL) limit for fecal coliform in the watershed. A TMDL is a planning tool that assesses the various sources of a constituent into a watershed and places achievable limits on those sources in order to accomplish water quality goals. The 2012 ODEQ Priorities and Schedule list targets year 2015 to start work on the Coos sub-basin TMDL (ODEQ 2014). The ODEQ website notes that a TMDL for the Coos Subbasin has been initiated, and is in the initial scoping and data collection phase (ODEQ 2017b).

Coos Bay from River Mile 0 to 7.8 is water quality limited for fecal coliform and shellfish growing is listed as a beneficial use, and a TMDL is needed (Category 5) (ODEQ 2016).

Mobilization of suspended sediment as a result of dredging operations can result in a reduction in light penetration and, consequently, a reduction in primary production within the affected area. Increases in suspended sediment can also affect the feeding patterns of benthic filter feeding organisms and the behavior of fish, while the settling of suspended particles can result in the burial of organisms and modifications to benthic substrate (FERC 2015).

Turbidity has not been identified as a water quality concern in Coos Bay. Within Coos Bay, ambient background turbidity levels taken at the Charleston Bridge station between April 2002 and December 2004 range between 10 milligram per liter and 27.3 milligram per liter during summer

and winter, respectively (Moffatt & Nichol 2017). More recently, hourly turbidity readings taken at the North Spit-BLM boat ramp gauge were compiled between August 2013 and January 2015. Based on these data, the average natural turbidity level was calculated to be 40 mg/L at the North Spit-BLM boat ramp gauge (M&N 2016). JCEP expects increased water turbidity as a result of the Dredge Area improvements and during the driving of the temporary piles that will support the steel cradle and slurry pipeline spanning the eelgrass beds to be temporary and limited to the immediate vicinity of operations. Within 200 feet of dredging operations, turbidity levels decrease to ambient background levels (FERC 2015).

JCEP does not anticipate oil spills or toxic discharges to occur when constructing the Dredge Area improvements. The potential for spills and toxic discharges always exists when using dredging equipment. Any accidental spill or leak of petroleum products or other toxic discharges from dredging equipment or vessels could result in impacts to water quality and aquatic species in the short-term. However, the dredging vessels will be carrying relatively small volumes of petroleum (1,500 to 25,000 gallons) in comparison to the large bulk carriers and Panamax vessels (1.5 to 2 million gallons [NOAA 2016]) that regularly travel through Coos Bay. The fuel carried onboard the dredging vessels is low sulphur diesel, which is relatively light and will evaporate over time if spilled on the water. The bulk carrier vessels carry both low sulphur diesel and heavy fuel oil, the latter of which would have a much greater pollution impact if spilled on water. Given the low probability of a spill, preventive measures such as the implementation of a spill prevention plan, and the relatively small volume of fuel on board vessels utilized by the Project, large-scale or long-term negative impact are not anticipated from spills and/or toxic discharges.

Physical characteristics. According to sediment transport modeling of the proposed Dredge Area, shoaling in the dredged areas is not expected to differ from current shoaling totals for the existing FNC. Total shoaling was analyzed through existing conditions versus incorporating the proposed enhancements, and the difference in shoaling amounts after one and three years were negligible (Moffat and Nichol 2017). Thus, indirect effects to listed species and/or critical habitat are not expected to occur as a result of sediment transport or shoaling in Dredge Area 4. The dredging activity would not cause any shoreline erosion beyond natural waves, which is minimal.

Noise. Dredging equipment and material transport vessels related to the Dredge Area improvements may generate temporary noise disturbances. However, the noise will be localized to the immediate dredging area. While the noise temporarily could affect the behavior of aquatic species in the immediate vicinity and result in the displacement of noise-sensitive species during hours of operation, it is anticipated that any displaced species would resume their typical behavior patterns once dredging has ceased.

There could be potential temporary and short-term impacts from construction noise to people recreating on the North Spit, but distance, topography, coastal wind, and vegetation would help to minimize the noise from the dredging. City of Coos Bay does not have a noise ordinance.

Deep subtidal area. The entire 3.3-acre footprint of Dredge Area 4 is located in deep subtidal habitat. Deep subtidal habitats are not defined by any regulations (e.g., Clean Water Act Section 404 or Oregon Removal-Fill Law), but are cited in Roye (1979) and CBEAC (1984) as occurring below -15 feet MLLW and being generally less productive than shallower habitats in the Coos Bay estuary). The habitat in these locations is classified as deep subtidal, estuarine, unconsolidated bottom based on the Cowardin classification system (Cowardin et al. 1979). Deep subtidal habitat is classified as

Category 3 under ODFW’s habitat categories, because it is “essential” to wildlife but is not “limited.” This habitat is disturbed on an annual basis as part of USACE’s maintenance dredging of the FNC.

A total of 846 acres of mapped deep subtidal habitat is located within lower Coos Bay. Permanent removal from Dredge Area 4 would be approximately 3.3 acres, or approximately 0.3 percent. The substrate in this area consists primarily of unvegetated sand and rock, and is therefore of low ecological value. In addition, the dredge lines would temporarily affect approximately 13 acres of deep subtidal habitat.

The dredging volumes in cubic yards (CY) for Dredge Area 4 are:

Location	Rock Volume (CY)	Sand Volume (CY)	Total Volume (CY)
Dredge Area 4 (RM ~7, Jarvis Turn)	0	24,900	24,900

(Moffatt & Nichol 2017)

Living resources. Dredging will remove sand in deep subtidal habitat, resulting in direct impacts to benthic organisms occupying the substrate, such as worms, mollusks, echinoderms and crustaceans, as well as organisms that feed on them. Removal of larvae and juvenile life stages of various species, including crustaceans, mussels and gastropods, is also anticipated. While these benthic organisms are not listed as threatened or endangered under the federal Endangered Species Act, they are an important food source for listed species. However, the effects to aquatic organisms would be temporary and localized, and will not have population-level effects. Recovery of benthic organisms to pre-dredging conditions can occur as quickly as one month post-dredging, but could take up to a year (FERC 2015).

The following protected species were identified as potentially occurring in the Coos Bay in the vicinity of Dredge Area 4:

Common name	Scientific name	Status
Protected fish species		
Eulachon – Southern Distinct Population Segment (DPS)	<i>Thaleichthys pacificus</i>	threatened
Green Sturgeon – Southern DPS	<i>Acipenser medirostris</i>	threatened
Oregon Coast Evolutionary Significant Unit (ESU) Coho Salmon	<i>Oncorhynchus kisutch</i>	threatened
Protected bird species		
Marbled murrelets	<i>Brachyramphus marmoratus</i>	threatened
Pacific Coast population of western snowy plover	<i>Charadrius alexandrinus nivosus</i>	threatened
Marine mammal species Protected under the MMPA but not federally listed		
Harbor seals	<i>Phoca vitulina</i>	N/A
California sea lions	<i>Zalophus californianus</i>	N/A
The eastern DPS of Steller sea lion	<i>Eumetopias jubatus</i>	N/A
Northern elephant seals	<i>Mirounga angustirostris</i>	N/A
Harbor porpoises	<i>Phocoena</i>	N/A
Killer whale Eastern North Pacific Transient stock and Eastern North Pacific Offshore stock	<i>Orcinus orca</i>	N/A

The proposed dredging project has the potential to affect the ESA-listed fish and bird species identified in the table above. Dredging is expected to create localized, short-term spikes of high to moderate TSS and turbidity. Turbidity may affect marbled murrelet forage/prey species and their habitat. Effects to listed fish are expected to be slight due to the limited area affected in the bay and limitations on construction periods. While impacts such as behavioral and foraging changes are anticipated, these impacts will be limited to the immediate location of dredging activities and will be temporary in nature. Direct mortality of juvenile and adult life stages of ESA-listed fish is not anticipated, as they will likely be able to avoid areas being actively dredged and dredging would occur during the in-water work window when these species are less abundant. While foraging for benthic organisms in dredged areas will be affected, deep subtidal foraging habitat is not limited in Coos Bay and these areas are expected to recolonize and recover within a year of dredging. Dredging activities impacts to ESA-listed fish and birds would be temporary in nature and are not expected to adversely affect these species or their designated critical habitat.

The proposed dredging project has the potential to affect the marine mammals identified in the table above. Turbidity associated with dredging activities may temporarily affect behavior and foraging within the immediate vicinity of the dredge area.

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended, requires that proposed projects with a federal nexus evaluate their impacts on habitat of commercially managed fish populations. Essential Fish Habitat (EFH) is identified and described based on areas where various life stages of each managed species commonly occur. EFH has been defined as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (16 USC 1802(10)). Coos Bay is designated as EFH for several Coastal Pelagic Species (CPS—includes Pacific sardine, northern anchovy, market squid, Pacific mackerel, and jack mackerel), West Coast Groundfish (includes more than 80 species of rockfish, flatfish, groundfish, sharks and skates), and two Pacific Salmon (Chinook, and coho). Dredging may adversely affect EFH for juvenile and adult fish from the three groups. This is based on the predicted levels of turbidity from dredging in Coos Bay relative to background levels, the short-term, localized, but ongoing exposure of fish to such conditions during up to four in-water work windows; and the periodic disturbance of benthic communities for about a year each dredge cycle.

Recreation. The USACE manages 245 acres on the North Spit, including the North Jetty at the mouth of Coos Bay. The BLM administers 1,864 acres on the North Spit, with 725 acres classified as an Area of Critical Environmental Concern and the remainder designated as a Special Recreation Management Area (SRMA), in recognition of the value of the area for outdoor recreation. The BLM boat launch facility and courtesy dock, which provide access to the Coos Bay estuary and are within the SRMA (BLM 2016). The primary recreational activities taking place within the Coos Bay estuary include boating, fishing, waterfowl hunting, wildlife viewing and bird watching, clamming, and crabbing.

Recreational boating takes place throughout Coos Bay, although most originates primarily near the towns of Charleston and Empire, where there are boat ramps. There is also a marina complex in Charleston and access points for canoeists and kayakers to the northeast in Haynes Inlet and North Slough. In addition to the Charleston boat ramp and Empire boat ramp, recreational boaters use the BLM North Spit boat ramp to access the bay. All three boat ramps would remain open during

dredging. Dredging and dredge material transport will be limited in extent and avoidable by recreational craft participating in the fishery. Dredge operations and submerged temporary dredge line are not expected to impact recreational craft transit to upstream or downstream areas of Coos Bay or limit fishing except where work is actively occurring and in the associated safety area around work areas. Dredging activities will be announced to the boating community via a local notice to mariners provided through notification to the USCG. There would be no significant impact on recreational boating because dredging activities would be in a limited area, short-term, and temporary.

The main recreational catch species of fish in and around Coos Bay include coho and Chinook salmon. Other recreational catch species include American shad, shiner perch, redbait surf perch, striped sea perch, white sea perch, pile perch, black rockfish, lingcod, Cabezon, red Irish lord, Pacific staghorn sculpin, surf smelt, Pacific herring, Pacific tomcod, kelp and rock greenling, blue and cooper rockfish, halibut, and white sturgeon. Much of the recreational angling for salmon in Coos Bay occurs in late summer and fall, usually beginning in late summer at jetty areas and moving up the bay as fish move upstream. Recreational fishing for sturgeon occurs between the railroad bridge and the McCullough Bridge, and also above the McCullough Bridge. Dredging will occur concurrently with the recreational salmon fishery for approximately one month annually during construction. Dredging will observe the ODFW in-water work window of October 1 – February 15 and is expected to overlap with the salmon fishery primarily during the month of October.

Recreational clamming and crabbing activities occur in Coos Bay on a year-round basis, and they bring revenue to the region. All species of “bay clams” are found in Coos Bay, including butter (about 24 percent of the harvest), cockle (10%), gaper clams (6%), and native littleneck clams (1%). Clamming is conducted on the mud flats on the bay side of the North Spit up to NCM 6, Oregon Department of Fish and Wildlife (ODFW) regulations limit the amount a person can catch in a day to 20 clams, of which 12 may be gaper clams. Between March and September of 2008, a total of about 33,700 kilograms of clams were harvested in Coos Bay, making it the third most productive clamming estuary in the state (Ainsworth and Vance 2008).

Although shore crabbing in Coos Bay is done year-round, it is most productive during fall and winter. Crabbing is conducted from docks in Charleston and Empire, and from boats, particularly to the west of the FNC in the lower bay, on the bay side of the North Spit below NCM 7. Crabs are caught using traps, rings, or snares. While recreational crabbers in Oregon also harvest red rock crabs and Pacific rock crabs, Dungeness crabs are far more popular. A study that collected crabs near the RFP property found that 98 percent were Dungeness crabs, with far lesser counts of hairy shore crabs, red rock crabs, and non-native European green crabs (Yamada 2014). ODFW regulations limit individual daily catches of crabs to 12 male Dungeness larger than 146 millimeters across and 24 red crabs of any sex and size. Another study by ODFW found that between 2008 and 2011 an average of 158,650 pounds per year of Dungeness crabs were harvested from Coos Bay. During that same period an annual average of 14,710 recreational crabbing trips were taken to Coos Bay. The vast majority of the recreational crabbers (76 percent) came from 100 miles away or less (Ainsworth *et al.* 2012).

