The Applicant has not demonstrated compliance with this provision of state law. Because it appears as though the Coos County land use process will be the only land use approval process, Coos County must take into account the EFSC requirements in the local determination.

Finally, OAR 345-027-0020(12) (mandatory conditions in site certificates) provides:

(12) The certificate holder shall design, engineer and construct the facility to avoid dangers to human safety presented by seismic hazards affecting the site that are expected to result from all maximum probable seismic events. As used in this rule “seismic hazard” includes ground shaking, landslide, liquefaction, lateral spreading, tsunami inundation, fault displacement and subsidence.

The Applicant has not demonstrated compliance with this administrative rule.

Request to Leave Record Open

ORCA respectfully requests that the record remain open for another 14 days given the significance of the proposed project and the breadth of information related to the project. See ORS 197.763.

Sincerely,

[Signature]

Sean T. Malone
Attorney for Oregon Coast Alliance

cc: Oregon Coast Alliance

Exhibit # 2
Date
Please find attached comments prepared on behalf of Oregon Coast Alliance for the Jordan Cove Energy Project, File No. SP-12-02.

I also request that the record be left open for 14 additional days to allow for further submissions and comments. This request is also contained in the attached comments.

My billing address is below for the copying costs. I will also call the County Planning Department to confirm that the email was received, and that the attachments could be opened. I will request an email confirmation when I call, but I am reiterating that request here - please confirm that you have received the attachment and that you have been able to open the attachment.

If you have any questions, please do not hesitate to contact me at the number and email address below.

Thank you,

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August 20, 2013

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planning@co.coos.or.us

Re: ORCA Comments on Jordan Cove Energy Project on South Dunes Power Plant Project, File No. SP-12-02

On behalf of Oregon Coast Alliance (ORCA), please accept these comments on the Applicant Jordan Cove Energy Project, LLC’s (the applicant) proposed South Dunes Power Plant Project (Project).

The Project

The applicant proposes to construct and operate a 420-megawatt, nominal capacity, thermal combustion gas plant to provide power for the proposed Jordan Cove Liquefied Natural Gas export facility. The proposed plant would be located on the east side of Jordan Cove, North Spit of Coos Bay, and one mile north of the City of North Bend.

Cascadia Subduction Zone, Earthquakes, and Tsunamis

Of primary importance is the proposed Project’s location in an area of significant hazards. The site is located within the 500-Year Absolute Earthquake Shaking zone, calling for “very strong shaking, moderate damage”; within the Earthquake Ground Shaking Amplification zone at “very high” levels; within the liquefaction zone at “very high” levels; within the Special

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1 "Liquefaction occurs when vibrations or water pressure within a mass of soil cause the soil particles to lose contact with one another. As a result, the soil behaves like a liquid, has an inability to support weight and can flow down very gentle slopes. This condition is usually
Flood Hazard Area; and within the Tsunami zone. According to the Pacific Northwest Tsunami Evacuation Zones, the Project’s proposed location is within the local Cascadia earthquake and tsunami zone, as well as the distant earthquake and tsunami zone, raising the chances of inundation of the project site. Oregon Department of Geology and Mineral Industries (DOGAMI) issued Tsunami Inundation Maps for the Cascadia Subduction Zone. The Project is located in the area susceptible to ocean flooding. According to DOGAMI, the property would be inundated during a small, local earthquake (occurring on the Cascadia Subduction Zone) and a distant earthquake (occurring in the Alaska-Aleutian Subduction Zone). Despite this overwhelming evidence of ocean flooding, tsunamis, and earthquakes, the County’s Special Considerations Phenomenon 7 – Natural Hazards Map fails to even mention these hazards, even though the comprehensive plan provides that “Coos County shall regulate development in known areas potentially subject to natural disasters and hazards, so as to minimize possible risks to life and property.” There is no dispute that ocean flooding, tsunamis, and earthquakes are natural hazards. The County’s map simply fails to accomplish its intent or accurately reflect reality.

According to the Staff report, “Coos County considers natural disasters and hazards to include stream and ocean flooding, wind hazards, wind erosion and deposition, “critical streambank erosion, mass movement, (earthflow and slump topography), earthquakes and weak foundation soils.” Because Coos County did not recognize the risk of ocean flooding, tsunamis, and earthquakes, no “strategy was implemented by enacting special protective measures . . . designed to minimize risks to life[+] and property.” The staff report also acknowledges that “the county is responsible for identifying potential hazard areas, informing its citizens of risks associated with development in known hazard areas, and establishing a process involving expert opinion so as to provide appropriate safeguards against loss of life or property.” None of these responsibilities, enacted for the well-being of Coos County, will be satisfied because the special considerations maps does not reflect reality.

A tsunami is a series of ocean waves most often generated by disturbances of the sea floor during shallow, undersea earthquakes. A tsunami can be triggered by earthquakes around the Pacific Ocean including undersea earthquakes with epicenters located only tens of miles offshore the Oregon coast. Over the last century, wave heights of tsunamis in the Pacific Ocean have reached up to 13.5 m (45 ft) above the shoreline near the earthquake source. In a few cases, local conditions amplified the height of a tsunami to over 30 m (100 ft). Id. An earthquake on the Cascadia Subduction Zon3, a 960-km-long (600 mile) earthquake fault zone that sits off the Pacific Northwest coast, can create a Cascadia tsunami that will reach the Oregon coast within temporary and is most often caused by an earthquake vibrating water-saturated fill or unconsolidated soil.”

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2 Tsunami hazard maps were produced to help implement Senate Bill 379 (SB 379), which was passed by the 1995 regular session of the Oregon Legislature.
15 to 20 minutes. Massive earthquakes of magnitude 9 or greater than can last for several minutes have been generated on the fault zone. A destructive tsunami can follow moments later.

Since 1854, 21 tsunamis produced by earthquakes around the Pacific Ocean basin have reached the Oregon coast. Wave heights of four of these distant tsunamis reached 1-5 m (3-16 ft), causing damage to coastal communities and in one event, five deaths. Geologists predict a 10-14 percent chance that a Cascadia tsunami will be triggered by a shallow, undersea earthquake offshore Oregon in the next 50 years. The forecast comes from evidence for large but infrequent earthquakes and tsunamis that have occurred at the Oregon coast every 500 years, on average.

Almost 230,000 people from 11 nations were lost during the 2004 Indian Ocean tsunami, making it one of the deadliest natural disasters in human history. In 2011, the Tohoku Japan earthquake was a magnitude 9.0 subduction zone earthquake 80 miles off the coast of Japan. The earthquake triggered a devastating tsunami that inundated the northeast coast of Japan within minutes. The quake and tsunami had massive societal impacts: according to the National Police Agency of Japan, 15,845 were confirmed killed and another 3,380 are still missing; thousands more were injured. Over 1.1 million buildings were damaged or destroyed, including 6,751 school buildings and more than 300 hospitals. The tsunami created 24 million tons of waste debris. Economic losses were estimated at US $210 billion, excluding the subsequent nuclear accident.

An earthquake similar in force to the Tohoku earthquake struck the Pacific Northwest in 1700 when the Cascadia Subduction Zone, not far offshore from Oregon, ruptured in the form of an earthquake and created a tsunami that caused devastation on the Oregon coast and well-documented flooding and damage on the Pacific Coast of Japan. The Pacific Northwest will experience another earthquake – US Geological Survey scientists estimate there is a 10% chance in the next 30 years and up to a 20 percent chance in the next 50 years. According to DOGAMI, “Oregon’s tectonic setting” is a “mirror image of Japan’s.” In a simulation prepared by DOGAMI for a magnitude 9 earthquake on the Cascadia Subduction Zone – similar to the magnitude for the Tahoku event, the proposed project location would severely, violently, and extremely. The County should heed history’s lessons and closely scrutinize the Project in light of the devastation that occurred in Tohoku.

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3 “A ‘Ring of Fire,’ a zone of active earthquakes and volcanoes, surrounds much of the Pacific Ocean. Volcanoes and earthquakes are caused by the movements of tectonic plates, huge plates of rock that make up the shell of the earth. One type of movement is called subduction – when thin, oceanic plates such as those that compose the rock beneath the Pacific Ocean sink beneath thicker, lighter plates that make up continental plates.”
Special Considerations

As noted above, the property at issue is subject to ocean flooding, tsunamis, and earthquakes, which are natural hazards that the CCCP proposes to identify and implement a strategy for the well-being of the people of Coos County. It is undisputed that ocean flooding, tsunamis, and earthquakes are natural hazards. Appendix 1 of the Coos County Comprehensive Plan Policies provides that “Coos County shall regulate development in known areas potentially subject to natural disasters and hazards, so as to minimize possible risks to life and property. As noted above, the proposed Project location is located in an area of significant natural hazards. Coos County considers natural disasters and hazards to include stream and ocean flooding, wind hazards, wind erosion and deposition, critical streambank erosion, mass movement (earthflow and slump topography), earthquakes and weak foundations.” As indicated above, the proposed development is subject to significant natural hazards, including ocean flooding (tsunamis) and earthquakes. Section 5.11 places the burden on the County to “(1) inform its citizens of potential risks associated with development in known hazard areas; and (2) to provide appropriate safeguards to minimize such potential risks.” Here, the Applicant has not provided information to satisfy either issue.

Coos County is required to support the State Building Code Division’s building code enforcement program so as to provide maximum structural protection necessary to safeguard against seismic hazards (earthquakes).

The Applicant has not yet satisfied the special considerations for earthquakes or ocean flooding/tsunamis.

Failure to Comply with the Flood Plain Overlay Zone

The Flood Plain overlay zone’s purpose is “to protect public health and safety. The secondary aim is to improve the general welfare by reducing economic loss due to interruption of businesses and industry or damage to homes on other property.” CCCP 4.6.200. Here, all of the above referenced maps indicate that the proposed property for the Project is subject to ocean flooding, not just a portion of the property. Because the development will occur within a floodplain overlay zone, the Applicant must satisfy the CCCP 4.6.230.