The west shore of the bay at Jordan Cove contains sand/mudflats, eelgrass beds, and a fringe of salt marsh that provide habitat for recreationally important ghost shrimp and mud shrimp. These shrimp are recreationally harvested at a number of locations throughout the bay, and are popular among anglers for use as bait.

Aesthetics. Dredging equipment and activities would be visible in Coos Bay. However, relative to existing tanker ship traffic in the Bay, and the existing operational ocean-going vessel loading facility at the RFP facility, the dredging is anticipated to be a minor visual impact, as well as limited in duration.

Navigation. The proposed navigation reliability improvement at Dredge Area 4 would have a beneficial impact on the current and future viability for maritime commerce in Coos Bay. The proposed enhancements to the FNC are designed to reduce entry and departure delays for vessel transit through the FNC for the size of vessels entering the Port today. Although log export vessels serving the upper bay are smaller, the proposed enhancements also benefit these vessels by broadening the tidal and environmental limit (wind and current) windows for transiting the FNC, which provides an enhanced margin of safety and improved efficiency in the loaded vessel departure schedule. The navigation reliability improvements also would allow companies to engage in emerging opportunities to export products with today's larger vessels.

During outbound transits it is difficult to make this 35-degree turn from the Jarvis Turn Range, which is 400 feet wide, to the Lower Jarvis Range, which is only 300 feet wide, due to the very short length of the existing corner cutoff of only 1125 feet. Widening the turn area from the current 500 feet to 600 feet at the apex of the turn and lengthening the total corner cutoff area of the turn from the current 1125 feet to about 1750 feet will allow the Pilots to commence their turn earlier. This will greatly improve the ability of today's larger ships to make this turn safely on a consistent basis.

D. The methods which could be employed to avoid or minimize adverse impacts.

Response:

Water quality. JCEP will use methods to minimize the effects of the navigation reliability improvements on water turbidity within the bay. Should turbidity levels remain above ambient background levels greater than 200 feet from dredging operations, BMPs will be employed in place to reduce turbidity levels further. JCEP would avoid and minimize oil spills or toxic discharges during dredging operations and dredged material transport, including the implementation of spill containment plans.

Noise. To minimize impacts to fish and wildlife, BMPs will be implemented to minimize the extent of noise generation to the maximum extent possible. However, it will not be possible to avoid noise generation entirely, but it would be temporary.

Deep subtidal area and living resources. JCEP plans to perform dredging during the ODFW-approved in-water work window for Coos Bay (October 1 to February 15) to reduce impacts to sensitive life stages of fish in the Bay. Due to the short time in which dredging would occur, benthic communities would be expected to recover.

Recreation. The USCG and the OSMB would provide notices to boaters to avoid the area during the dredging activities, which would occur during the in-water work period from October 1 through February 15. All floating and submerged dredging equipment operating in the bay will be clearly marked with day signals and light signals at night accordance with the US Inland Rules of the Road. If the signage and notices are not sufficient to prevent recreational boating from avoiding the construction areas, some form of physical barrier, such as a continuous string of highly visible soft material floats, could be extended across the mouth of the slip or around the construction dredging

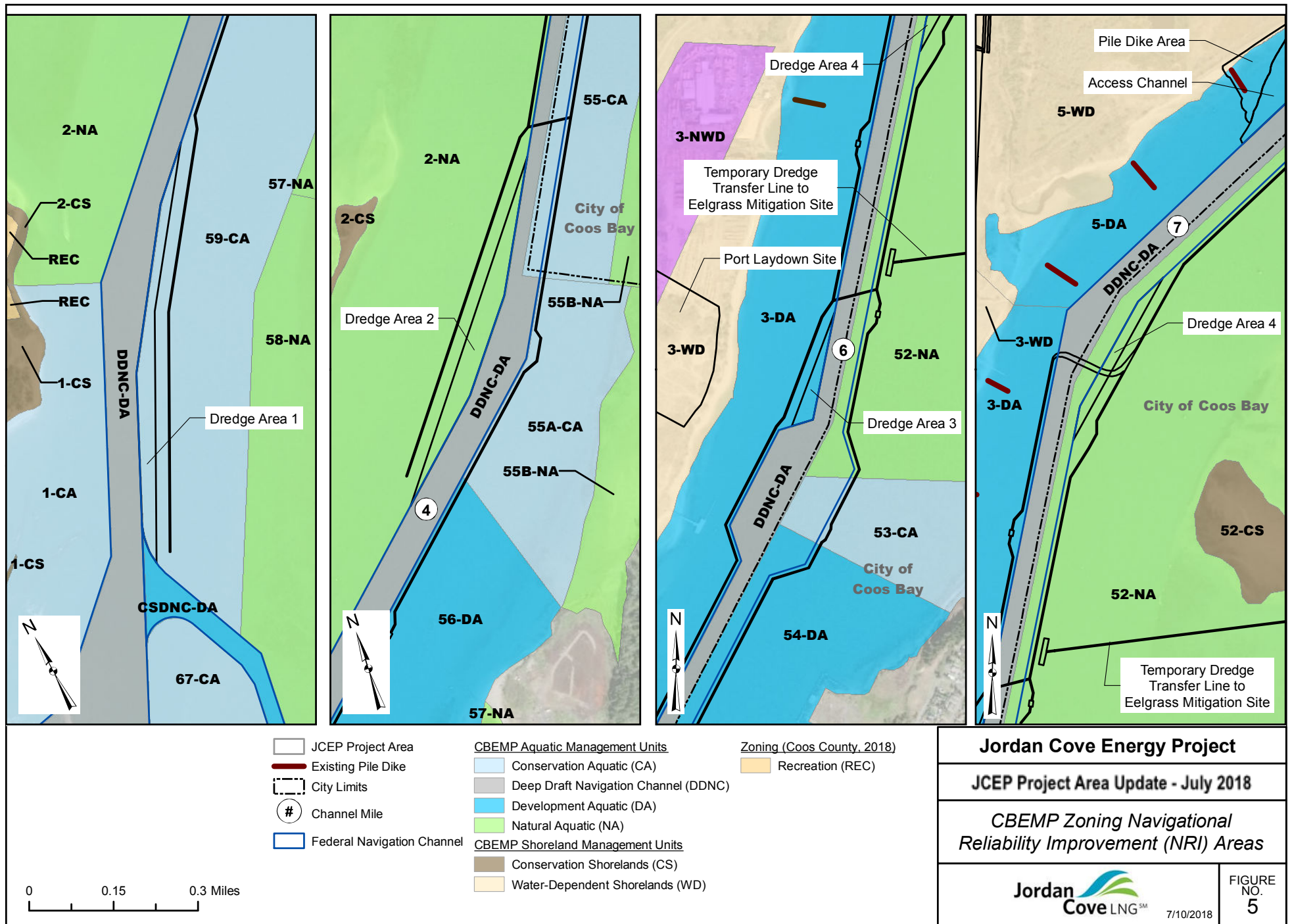
area. Construction safety inspectors would also be responsible for warning any recreational boaters who enter the construction area. As the construction dredging area is limited in size, boaters could easily avoid the construction areas by moving to the opposite side of the bay.

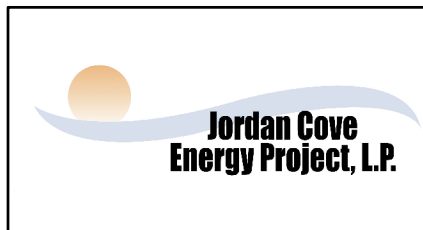
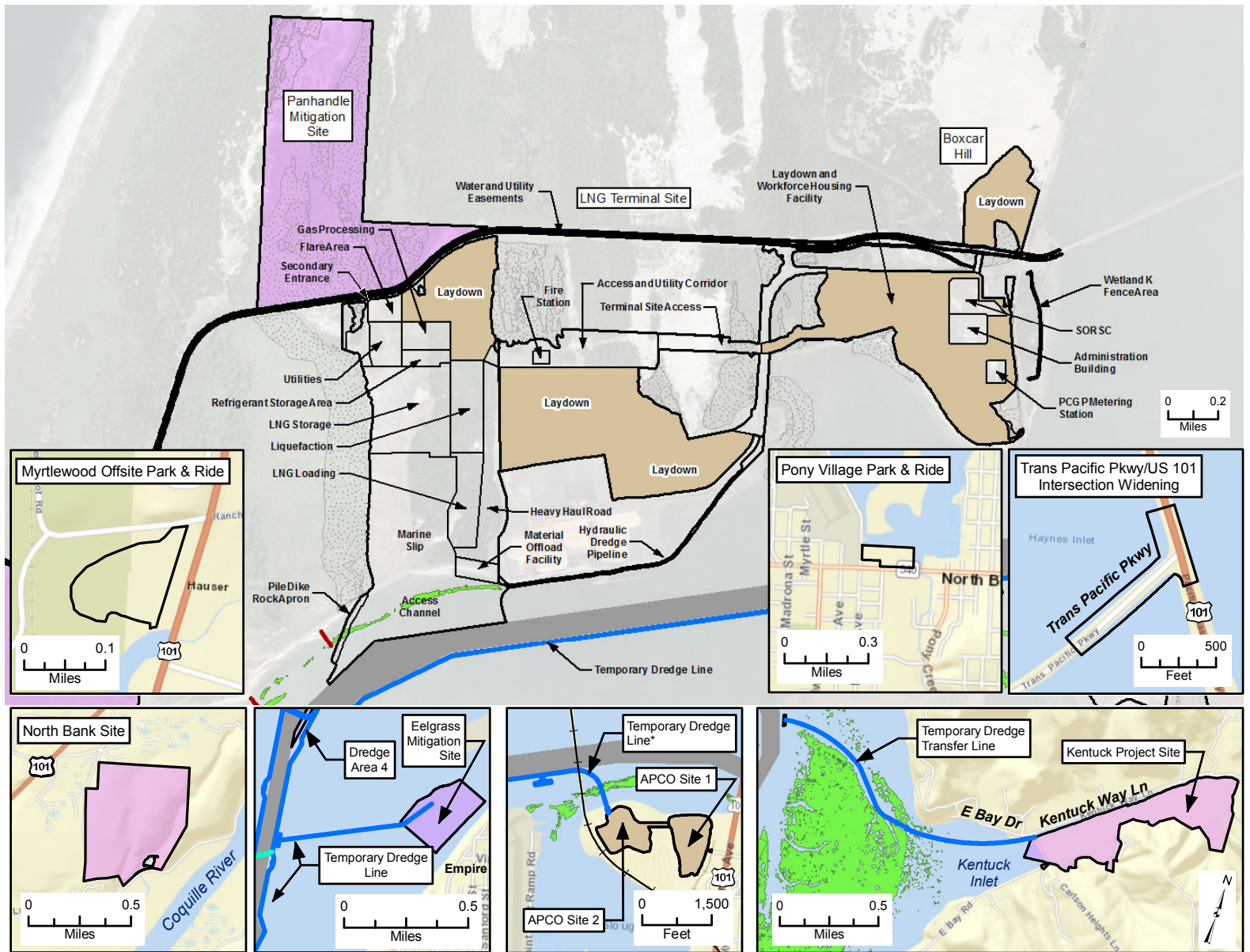
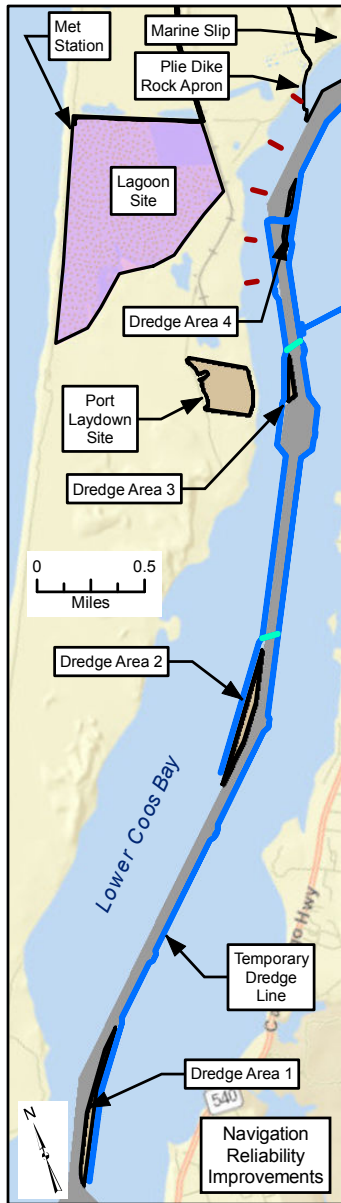
Aesthetics. With minor relative impacts, no avoidance or minimization methods are needed.

Navigation. The sections of the pipeline that cross the FNC will be submerged on the FNC bottom to allow for vessel passage. The section(s) of floating pipeline would be temporarily removed to allow vessel passage.

This policy is based on the recognition that the need for and cumulative effects of estuarine developments were fully addressed during the preparation of this Plan and that, except as otherwise stated above, no additional findings are required to meet Implementation Requirement #1 of LCDC Goal 16.

Response: No response required.





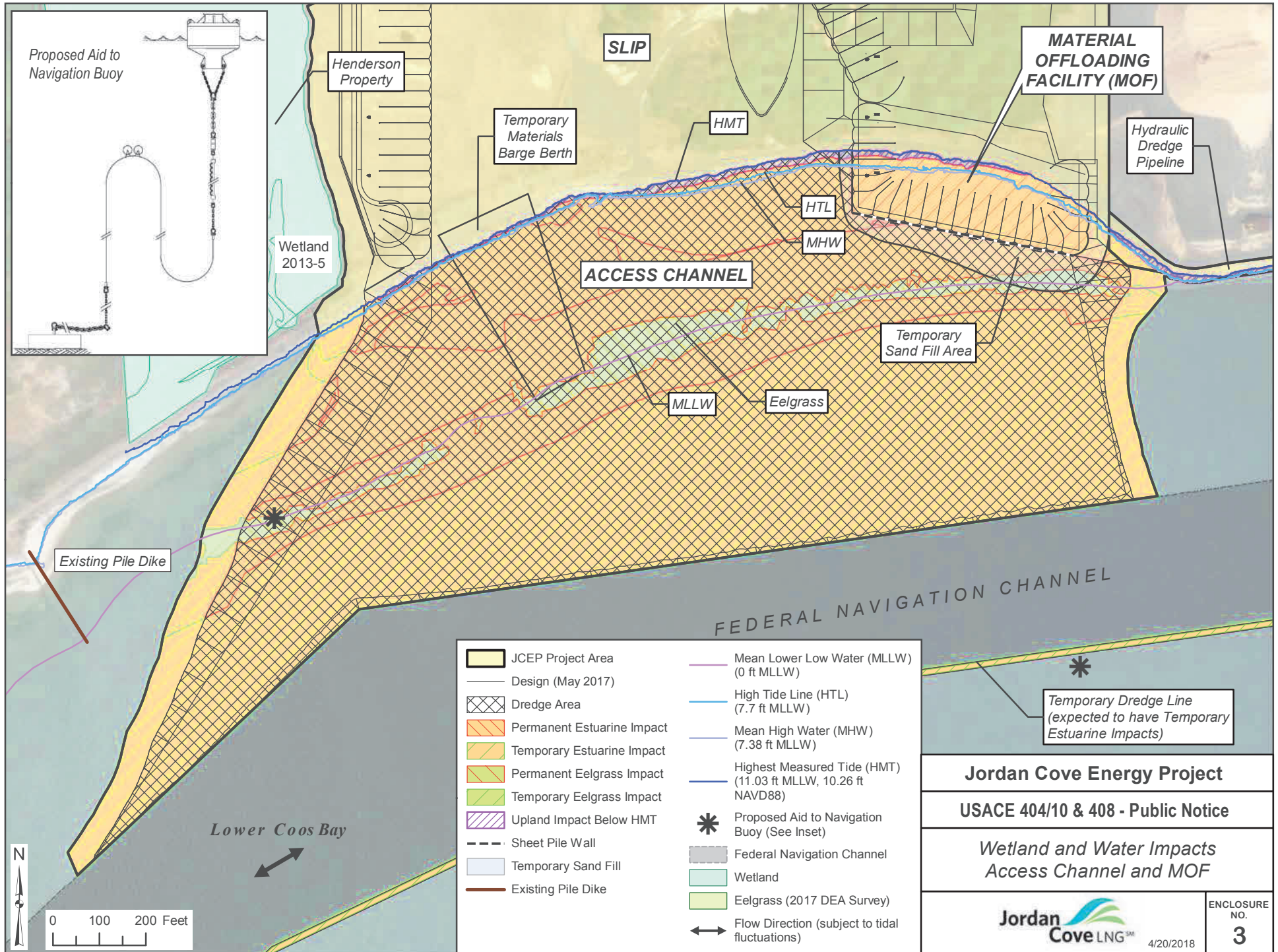
- JCEP Project Area
- Temporary Dredge Line (submerged/sunken)*
- Temporary Dredge Line (floating)
- Federal Navigation Channel
- Existing Pile Dike
- Work Area
- Mitigation Site
- Laydown Area
- Wetland
- Eelgrass

* The Temporary Dredge Line will be suspended where it crosses the eelgrass at the entrance to APCO Site 2

Jordan Cove Energy Project

Figure 1.3-1

Plot Plan of Construction Facilities



PROPERTY OWNER CERTIFICATION AND CONSENT

I hereby certify that the Oregon Department of State Lands is the manager of those submerged and submersible non-trust lands in Coos Bay owned by the State of Oregon. I hereby approve Jordan Cove LNG, LLC to file land use applications with the City of Coos Bay ("City"), the City of North Bend, and Coos County ("County") for the following land use authorizations for uses and activities to be located and/or undertaken within our area of ownership, as depicted on attached Exhibit 1:

(1) Post-acknowledgment amendments to the Coos Bay Estuary Management Plan ("CBEMP") map at three Coos Bay locations in the City of Coos Bay and unincorporated Coos County depicted in Exhibit 1 to these Applications ("Navigation Reliability Improvement Sites" or "NRI Sites") to change the zoning designation of 59-CA, 2-NA, and 3-DA, to DDNC-DA;

(2) A post-acknowledgment amendment of the CBEMP, which is part of the Coos County Comprehensive Plan ("CCCP"), to take a reasons exception to Statewide Planning Goal ("Goal") 16 text amendment adopted of the CBEMP, which is part of the Coos County Comprehensive Plan ("CCCP"), in the form of a reasons exception to Statewide Planning Goal ("Goal") 16 to authorize the rezone of the NRI Sites to DDNC-DA;

(3) An amendment of the text of the Coos County Zoning and Land Development Ordinance ("CCZLDO") to clarify that the DDNC-DA designation is appropriate for application to area adjacent to, and not only within, the designated federal navigation channel;

(4) Administrative conditional use permit to authorize new and maintenance dredging at the NRI Sites in the DDNC-DA zone, as this Application proposes to amend those sites.

(5) Administrative authorization from the City of North Bend for the installation of temporary dredge material transport lines, an off-loading facility, and the placement of dredged material in an Industrial zone designation.

By: 

Print Name and Title: Vicki L. Walker, Director, Oregon Department of State Lands

Date: 11/1/18

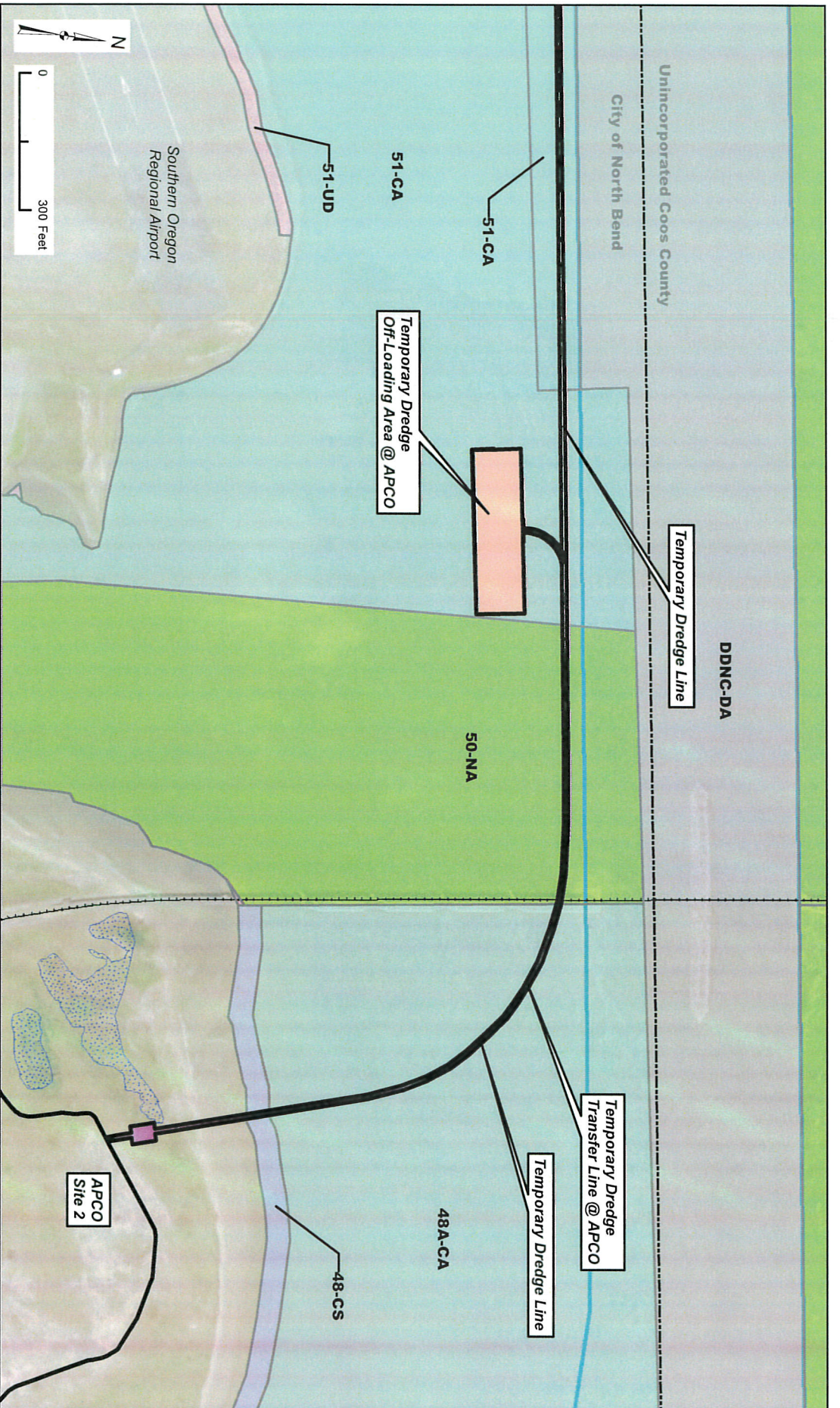
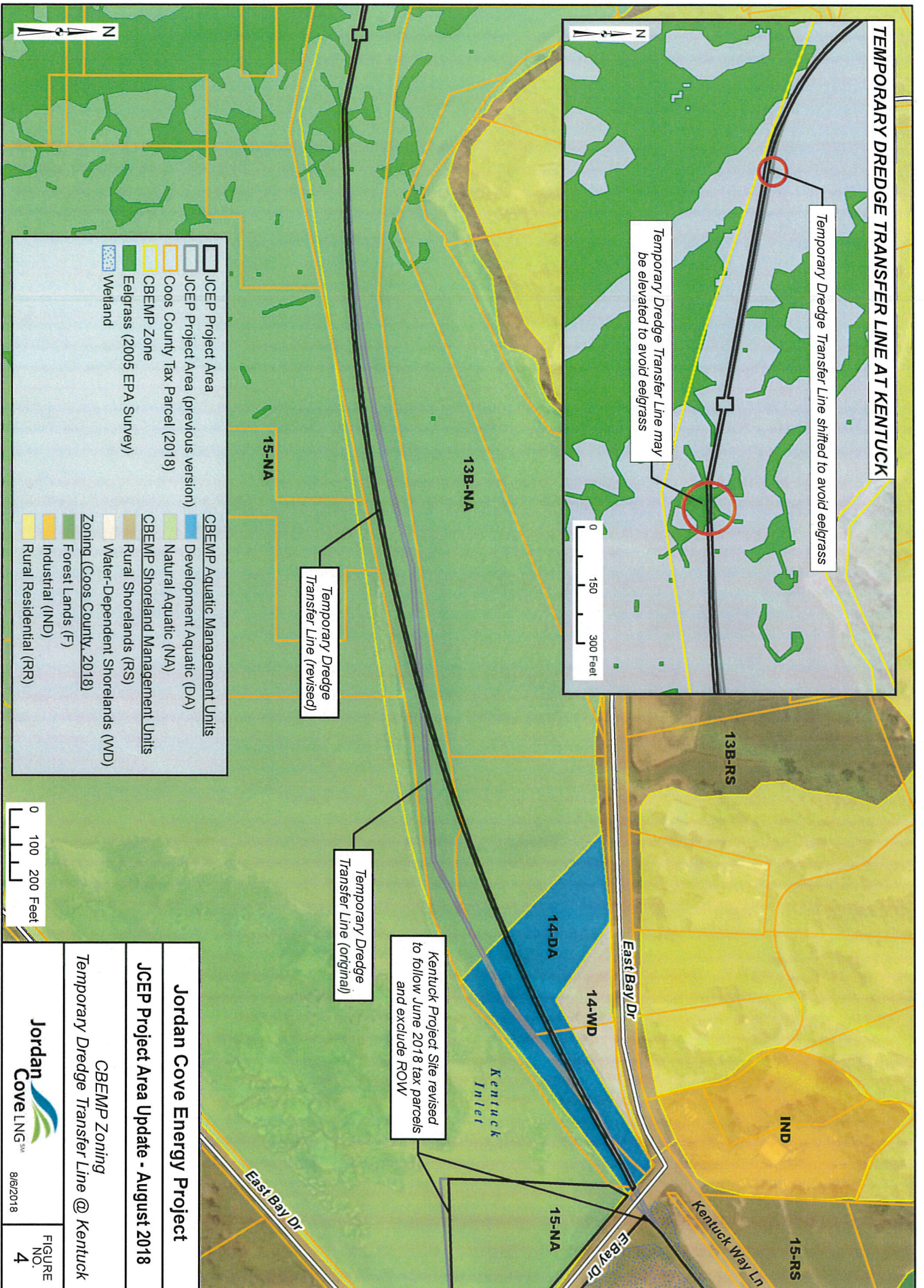
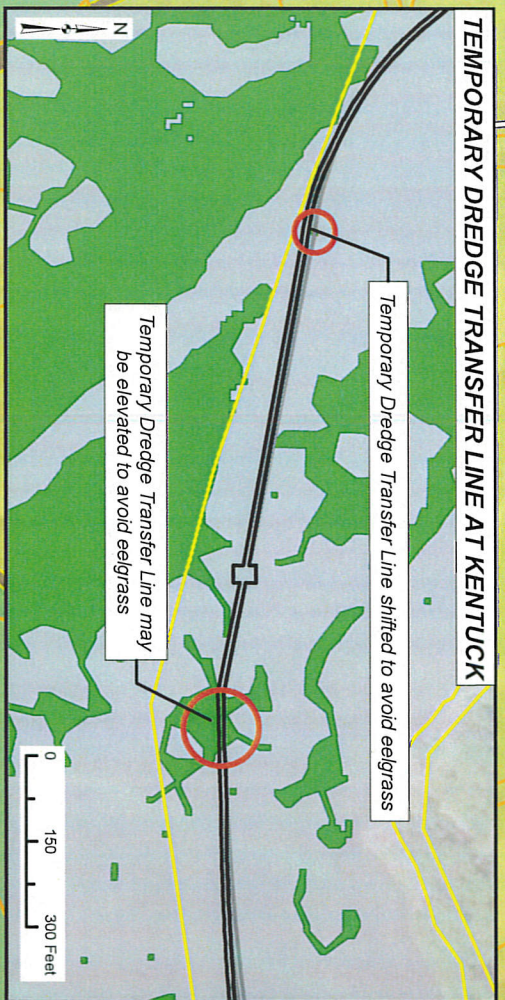


Exhibit 8
Page 2 of 4

<p>Jordan Cove Energy Project</p> <p>JCEP Project Area Update - August 2018</p> <p>CBEMP Zoning</p> <p>Temporary Dredge Transfer Line @ APCO</p>		<p>FIGURE NO. 3</p>
<p>Jordan Cove LNG</p> <p>8/6/2018</p>		



Jordan Cove Energy Project	
JCEP Project Area Update - August 2018	
CBEMP Zoning	
Temporary Dredge Transfer Line @ Kentucky	
Jordan Cove LNG	FIGURE NO. 4
8/6/2018	

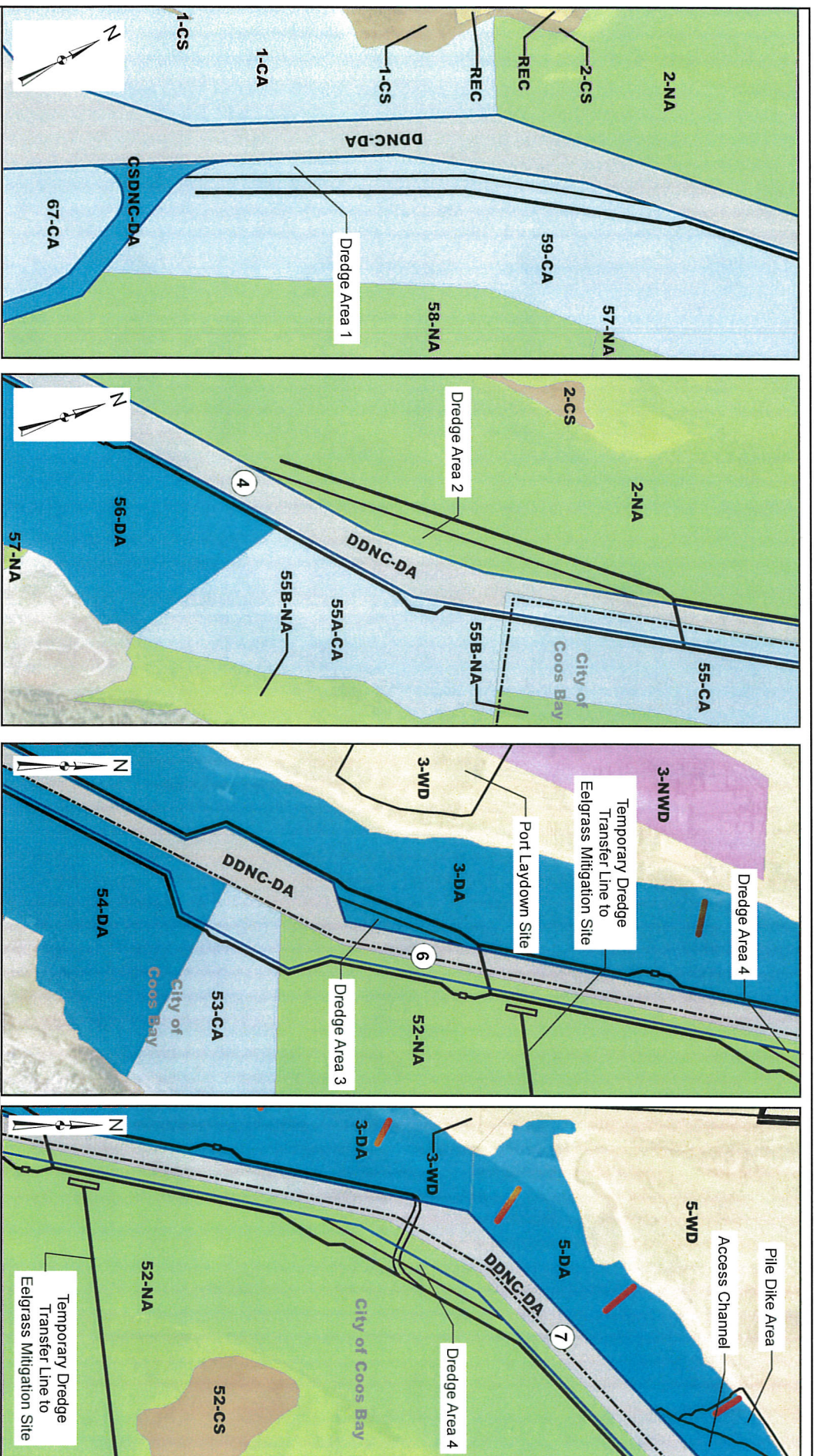


Exhibit 8
Page 4 of 4

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

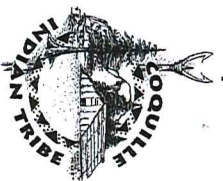


**Mark Ingersoll, Tribal Council Chairman
CONFEDERATED TRIBES OF COOS,
LOWER UMPQUA AND SIUSLAW INDIANS**

DATE

COOS BAY ESTUARY
MANAGEMENT PLAN

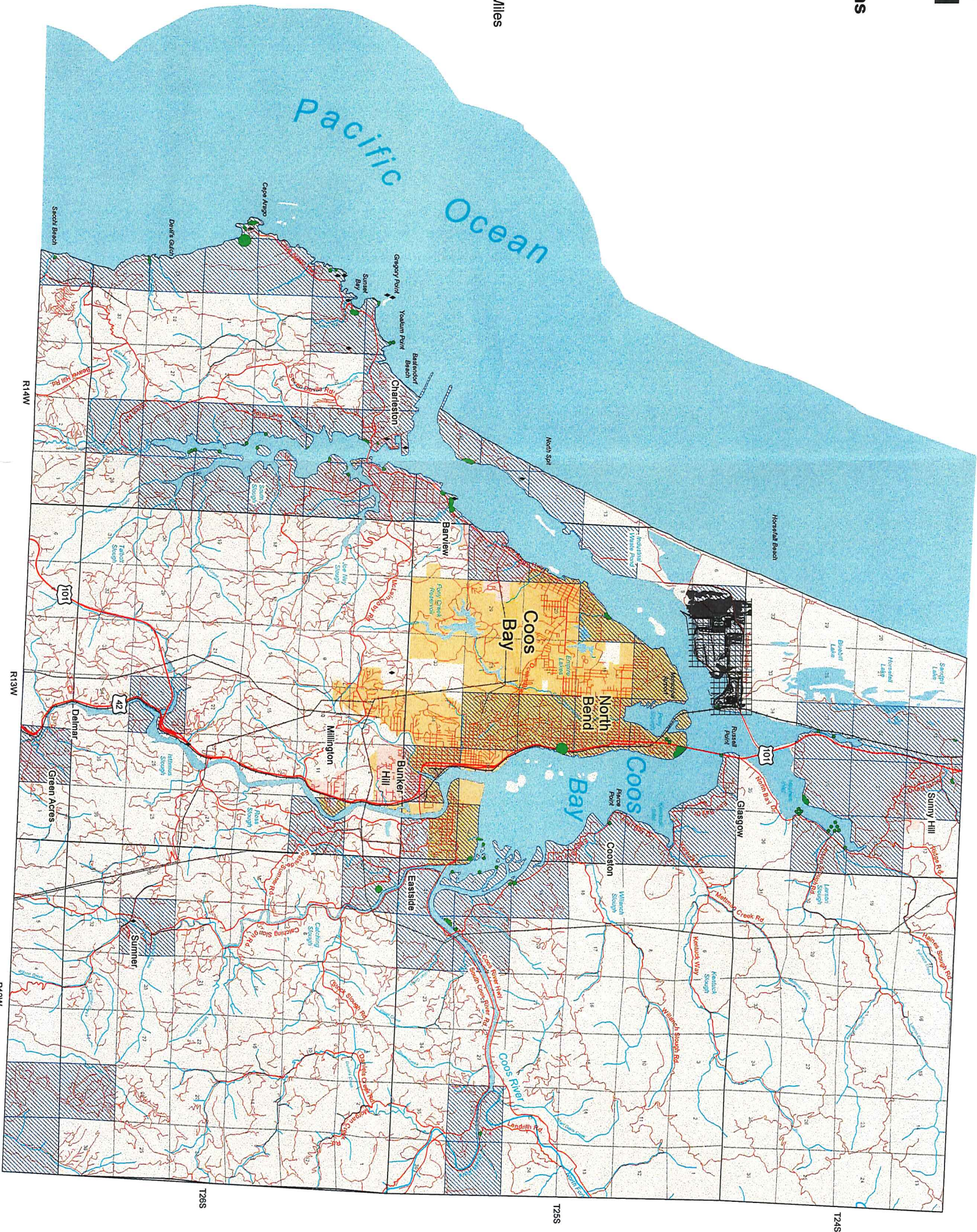
Goal 5 Element
Historical, Botanical,
Geological & Archaeological Locations
2002



- Roads
- County Roads
- Highway
- Railroads
- Powerlines
- Streams & Tributaries
- Rivers
- Historical, Botanical, & Geological Resources
- Archaeological Sites
- Areas of Archaeological Concern
- Unincorporated Communities
- Urban Growth Boundaries
- Ocean, Estuaries, & Lakes
- Sections*
- Townships*

*Public Land Survey System

Map Product Created by: Coquille Indian Tribe Cultural Resource and GIS Program, in cooperation with the Confederated Coos Tribes and Coos County Planning Department. Confidential: Not for public use, do not copy.
© Coquille Indian Tribe, 2002



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.

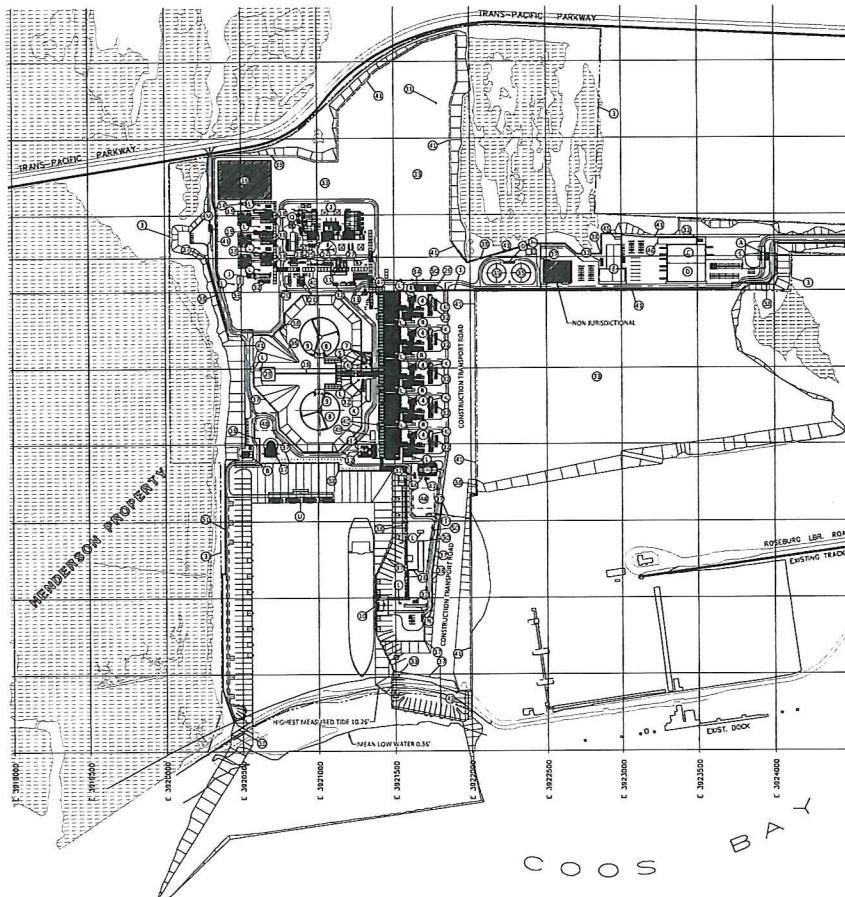


**for Jordan Cove Energy Project, L.P.
and Pacific Connector Gas Pipeline, LP**

DATE

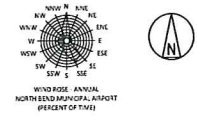
**Mark Ingersoll, Tribal Council Chairman
CONFEDERATED TRIBES OF COOS,
LOWER UMPQUA AND SIUSLAW INDIANS**

DATE



ITEM	FACILITIES LEGEND
1	FEED SEAL HEADER
2	END CONDUIT DRAIN TRAIL
3	PROPERTY BOUNDARY
4	UNGS LUBRICATOR TRAILER ST. THROUGH YS
5	UNGS EXHAUSTION (WITH ENDS)
6	UNGS FLASH DRAIN
7	UNGS BLASTING PUMPS (WITH SHELTER)
8	UNGS STORAGE TANK
9	UNGS TANK PUMPS
10	UNGS LANDING PLATFORM
11	REFUGIANT MAKE-UP
12	SHIP AND COAST GUARD (WITH D-FLYER)
13	COLD FLAME FOLDER
14	MULTI-USE GROUND (LARGE NO. DIRM)
15	NOT USED
16	UNGS TRAILER (GAS AND FLAME)
17	ENGULGED GROUND FLAME - MARINE
18	SHIP AUXILIARY POWER DIE
19	SHIP AUXILIARY POWER DIE CONTROL ENCLOSURE
20	AUXILIARY BOILER
21	ELEVATOR (18' x 10' PUMPS)
22	NOT USED
23	PLANT / FUEL BURNER & PACKAGES
24	WIND TURBINE GENERATOR PACKAGE
25	LIQUID AND STORAGE / VAPORIZATION
26	ARMORING STORAGE TANKS AND PUMPS
27	ARMORING STORAGE
28	UNDERGROUND COLLECTOR
29	PROCESS AREA LING BOUNDARY BASIN
30	MARINE AREA LING BOUNDARY BASIN
31	FEED FILLER BOUNDARY BASIN
32	FRANDON WAYS
33	CONSTRUCTION LING BOUNDARY AREA
34	DRILL STORAGE
35	TANK WATER STORAGE TANKS
36	UNGS TANK ACCESS ROAD
37	PLANT SECURITY FENCE
38	PERIMETER WALL
39	BACKUP GENERATOR
40	PERIMETER
41	IMPERMEABLE VAPOR BARRIER
42	POSTHOLE TANK
43	CONST. MARINE OFF-LOADING FACILITIES AREA A (CONST. MAR)
44	DEMYN WATER STORAGE TANK
45	WASTEWATER TREATMENT PACKAGE PLANT
46	LANDFILL AREA
47	DUMP CONDUIT
48	BURIED STORM WATER INFILTRATION CHAMBER
49	EDS AND ENCLOSURE
50	PERMEABLE VAPOR BARRIER
51	TIN LAR WALL ELEVATION VAPOR BARRIER (SEE SHEET ON TRUNK)
52	HYDROLOGICAL WAST LOCATED WEST OF THE AREA
53	INDUSTRIAL WASTEWATER LAGOON

ITEM	FACILITIES LEGEND
A	MAIN GUARD HOUSE / SECURITY BUILDINGS
B	TOILET AND WASH BUILDINGS
C	PLANT WAREHOUSE
D	MAINTENANCE BUILDINGS
E	DRILLING BUILDINGS (INCLUDING CONTROL ROOM)
F	WATER TREATMENT BUILDINGS
G	FACILITY WASTEWATER PUMPS WITH BUILDINGS
H	LIQUEFIED GAS AND COMPRESSED GAS STORAGE
I	FACILITY ASBESTOS HOUSE ENCLOSURE
J	POWERHOUSE ENCLOSURE
K	POWERHOUSE ENCLOSURE
L	FACILITY VALVE HOUSE
M	SECONDARY ENTRANCE SECURITY GATE (TERMINAL GUARD BUILDING)
N	MAINTENANCE HOUSE ENCLOSURE
P	FIRE DEPARTMENT
Q	GC TRAIN 1 POWERHOUSE ENCLOSURE
R	GC TRAIN 2 POWERHOUSE ENCLOSURE
S	INSPECTION STATION SHELTER
T	MAINTENANCE AREA GUARD HOUSE
U	TOILET BUILDING

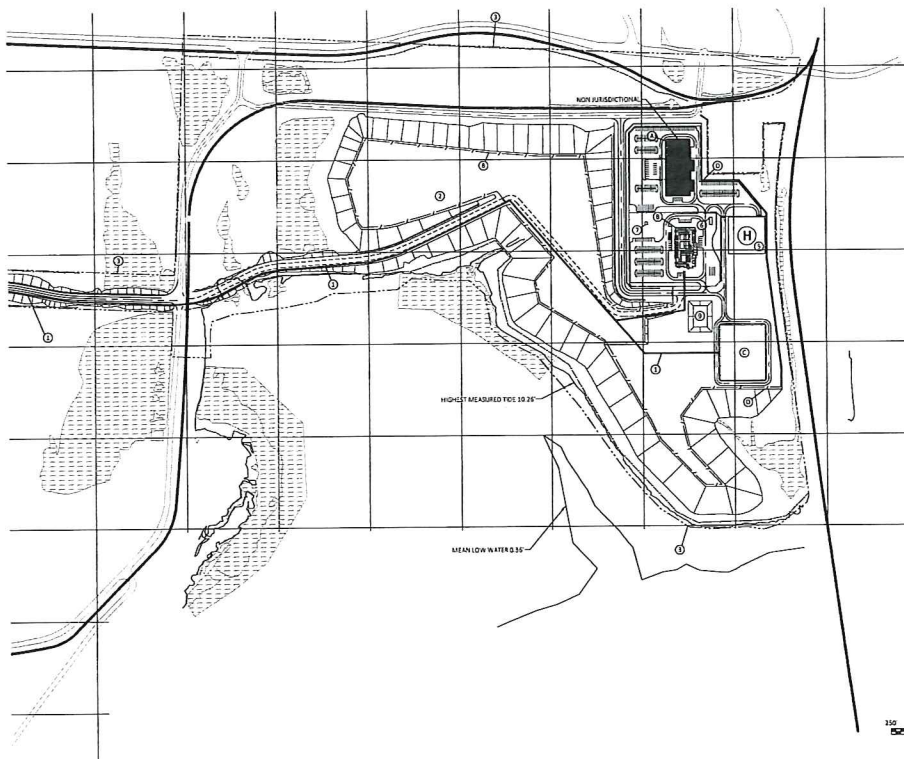


WIND ROSE - ANNUAL
NORTH BEND (PERCENT OF TIME)

LEGEND:
ELEVATIONS NOTED ARE NAVD83

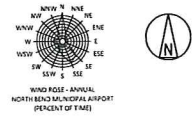
- SECURITY FENCE
- DEMARCATION FENCE
- PROPERTY BOUNDARY
- ASPHALT PAVED ROADS AND PARKING
- GRAVEL ROADS AND PARKING
- IMPERMEABLE VAPOR BARRIER WITH SECURITY
- PERMEABLE VAPOR BARRIER





ITEM	FACILITIES LEGEND
A	SOLIC BUILDING
B	ADMINISTRATIVE BUILDING
C	GAS METERING STATION
D	RETAINING WALL

ITEM	FACILITIES LEGEND
1	ACCESS AND UTILITY CORRIDOR (SEE NOTE 3)
2	TEMPORARY CONSTRUCTION FACILITIES
3	PROPERTY BOUNDARY
4	PERMITS/STATION/STATION
5	WATER TREATMENT PACKAGE PLANT
6	COMMUNICATIONS TOWER
7	PLANT SECURITY FENCE
8	VEGETATED INFILTRATION BASIN



- NOTES:
- ELEVATIONS NOTED ARE NAVD83.
 - FOR OVERALL PLOT PLAN, SEE DRAWING 150930-0000 F02300.
 - THE ACCESS AND UTILITY CORRIDOR CONTAINS THE FOLLOWING SUPPLEMENTAL LINES:
CORRIDOR WILL BE ROUTED ON ADJACENT LANDS.
FED GAS LINE
FIRE WATER SUPPLY TO ADMIN AND SOLIC BUILDINGS
POWER TO ADMIN BUILDING
IT AND SECURITY TO ADMIN AND SOLIC BUILDINGS
CONTROL CABLING FROM METERING STATION

LEGEND	
---	SECURITY FENCE
---	DEMARCATION FENCE
---	ASPHALT PAVED ROADS AND PARKING
---	GRAVEL ROADS AND PARKING

**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 OT 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.]

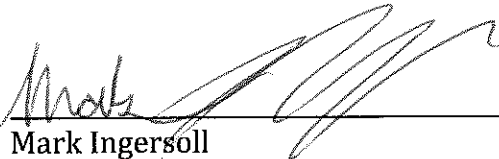
SIGNATORIES:



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

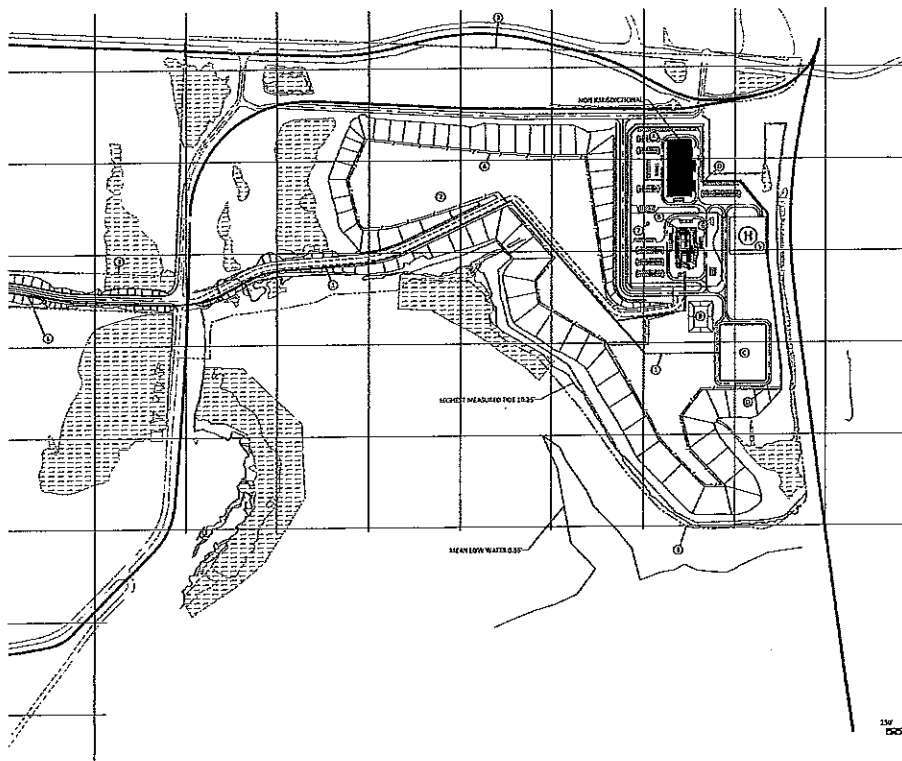
SIGNATORIES:



Mark Ingersoll
Tribal Council Chairman
Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians

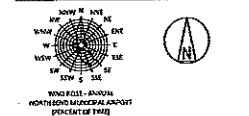
7-20-2018
Date

Exhibit A
Project Area



ITEM	FACILITIES LEGEND
A	ADJUTANT GENERAL'S OFFICE
B	ADJUTANT GENERAL'S OFFICE
C	ADJUTANT GENERAL'S OFFICE
D	ADJUTANT GENERAL'S OFFICE

ITEM	FACILITIES LEGEND
1	ADJUTANT GENERAL'S OFFICE (NOTE 1)
2	ADJUTANT GENERAL'S OFFICE (NOTE 2)
3	ADJUTANT GENERAL'S OFFICE (NOTE 3)
4	ADJUTANT GENERAL'S OFFICE (NOTE 4)
5	ADJUTANT GENERAL'S OFFICE (NOTE 5)
6	ADJUTANT GENERAL'S OFFICE (NOTE 6)
7	ADJUTANT GENERAL'S OFFICE (NOTE 7)
8	ADJUTANT GENERAL'S OFFICE (NOTE 8)
9	ADJUTANT GENERAL'S OFFICE (NOTE 9)
10	ADJUTANT GENERAL'S OFFICE (NOTE 10)



- NOTES:
1. ELEVATIONS SHOWN ARE BASED ON THE MEAN LOW WATER 0.50'.
 2. FOR THE PURPOSE OF THIS PLAN, THE MEAN LOW WATER 0.50' IS USED FOR THE PURPOSE OF THE PLAN.
 3. THE ACCESS AND UTILITY EXHAUSTION CONTAINING THE FOLLOWING: (NOTE 1) (NOTE 2) (NOTE 3) (NOTE 4) (NOTE 5) (NOTE 6) (NOTE 7) (NOTE 8) (NOTE 9) (NOTE 10)

LEGEND:	LEGEND:
ADJUTANT GENERAL'S OFFICE	ADJUTANT GENERAL'S OFFICE
ADJUTANT GENERAL'S OFFICE	ADJUTANT GENERAL'S OFFICE
ADJUTANT GENERAL'S OFFICE	ADJUTANT GENERAL'S OFFICE
ADJUTANT GENERAL'S OFFICE	ADJUTANT GENERAL'S OFFICE

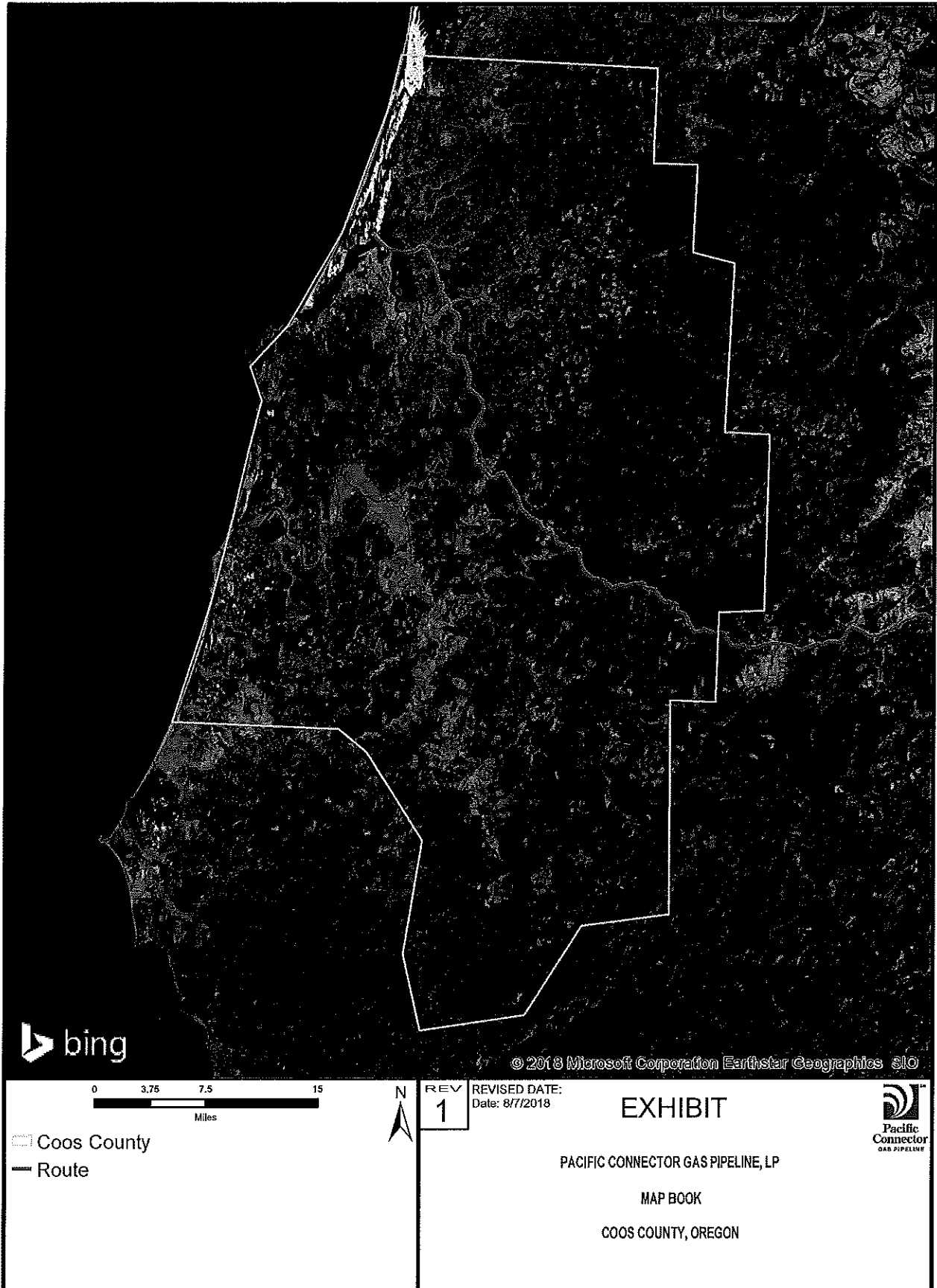


Exhibit "B"
Unanticipated Discovery Plan



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: jplueard@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

EXHIBIT C - COST RECOVERY AGREEMENT

CONFIDENTIAL

Exhibit D

PROJECT ACTIVITY NOTICE

Notice Provided to CTCLUSI

Name: _____ Email: _____

Position: _____ Date: _____

Description of Project Activity

Date(s) and Time(s) of Project Activity: _____

Type of Project Activity and Equipment: _____

Location of Project Activity: _____

Equipment needed –

a. Provided by Jordan Cove:

b. Provided by CTCLUSI:

Safety Requirements for Any Monitors:

Monitors shall always require the following equipment and clothing to be worn at all times on site:

- Closed toed shoes, long pants and long sleeves;
- a hard hat;
- a safety vest (brightly colored with reflectors); and
- protective eyewear.

Additional Requirements for this Project Activity and site:

Response Required from CTCLUSI by: _____

Exhibit E
Access Agreement

**SITE ACCESS AGREEMENT
BETWEEN JORDAN COVE ENERGY PROJECT, L.P.
AND THE CONFEDERATED TRIBES OF COOS, LOWER UMPQUA
AND SUISLAW INDIANS**

This SITE ACCESS AGREEMENT ("Agreement") is entered into on _____ ("Effective Date") by and between Jordan Cove Energy Project, L.P. ("Grantor") and _____ ("Grantee") (collectively referred to herein as the "Parties") for the purposes of granting a right to access certain lands owned and operated by Grantor.

WHEREAS, Grantor owns real property located in Coos County, Oregon, on which Grantor intends to construct and operate a liquefied natural gas terminal ("Grantor's Property").

WHEREAS, Grantee desires to access Grantor's Property to observe Project Activities to be performed by _____ ("_____") on behalf of Grantor on Grantor's Property;

WHEREAS, this Agreement governs the right of access to Grantor's Property by Grantee.

NOW THEREFORE, in consideration of the foregoing premises and the mutual covenants contained herein and subject to the terms and conditions set forth below, Grantor and Grantee agree as follows:

1. **Grantor's Right to Grant Access.** Grantor has the authority to grant access to Grantor's Property.
2. **Right of Access.** Subject to the terms of this Agreement, Grantor hereby grants access to Grantee for the sole purpose of observing the Surveys.
3. **Conditions of Use of Grantor's Property.**
 - i. At all times while on Grantor's Property, Grantee shall comply with the instructions and safety requirements of Grantor or its designee.
 - ii. Grantee agrees to use only established routes for vehicular travel on Grantor's Property, if such routes exist.
 - iii. Existing gates shall be used and shall remain closed and secured, unless otherwise authorized by Grantor.
 - iv. The use of alcohol, drugs or the carrying of firearms on Grantor's Property by Grantee is strictly prohibited at all times.

4. **Indemnity.** Grantee shall indemnify, defend and hold harmless, Grantor, its affiliates, successors, assigns, employees, officers, directors, shareholders, contractors and agents ("Grantor Indemnitees") from and against any and all claims, actions, losses, costs, and damages arising out of injury or death to persons, or damage to property caused by the negligence or misconduct of the Tribe and its officials, employees, agents, and subcontractors in the performance of obligations arising under this Agreement, provided: (i) JCEP 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. Grantor shall indemnify, defend and hold harmless, Grantee, its affiliates, successors, assigns, employees, officers, directors, shareholders, contractors and agents ("Grantee Indemnitees") from and against any and all claims, actions, losses, costs, and damages arising out of injury or death to persons, or damage to property caused by the negligence or misconduct of the Grantor and its officials, employees, agents, and subcontractors in the performance of obligations arising under this Agreement, provided the Tribe promptly notifies JCEP in writing of any such claim and JCEP shall have the exclusive right to control the defense. This indemnity provision survives termination of this Agreement.
5. **Termination.** This Agreement shall terminate upon completion of the Monitoring activities for which access has been granted or sooner if terminated in writing by either Party.
6. **Scope.** This Agreement constitutes the entire agreement between Grantor and Grantee regarding site access.
7. **Amendment.** This Agreement may not be changed, amended or modified except by instrument in writing signed by the Parties.
8. **Breach of this Agreement.** Grantee acknowledges and agrees that failure to adhere to any of the provisions of this Agreement by Grantee shall render this Agreement subject to cancellation by Grantor without further notice by Grantor. Failure of Grantor to cancel this Agreement upon discovery or notice of breach of the Agreement does not render the Agreement void nor does it negate Grantor's right to cancel the Agreement in the event of subsequent breaches by Grantee Personnel.
9. **Execution.** This Agreement may be executed in counterparts, and each counterpart shall for all purposes be an original, and all such counterparts shall together constitute one and the same Agreement.

[Signature page follows.]

IN WITNESS THEREOF, the parties hereto have caused this Agreement to be duly executed by their duly authorized officers, in accordance with their duly respective laws.

GRANTOR

JORDAN COVE ENERGY PROJECT, LP
by its General Partner, Jordan Cove Energy Project, L.L.C.

Signature Date: _____

Name (Print)

Title

GRANTEE

[NAME]

Signature Date: _____

Title



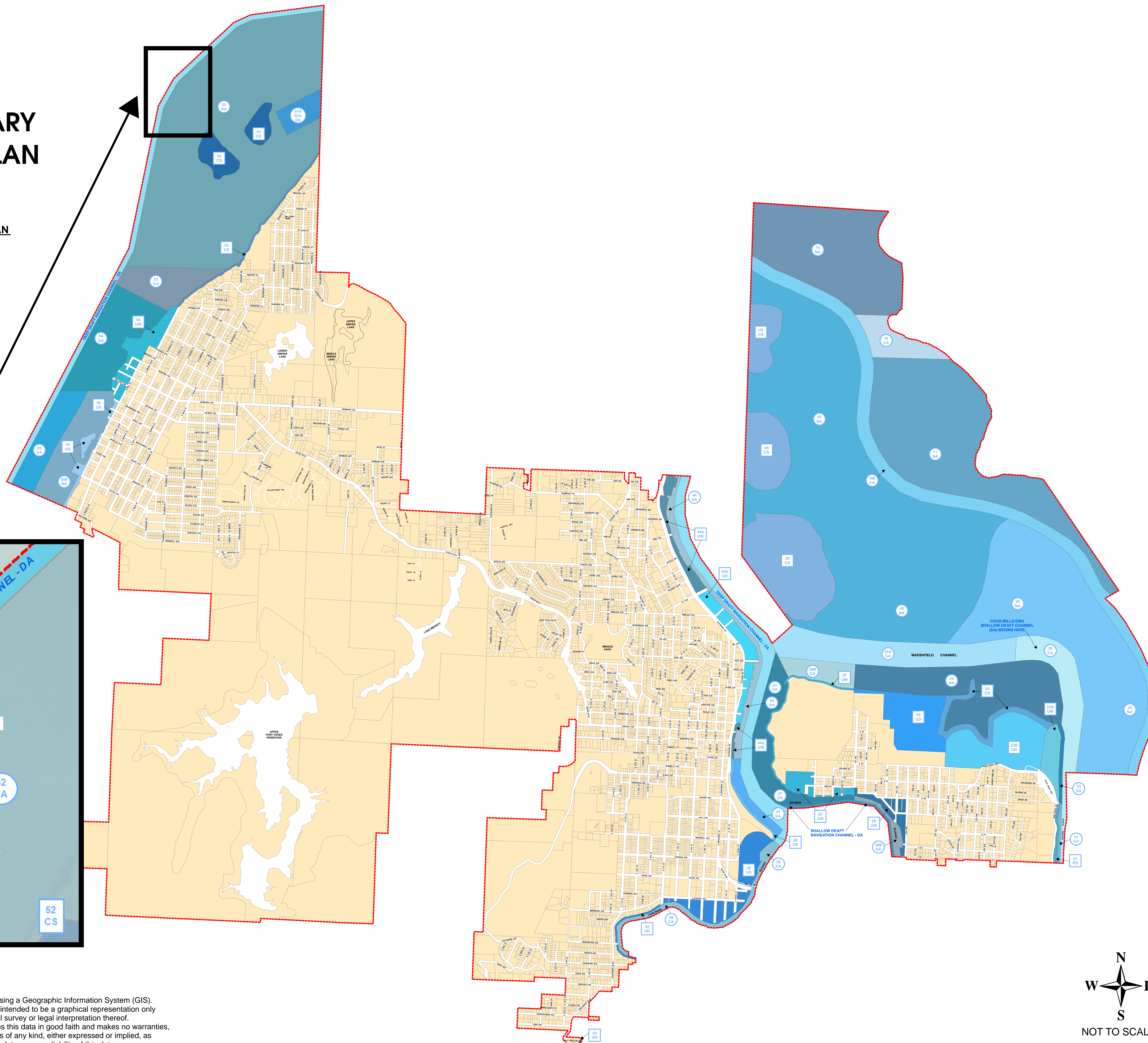
LEGEND

COOS BAY ESTUARY MANAGEMENT PLAN

53 CS SHORELAND OR UPLAND UNIT DESIGNATION

53
CA AQUATIC UNIT DESIGNATION

CITY LIMITS

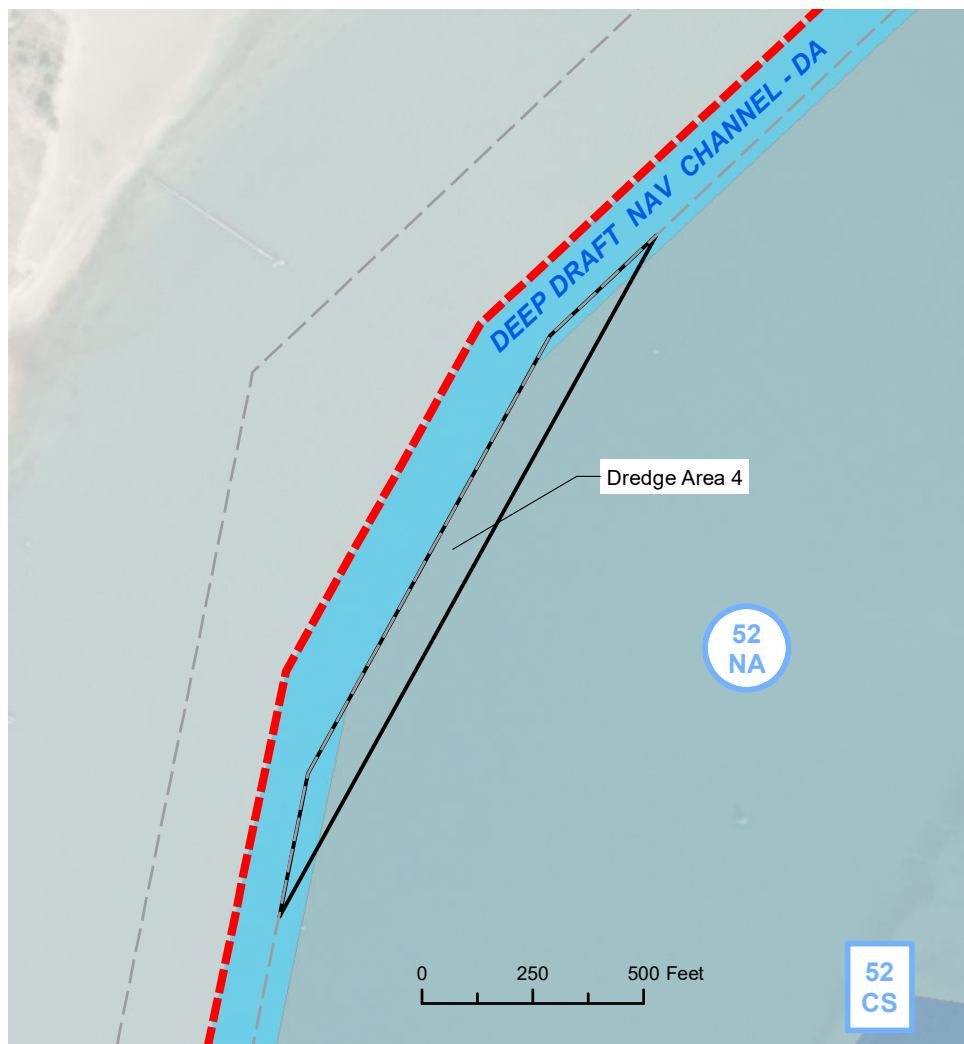


Disclaimer:

This document is produced using a Geographic Information System (GIS). The data contained herein is intended to be a graphical representation only and is by no means an official survey or legal interpretation thereof. The City of Coos Bay provides this data in good faith and makes no warranties, guarantees or representations of any kind, either expressed or implied, as to the content, accuracy, completeness or reliability of this data.

REVISÉD 06/20/13





Legend



CBEMP Aquatic Management Units

- Development Aquatic
- Natural Aquatic (NA)
- Conservation Shorelands (CS)

- NRI Dredge Area 4
- Federal Navigation Channel
- City Limits

Data Source: City of Coos Bay, Feb 2019

Jordan Cove Energy Project

Land Use Permit Application

*City of Coos Bay CBEMP Zoning
Navigational Reliability Improvement (NRI)
Dredge Area 4*



2/13/2019

FIGURE
NO.
1



0 0.05 0.1 Miles

Legend

CBEMP Aquatic Management Units

- Development Aquatic
- Natural Aquatic
- Conservation Shorelands (CS)

- NRI Dredge Area
- Federal Navigation Channel
- City Limits

Data Source: City of Coos Bay, Feb 2019

Jordan Cove Energy Project

Land Use Permit Application

*City of Coos Bay CBEMP Zoning
Navigational Reliability Improvement (NRI)
Dredge Area 4*



2/8/2019

FIGURE NO.
1

ATTACHMENT C



Jordan Cove LNG
111 SW 5th Avenue, Suite 1100
Portland OR 97204
T 971.940.7800

www.jordancovelng.com

September 19, 2019

Rodger Craddock
City of Coos Bay
500 Central Avenue
Coos Bay OR 97420

Re: City of Coos Bay

Dear Rodger:

Please accept this request from the applicant, Jordan Cove Energy Project ("Applicant" or "JCEP"), for the Navigation Reliability Improvement ("NRI") Application pending before the City of Coos Bay Council to amend the date for submittal of Applicant's final written argument and the date for Council deliberation and final action, which were established by the Council at the public hearing on August 27th as November 15 and January 21, respectfully. Please note that we are not requesting that the current open record periods for the submittal of additional information by interested parties be modified but instead request that these public comment timelines remain as set by the Council on August 27, 2019. The reason for this request is addressed below in greater detail.

In order to coordinate local and state permitting requirements, JCEP is requesting the processing for the land use permitting be issued 30 days prior to January 31, 2020, i.e. by January 1, 2020. This request reflects the fact that the Oregon Department of State Lands ("DSL") granted JCEP an extension on the removal-fill application until January 31, 2020 to complete their pending review, and the agency must receive updated Land Use Compatibility Statements ("LUCS") indicating that all Post Acknowledgment Plan Amendments ("PAPA") have been issued and approved by local jurisdictions. The pending NRI Application is such a PAPA, which means that JCEP must provide all necessary final local land use authorizations to DSL sufficiently in advance of the January 31 date to allow for agency review. The issuance of final land use authorizations pending before the City by no later than January 1, 2020 will allow JCEP time to meet these obligations to DSL.

The current timeline set for review by the Council is upon closure of the evidentiary record is nearly three months, which our experience suggests is an extraordinary amount of time compared to common pattern and practice. While, again, we do not seek to reduce the opportunity for additional public input, a more typical time line from the close of the record would be 5-6 weeks for Council deliberation and final action. This modified timeline would afford LCOG sufficient time to complete a review of the record and submission of final staff recommendation to Council, and provides the additional

advantage of keeping the issues, questions, and concerns fresh for everyone. The timeline also coordinates local, state, and federal permitting processes, when, as noted, state agencies, for example, are waiting for JCEP's updated LUCS. For the above reasons, we request that the Council consider (1) revising the Applicant's final written argument due date from November 15th to November 7th, and (2) modify the dates for Council deliberation and final action from January 21 to December 10 and December 17.

Thank you in advance for your consideration and attention to this important matter.

Very truly yours,



Tasha Cadotte
Manager, Community Affairs & Media
Pembina Pipeline Corporation

October 14, 2019

Rodger Craddock
City of Coos Bay
500 Central Avenue
Coos Bay OR 97420

Re: City of Coos Bay

Dear Rodger:

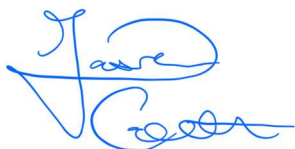
Please accept this letter and revised request from Jordan Cove Energy Project ("Applicant" or "JCEP"), for the Navigation Reliability Improvement ("NRI") Application pending before the City of Coos Bay Council ("Council") to amend the date for submittal of Applicant's final written argument and the date for Council deliberation and final action, which were established by Council at the public hearing on August 27 as November 15 and January 21, respectively. Again please note the Applicant is not requesting that the current open record periods for the submittal of information by interested parties be modified. The Applicant is merely requesting that time for JCEP's final written argument be reduced and the date for Council deliberation be modified.

Council is in receipt of a letter from the Department of State Lands ("Department") Director Vicki Walker dated October 7 which states JCEP's permitting extension deadline of January 31. Director Walker explains that the Department requires time to make a decision and draft findings in support of the decision. To that end, the Department has requested receipt of JCEP's affirmative Land Use Compatibility Statements 30 days prior to January 31, 2020. JCEP requires the NRI application review to be complete in order for JCEP to submit an affirmative Land Use Compatibility Statement to the Department.

JCEP acknowledges that Council may have other obligations and time constraints, including potential overlapping review of JCEP's Eelgrass Mitigation application which is currently pending before the City of Coos Bay Planning Commission. In JCEP's September 19 letter to the City of Coos Bay JCEP requested a modified Council deliberation date of January 21 to December 10 and December 17, for tentative and final action, respectively. However, if this modification is untenable for Council JCEP respectfully requests that Council consider modifying the date for deliberation and final action from January 21 to January 7.

Thank you in advance for consideration and attention to this important matter.

Very truly yours,

A handwritten signature in blue ink, appearing to read 'Tasha Cadotte', with a stylized, flowing script.

Tasha Cadotte
Manager, Community Affairs & Media
Pembina Pipeline Corporation

ATTACHMENT D

received about 42,000 public comments electronically and by mail.

This Evaluation and Findings Report does not include responses to these public comments because DEQ is denying certification JCEP. Therefore, a response to public comments has not been prepared.

1.4 WQC Decision

DEQ has prepared this Evaluation and Findings Report supporting the attached 401 Water Quality Certification decision (the DEQ WQC Decision) for the Corps' issuance of CWA Section 404 and RHA Section 10 permits pursuant to Section 401 of the Clean Water Act (33 U.S.C. Section 1431), Oregon Revised Statutes (ORS) chapter 468B) and OAR 340 Division 48, other water quality related requirements of state law, and in consideration of all public comments received relevant to water quality and beneficial use concerns. As described in the DEQ WQC Decision, DEQ denies the requested certification because it does not have a reasonable assurance that the construction and operation of the Project would comply with applicable state water quality standards. DEQ's decision, however, is made without prejudice. Jordan Cove may reapply for 401 WQC for the Project, and DEQ would consider additional information that is responsive to the bases for denial in this decision.

DEQ notes that it has not received an application for WQC for issuance of a FERC permit or license associated with the Project. DEQ did receive information relevant to JCEP's applications to the Corps for Section 404/10 permits on February 6, 2018; May 21, 2018; November 21, 2018; March 19, 2019 and April 30, 2019. However, to the extent there was any ambiguity as to the nature of the materials received by DEQ on February 6, 2018 (specifically, whether that submittal constituted a separate request to DEQ for WQC for any FERC authorization or was a supplement to materials for the Corps' review) JCEP confirmed in correspondence on December 7, 2018, that the February 6, 2018 materials were supplements to its application to the Corps for Section 404 and Section 10 permits. Additionally, contrary to JCEP's assertion in its December 7, 2018, letter to DEQ that JCEP had submitted to DEQ a 401 WQC application on October 22, 2017, no record supports this assertion. The only materials DEQ received regarding the Project in October of 2017 were emailed notices from the Corps on October 23, 2017 and October 24, 2017 of the Corps' receipt of Section 404/10 permit application materials from JCEP. As described above, the Corps deemed that application incomplete (33 CFR 325.2(a)). As a result, in accordance with DEQ's rule (OAR 340-048-0032(1)) DEQ did not receive a 401 WQC application from JCEP for the Corps' permits until the Corps determined JCEP's application constituted a valid request for certification and issued the Public Notice on May 22, 2018, pursuant to Corps regulations. See 33 CFR 325.2(b)(1)(ii). In the event that JCEP resubmits an application to DEQ for certification, DEQ requests that JCEP expressly state whether the application is for certification for pending FERC authorizations under the Natural Gas Act as well as the pending Corps Section 404/10 permits.³

2.0 Summary of Application

Section 401(a) of the Clean Water Act, 33 U.S.C. § 1341(a), requires an applicant for "a Federal license or permit to conduct any activity which may result in a discharge into the navigable waters" to provide the federal licensing or permitting agency a certification from the relevant state that the discharge would comply with applicable provisions of sections 1311, 1312, 1313, 1316, and 1317 of the Clean Water Act.

³ At this time, DEQ is not aware of any reason why review of a new certification request would require additional time as a result of including both the Corps permits and the proposed FERC authorizations.

authorize actions to exceed numeric turbidity limits provided the applicant employ all practicable turbidity control techniques. On September 7, 2018, DEQ requested additional information related to JCEP's proposed dredging methods and measures to avoid or minimize turbidity. Specifically, DEQ requested a Dredging Pollution Control Plan. In particular, the request was for a "description of water pollution controls (operational controls, structural such as floating turbidity curtain etc.) that JCEP would use in dredging and transporting dredged material".

JCEP has not submitted a Dredging Pollution Prevention Plan. DEQ finds JCEP's proposed activities would cause turbidity to increase in excess of numeric limits, and absent any Dredging Pollution Prevention Plan, JCEP has failed to demonstrate its methods include sufficient controls to prevent exceedance of turbidity standard in OAR 340-041-0036.

6.9.3 DEQ Findings: Turbidity

DEQ's preceding evaluation of Project results in the following findings related to OAR 340-041-0036:

1. JCEP's proposed activities do not employ the highest and best treatment to control turbid discharges by failing to:
 - a. Demonstrate the deployment of effective BMPs during pipeline construction and operation.
 - b. Demonstrate the use of effective BMPs during road maintenance.
 - c. Provide a site-specific waterbody crossing and restoration plans to minimize turbid discharges and restore stream form and function supporting water quality.
2. JCEP's proposed activities do not employ methods to construct and maintain roads in a manner to prevent turbid discharges to public waters by minimizing erosion of cut bank, fills, and roads.
3. JCEP's proposed activities do not employ methods to control turbid discharges generated by organic or inorganic debris from landslides during pipeline construction, pipeline operation, waterbody construction planning, and road maintenance, and road construction.
4. JCEP has not provided site-specific waterbody crossing and restoration plans that sufficiently describe required methods to avoid, minimize, and mitigate for turbidity. DEQ relies on the plans and information described above to confirm the project has considered the highest and best treatment techniques for minimizing turbidity during construction activities. Absent these plans and information, DEQ does not have a reasonable assurance that the JCEP's proposed activities will comply with the turbidity water quality standard. OAR 340-048-0020(3).
5. JCEP's proposed activity would likely violate the Turbidity water quality standard for the following reasons:
 - a. JCEP has not provide an NDPDES 1200-C required Erosion and Sediment Control Plan demonstrating sediment and erosion controls with installation techniques have been properly deployed during the construction of the Terminal and Off-Site Project Areas to control turbidity from construction activities.
 - b. JCEP proposes the disposal of dredged material producing turbid discharges from the leachate (i.e., decant flows), from this disposed material, and from exposed soils without demonstrating the deployment of site-specific controls to prevent exceedance of turbidity standard in OAR 340-041-0036.
6. JCEP's modeling conducted confirms that dredging at the Navigational Reliability Improvement locations, the Slip, and Access Channel would cause turbidity levels to increase above allowable numeric limits.
7. JCEP did not provide a Dredging Pollution Prevention Plan that sufficiently demonstrates JCEP considered and proposed all practicable turbidity control techniques to avoid, minimize, and mitigate these effects as required by OAR 340-041-0036.

Based upon these findings, violations of the turbidity water quality standard are likely to occur and DEQ concludes that it lacks a reasonable assurance that the proposed activities will be conducted in a manner that will not violate the Turbidity water quality standard.

6.10 Antidegradation

Attachment E

Potential Impact of Jordan Cove LNG Terminal construction on the Nursery Habitat of the Dungeness crab.

Salem, Oregon, January 14, 2019

Sylvia Yamada Ph.D.

yamadas@science.oregonstate.edu

The **Dungeness crab** (*Cancer magister*) supports an important commercial and sport fishery from Alaska to California. Total annual landings in recent years exceeded 25,000 tons (55 million pounds) (FAO statistics, 2012). In Oregon, the 2014 Dungeness fishing season yielded 14.4 million pounds, \$50 million to crabbers and an estimated \$100 million to the Oregon economy (Oregon Dungeness Crab Commission in Fisherman's News On line). *The Dungeness fishery is the most valuable commercial fishery in Oregon (Rasmusen 2013).*

The life cycle of Dungeness crab is complex, depending on both estuarine and near-shore habitats. Typically, mating occurs in shallow water, and females migrate offshore to brood and hatch their eggs. The early larval stages feed and rear in the near-shore water column, after which the final larval stage rides tidal currents back to shore and settles out in shallow estuarine habitats. The final larval stage molts into a ~5 -7 mm wide first crab stage. *The highest densities of juvenile Dungeness crabs are found in estuaries, which provide warm water, high biological productivity and protection from predators. Sand substrate and eelgrass beds are preferred habitat for these young crabs, which bury in the sand and hide in the eelgrass to escape predators.* Size measurements of crabs trapped at Russell Point in Coos Bay (below the Highway 101 McCullough Bridge) show that Dungeness crabs in their first two years of life (100 mm carapace width and smaller) are extremely abundant in the mid-to low intertidal areas such as pools and eelgrass beds (Figure 1).

In my research documenting the status of the non-native European Green crab in Coos Bay, I encounter young Dungeness crabs in all my study sites. I selected a sub-set of my sites closest to the proposed Jordan Cove Energy Project: the north and south sides of Trans Pacific Lane and the beach adjacent to the Roseburg Forest Product watchman's booth. The results from over 600 trap-days, show that young Dungeness crabs are consistently abundant from 2002 to 2014 at all sites, with an average catch of 15 per trap (Table 1). *These trapping results confirm the findings by Emmett and Durkin (1985) that estuaries are important nursery habitats for Dungeness crabs. This fact has to be kept in mind when a trench is dug in Haynes Inlet, the Trans Pacific Parkway is to be expanded and an upland area is cut out to create a berth for ocean-going vessels. Not only will the turbidity during the construction phase be of concern to the ecological community, the on-going dredging to maintain the berth and shipping channels will continue to be a disturbance to the ecosystem. It will result in habitat loss for native species, including the valuable Dungeness crab. In one study between 45 to 85 % of the Dungeness crabs died during a simulated dredging operation (Chang and Levings, 1978).*

Sylvia Yamada is a marine ecologist who has studied native crabs and the invasive European green crab in Oregon and Washington for over 20 years.

References:

Chang, B., Levings, C. 1978. Effects of burial on the heart cockle *Clinocardium nuttallii* and the Dungeness crab *Cancer magister*. *Estuarine, Coastal and Shelf Science*. 7, 4009-412.

Emmett, R.L. and Durkin, J.T. 1985. The Columbia River Estuary: An Important Nursery for Dungeness Crabs, *Cancer magister*. *Marine Fisheries Review*. 47(3), 21-25.

Fisherman's News On line Sept 24, 2014 <http://fnonlinenews.blogspot.com/2014/09/oregons-crabbers-riding-market-value.html>

Rasmuson, L.K. 2013. The Biology, Ecology and Fishery of the Dungeness crab, *Cancer magister*. In Michael Lesser, editor: *Advances in Marine Biology*, Vol 65, Burlington: Academic Press, pp. 95-148. ISBN: 978-0-12-410498-3 Elsevier Ltd. Academic Press.

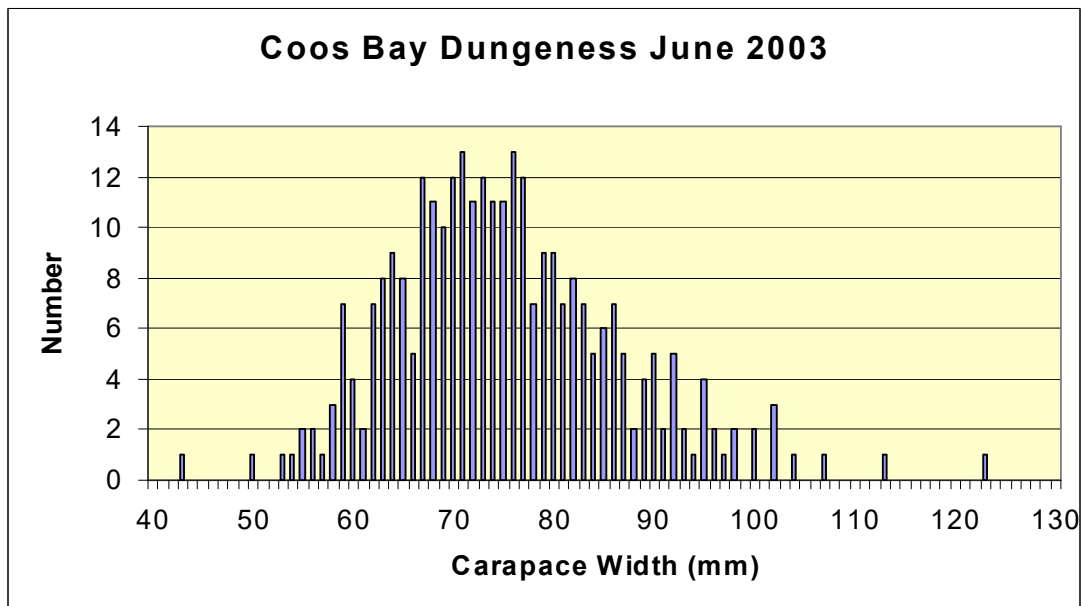


Figure 1. Size frequency distribution of Dungeness crabs trapped in pools and eelgrass at Russell Point, below the Highway 101 McCullough Bridge, in June 2003. Adult crabs are greater than 100 mm in carapace width. It is estimated that the first 2 year classes are represented.

Table 1. Trapping Data for study sites along Trans Pacific Lane and Roseburg Forest Product causeway from 2002-2014.

	Date	Trap Type	Zone	European green crab <i>Carcinus maenas</i>	Hairy shore crab <i>Hemigrapsus oregonensis</i>	Purple shore crab <i>Hemigrapsus nudus</i>	Dungeness crab <i>Cancer magister</i>	<i>Cancer magister</i> (Recruits <50mm)	Red rock crab <i>Cancer productus</i>	stag-horn sculpin	# Traps
Roseburg Lumber	6/25/2002	Fish	Site	0	0	0	45	0.5	0.1	0	10
Roseburg Lumber	6/16/2003	Fish	low	0	0	0	12.2	0	0.7	1.5	10
TransPacific S	7/10/2005	Fish	low	0	0	0	6.14	1.14	0	1.86	7
North	7/10/2005	Fish	low	0	0	0	0	5.7	0	1.1	10
South	3/25/2005	minnow	Mid	0	0	0	0	0	0	2.4	10
North	7/10/2005	minnow	mid	0	0.2	0	0	0.6	0	0.8	5
South	7/10/2005	minnow	mid	0	0	0	0	0.4	0	0.6	5
Trans-Pacific Bridge	9/1/2005	Fish	Low	0	0	0	6.6	0	3	1	5
	9/1/2005	Minnow	high	0	0	0	0.2	0	0	0.4	4
Trans-Pacific Ln.	6/8/2006	Fish	Low	0	0	0	4.9	0	0	2.6	10
	9/13/2006	Fish		0	0.4	0	0.2	0	0	0.2	5
	6/8/2006	Minnow	high	0	0	0	0.7	0	0	2.3	10
Trans Pacific Br.	9/13/2006	Minnow		0.2	0	0	0	0	0	0.2	5
TransPacific Ln. N	5/25/2007	Fish	Mid	0.5	0.2	0	1	0.1	0	0.8	10
	7/14/2007	Fish		0.4	1.47	0	23.53	0	0	0.2	15
	9/26/2007	Fish		0	0	0	4.75	0	0	0	8
TransPacific Ln. S	5/25/2007	Fish	Mid	0.09	0	0	0.82	0	0	0.36	11
	7/14/2007	Fish		0.27	0.07	0	9	0	0.07	1	15
	9/26/2007	Fish		0	0	0	2.71	0	0	0.14	7
TransPacific Bridge	5/25/2007	Fish	Mid	0	0	0	1.33	0	0	0	6
	9/25/2007	minnow	high	0	0	0	1.6	0	0	0.4	5
TransPacific Ln. N	6/18/2008	Fish	Mid	0.1	0.2	0	7.4	0	0	7.8	10
	6/19/2008	Fish		0	0	0	1.75	0	0	3.25	8
	9/18/2008	Fish		0	0.1	0	23.4	0	0	0.7	10
TransPacific Ln. S	6/18/2008	Fish	Mid	0.5	0	0	17.2	0	0	2.2	10
	6/19/2008	Fish		0.37	0	0	17.63	0	0	1.37	8
	9/18/2008	Fish		0.1	0	0	22.6	0	0	0.3	10
TransPacific Ln. N	7/8/2009	Fish	Mid	0.13	0	0	9.88	0	0	0.38	8

[illegible]