Furthermore, as identified above, the proposed Project is located within a special flood hazard area, which requires compliance with CCCP 4.6.235 and CCCP 4.6.270. In addition, the area is subject to Coastal High Hazard Area, the Applicant must comply with CCCP 4.6.281.

Failure to Comply with Airport Surfaces Floating Zone

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4 The Applicant has not demonstrated that the inventory maps or other maps identified above do not trump the special considerations maps, which are meant to be generalized maps. See CCCP 4.7.115 – (inventory maps supercede special consideratons maps).
The purpose of the Airport Surfaces floating zone “is to protect public health, safety and welfare. It is recognized that obstructions to aviation have potential for endangering the lives and property of users of selected airports, and property of occupancy of land in the airport’s vicinity; an obstruction may affect future instrument approach minimums; and obstructions may reduce the area available for the landing, take-off and maneuvering of aircraft, thus tending to destroy or impair the utility of the airport and the public investment therein.” CCCP 4.6.300. Here, the proposed Project is located within the approach zone and/or transition zone and/or horizontal conical zone for the Lakeside Airport. See CCCP 4.6.310. The Applicant must also comply with the height limitations in the approach zone and the use restrictions set forth in CCCP 4.6.330.

Failure to Provide Information Related to the Jordan Cove Export Facility and South Dunes Power Plant

The South Dunes power plant application has not yet been received by the Energy Facility Siting Council (EFSC), an agency that is part of the Oregon Department of Energy, and that has not yet been submitted. The LNG terminal export facility application is being considered not by EFSC but by Federal Energy Regulatory Commission. That application (for the LNG terminal) was submitted to FERC in early summer 2013. Currently FERC is working on the Draft EIS for that application. Both South Dunes power plant and the LNG export terminal are part of the Jordan Cove Energy Project, though as two facilities undergoing review on different tracks, they are often named separately. Until the Applicant submits this application, the nature of the existing proposal cannot be fully understood. Therefore, process before Coos County must be stayed pending receipt of the application to EFSC, and determination of completeness by EFSC, so that the public has sufficient information on which to judge the application, its potential hazards, and the relationship to additional siting requirements that are part of the EFSC process.

Failure to Comply with Exhibit H (OAR 345-021-0010)

The Applicant must also comply with OAR 345-021-0010, referred to by the OARs as Exhibit H (Geologic and Soil Stability). As is evident from the above facts, the site is located within the 1995 DOGAMI SB 379 tsunami inundation line referred to in the Oregon Structural Specialty Code and the 2012 DOGAMI tsunami hazard maps, among other maps documenting significant natural hazards on the subject property. The application must include a thorough geological characterization of the project area and surrounding area and a site-specific geologic hazard and geotechnical assessment (including seismic, tsunami, lateral spreading, subsidence, surface fault rupture, flood, and channel migration hazards) at the proposed facility with supporting evidence to show that the facility can be safely constructed and operated. This analysis must include recently published scientific findings (or example papers published about the Japan 2011 earthquake and tsunami) and hazard maps (for example, landslide and tsunami maps for Coos County, Oregon).
The application must include all results of field and laboratory investigation and any other geotechnical and geologic hazard site evaluations that have been conducted. A thorough ground shaking amplification, liquefaction, and lateral spread analysis with all of the calculations, methodologies, and recommendations based on this site-specific analysis will be required. Any geotechnical reports included in Exhibit H as supporting evidence that the proposed facility will meet the Council’s structural standard should flow the guidelines of DOGAMI’s “Open File Report 00-04 “Guidelines for Engineering Geologic Reports and Site Specific Seismic Hazard Reports.”

The Applicant has not yet demonstrated compliance with any of these requirements.

Additional Legal Requirements

ORS 469.310 provides: “In the interests of the public health and the welfare of the people of this state, it is the declared public policy of this state that the siting, construction and operation of energy facilities shall be accomplished in a manner consistent with protection of the public health and safety and in compliance with the energy policy and air, water, solid waste, land use and other environmental protection policies of this state.” The public safety will be put at serious risk by locating the Project in the proposed location.

Under 469.501, the Energy Facility Siting Council was required to adopt standards for the siting, construction, operation, and retirement of facilities, and those standards must include “seismic hazards” and the “[p]rotection of public health and safety, including necessary safety devices and procedures.” OAR 345-022-0020(1) (Structural Standard), provides:

(a) “[t]he applicant, through appropriate site-specific study, has adequately characterized the site as to the Maximum Considered Earthquake Ground Motion as shown for the site in the 2009International Building Code and maximum probable ground motion, taking into account ground failure and amplification for the site specific soil profile under the maximum credible and maximum probable seismic events; and

(b) The applicant can design, engineer, and construct the facility to avoid dangers to human safety presented by seismic hazards affecting the site that are expected to result from maximum probable ground motion events. As used in this rule “seismic hazard” includes ground shaking, ground failure, landslide, liquefaction, lateral spreading, tsunami inundation, fault displacement, and subsidence;

(c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility.