1.0 INTRODUCTION

1.1 PROJECT SUMMARY

On September 4, 2007, Jordan Cove Energy Project, L.P. (Jordan Cove) and Pacific Connector Gas Pipeline, L.P. (Pacific Connector)[1] filed applications with the Federal Energy Regulatory Commission (FERC or Commission) under sections 3 and 7 of the Natural Gas Act (NGA). The applications were noticed in the *Federal Register* on September 13, 2007. In Docket No. CP07-444-000 Jordan Cove seeks authorization to construct and operate a new liquefied natural gas (LNG) import terminal on the east side of the North Spit of Coos Bay, in Coos County, Oregon. In Docket No. CP07-441-000 Pacific Connector seeks a Certificate of Public Convenience and Necessity (Certificate) to construct and operate a new 36-inch-diameter natural gas sendout pipeline extending from Jordan Cove's proposed LNG terminal southeast for about 230 miles through Coos, Douglas, Jackson, and Klamath Counties, Oregon. Hereafter in this environmental impact statement (EIS), Jordan Cove and Pacific Connector are also referred to as the applicants, and their inter-related proposals are collectively referred to as the Jordan Cove Energy and Pacific Connector Gas Pipeline (JCE & PCGP) Project, or the Project.

In Docket Nos. CP07-442-000, and CP07-443-000, Pacific Connector also applied for a blanket certificate under Part 157, subpart F of the Commission's regulations and requested issuance of a blanket certificate under Subpart G of Part 284, respectively. According to the FERC's regulations at Title 18 Code of Federal Regulations (CFR) Part 380.4, these requests for blanket authorities are categorically excluded from environmental review. The currently unknown and unspecified future actions that may take place under the blanket certificate issued under Part 157 that may result in ground disturbance or changes in operational air or noise emissions, reported to the Commission by the applicants as prior notices or annual reports, would be subject to individual environmental reviews in accordance with section 157.206 of the FERC regulations.

The FERC is the federal agency responsible for authorizing onshore LNG terminals and interstate natural gas transmission facilities, as specified in section 311(e)(1) of the Energy Policy Act of 2005 (EPAct) and the NGA. For the JCE & PCGP Project, in accordance with section 313(b)(1) of the EPAct, the FERC is the lead federal agency for the coordination of all applicable federal authorizations, and is also the lead federal agency for preparation of this EIS in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA), as outlined in the Council on Environmental Quality (CEQ) regulations for implementing the NEPA (40 CFR Parts 1500-1508), and the FERC's regulations (18 CFR Part 380).

The United States (U.S.) Department of Agriculture Forest Service (USFS), U.S. Army Corps of Engineers (COE), U.S. Environmental Protection Agency (EPA), U.S. Department of Homeland Security Coast Guard (Coast Guard), U.S. Department of the Interior Bureau of Land Management (BLM) and Bureau of Reclamation (BOR), and Douglas County, Oregon, are cooperating agencies for the development of this EIS. A cooperating agency has jurisdiction by

[1] Jordan Cove is a limited partnership, formed under the laws of Delaware, whose main stockholders are Fort Chicago LNG II, L.P. and Energy Projects Development L.L.C. Pacific Connector is also a limited partnership, formed in Delaware. Its main stockholders are Williams Pacific Connector Gas Pipeline, LLC, a subsidiary or Williams Gas Pipeline Company, LLC; PG&E Strategic Capital, Inc., a subsidiary of PG&E Corporation; and Fort Chicago LNG II, L.P., a subsidiary Fort Chicago Energy Partners L.P.

law or special expertise with respect to environmental impacts involved with the proposal, and is involved in the NEPA analysis. The Pipeline and Hazardous Materials Safety Administration (PHMSA) within the U.S. Department of Transportation (DOT) is participating in the NEPA analysis under the terms of an interagency agreement between the PHMSA, the FERC, and the Coast Guard, issued February 11, 2004. The U.S. Department of Agriculture, Department of the Army, Department of the Interior, EPA, and DOT are cooperating in a manner consistent with an interagency agreement with the FERC regarding early coordination of required environmental and historic preservation reviews signed in May 2002.

The Coast Guard has authority over the safety and security of LNG marine traffic in the waterway to the LNG terminal. The Coast Guard determines the suitability of the waterway for LNG marine traffic by issuing a Letter of Recommendation (LOR) (see section 1.5.2.1). The COE has authority to issue dredging and wetland permits for the Project (see section 1.5.2.2). The EPA has responsibilities under the Clean Air Act (CAA) and Clean Water Act (CWA) (see sections 1.5.1.7 and 1.5.2.3). The DOT has authority to enforce safety regulations and standards for the LNG terminal beginning at the last valve immediately before the storage tanks, and the design and operation of the Pacific Connector pipeline (see section 4.12.10).

On April 17, 2006, the BLM Oregon State Office received a right-of-way application from Pacific Connector under Section 28 of the Mineral Leasing Act of 1920 (MLA), as amended (30 United States Code [USC] 185) for authorization to construct, operate, maintain, and terminate the Pacific Connector pipeline where it crosses federal lands. Federal lands are defined as "all lands owned by the United States except lands in the National Park System, lands held in trust for an Indian or Indian Tribe, and lands on the Outer Continental Shelf." The BLM, BOR, and USFS are federal agencies that administer lands that would be crossed by portions of the Pacific Connector pipeline (see section 1.5.2.4). Section 28(c)(2) of the MLA states that "[w]here the surface of the Federal lands involved is administered by the Secretary [of the Interior] or by two or more Federal agencies, the Secretary is authorized, after consultation with the agencies involved, to grant or renew rights-of-way or permits through the Federal lands involved." The Secretary of the Interior has delegated this authority to the Director of the BLM who has further delegated authority to the BLM State Director for the Oregon State Office as the Authorized Officer within the State of Oregon. On May 5, 2006, the BLM Oregon State Director accepted Pacific Connector's application and established a cost-reimbursement agreement under the regulations in 43 CFR Part 2880.

All actions on the federal lands proposed in Pacific Connector's application must comply with the respective Land and Resource Management Plans (LRMP or Forest Plan) of the affected federal land management agencies. In implementing the NEPA process to assess the proposed action on federal lands, this EIS is tiered by reference to these management plans, as amended by the Northwest Forest Plan. Because the BLM, BOR, and USFS must comply with the requirements of the NEPA, their respective local LRMPs, authorizing legislation, regulations, policies, and procedures before granting or consenting to a right-of-way across lands under their administration, these agencies have elected to act as cooperating agencies in the preparation of the EIS. The USFS has identified the possible need to amend the existing Umpqua, Rouge River-Siskiyou, and Fremont-Winema National Forest LRMPs. The BLM has identified the possible need to amend the existing Resource Management Plans (RMPs) of the Coos Bay, Roseburg, and Medford Districts and the Klamath Falls Resource Area. The EIS examines the

proposed action and alternatives that require amendment or other administrative or other actions by the federal land management agencies.

Douglas County would be crossed by the Pacific Connector pipeline, between mileposts (MP) 45.5 and 109.6, and its Land Department has chosen to be a cooperating agency in the preparation of the EIS. However, the Douglas County Board of Commissioners have passed a resolution recommending that the pipeline should not be constructed unless and until Pacific Connector negotiates with all affected landowners and all landowner concerns are addressed.

The proposed action analyzed in this EIS includes the activities outlined in Jordan Cove's and Pacific Connector's applications to the FERC. The FERC and all of the cooperating agencies must consider the potential environmental impacts of the applicants' proposals as disclosed in this EIS prior to making their decisions.

The facilities associated with Jordan Cove's proposed LNG import terminal include:

- access channel dredged between the existing Coos Bay navigation channel and the LNG unloading slip;
- LNG carrier unloading slip excavated from an upland adjacent to Coos Bay;
- LNG unloading system at the berth, consisting of three 16-inch-diameter unloading arms and one 16-inch-diameter vapor return arm, with a maximum unloading capacity rate of 12,000 cubic meters per hour (m^3/hr);
- LNG transfer system from the berth to the storage tanks, consisting of one 2,600-foot-long, 36-inch-diameter cryogenic unloading line;
- LNG storage system, consisting of two full-containment LNG storage tanks, each with a capacity 160,000 m^3 (or 1,006,000 barrels). Each tank would be equipped with two fully submerged LNG in-tank pumps with an individual capacity rate of 5,300 gallons per minute (gpm);
- boil-off gas (BOG) recovery system, consisting of three cryogenic centrifugal BOG compressors, each with a rated capacity of 2,300 cubic feet per minute (ft^3/min), and two non-cryogenic reciprocating BOG pipeline compressors with an individual capacity rated at 2,500 ft^3/min;
- LNG transfer system from the storage tanks to the vaporizers, consisting of six LNG booster pumps each sized for 2,200 gpm;
- LNG vaporizer system, consisting of six submerged combustion vaporizers each sized for 200 million standard cubic feet per day (Mscfd);
- natural gas liquids (NGL) extraction facility, with the NGL to be sold to an entity other than Jordan Cove and likely transported from the terminal using existing, but inactive, railroad lines;
- 37-megawatt, natural gas-fired, simple-cycle combustion turbine powerplant to provide electric power for the LNG terminal;
- waste heat recovery system;
- emergency vent system, LNG spill containment system, firewater system, utility system, hazard detection system, and control system;
- associated buildings and support facilities; and
- metering facilities.

The proposed onshore facilities at the LNG terminal would be built on currently vacant land, of which 149 acres is owned or controlled by the Oregon International Port of Coos Bay (Port), and 10 acres is owned by Roseburg Forest Products (Roseburg). Jordan Cove has agreements with both the Port and Roseburg for the future lease and purchase of this property.[2]

The Port would obtain the necessary permits and construct the access channel to the LNG terminal slip within Coos Bay, and would obtain permits for, and construct and own the slip at the terminal. Construction of the slip would convert about 41 acres of current uplands above the mean higher high water line (MHHW) on the North Spit to waterway in the bay, through the removal of about 4.25 million cubic yards (mcy) of material. The material dredged or excavated to create the access channel and slip would be transported to three proposed storage areas: at the Jordan Cove Storage Site, Weyerhaeuser Linerboard Sites, and Port Sand Storage Site.

Jordan Cove would lease the eastern berth at the slip from the Port, and would construct its LNG carrier unloading facilities there. The western berth would be for general cargo use; however, the Port has no committed plans now to develop the western cargo berth. A tug boat berth would be constructed on the north side of the slip. Jordan Cove would be the anchor tenant for the slip and its agreement with the Port is structured around accommodating the requirements of the LNG terminal. Any development of the cargo berth by the Port would have to conform to the priorities of Jordan Cove's terminal and the unloading of LNG carriers. The LNG terminal and slip were designed on the basis that the thermal and vapor exclusion zones would not constrain the use of the western berth by other commercial ships, in the event that the Port secures a tenant and further develops plans for the cargo berth (see further discussion in section 4.12.4 of this EIS).

As part of our[3] environmental analysis of Jordan Cove's proposed LNG import terminal, this EIS considers the potential impacts resulting from the Port's dredging of the access channel within Coos Bay, the excavation of the slip from current uplands, the disposal of dredged and excavated materials, and construction and operation of the slip. These impacts are considered part of the proposed action and are included in the environmental impact analysis where appropriate in chapter 4. In addition, the EIS addresses the potential environmental impacts associated with temporary storage and staging areas that would be used during construction of the proposed LNG terminal, and temporary and permanent access roads associated with the facility, including haul roads to the dredged disposal areas, and slurry pipelines to dredge material storage areas. This EIS also addresses potential environmental impacts associated with LNG marine traffic along the waterway to the LNG import terminal.

[2] In June 2006, the Port finalized a property purchase agreement to acquire 1,300 acres on the North Spit of Coos Bay from the Weyerhaeuser Company. That same month the Port and Jordan Cove signed an Option to Purchase and Lease. The public may view these agreements through the Port's Internet Web Page at www.portofcoosbay.com.

[3] The pronouns "we," "us," and "our" refer to the environmental staff of the FERC's Office of Energy Projects (OEP).

The natural gas sendout pipeline facilities proposed by Pacific Connector would include:

- 229.5-mile-long, 36-inch-diameter welded steel underground interstate natural gas pipeline (Pacific Connector pipeline), with a maximum allowable operating pressure (MAOP) of 1,440 pounds per square inch (psig);
- natural gas compressor station (Butte Falls Compressor Station), at about MP 132.1 along the route of the Pacific Connector pipeline, in Jackson County, Oregon, consisting of two new 10,310-horsepower (hp) compressor units;
- four natural gas meter stations, including the Jordan Cove Receipt Meter Station at MP 0.0 in Coos County; the Clarks Branch Delivery Meter Station at about MP 69.7 in Douglas County; the Shady Cove Delivery Meter Station at about MP 122.1 in Jackson County; and the Tule Lake, Russell Canyon, and Buck Butte Meter Stations at MP 230.9[4] in Klamath County;
- gas control communication system, consisting of new radio towers at each meter station and the compressor station, use of an existing communication site owned by Williams Northwest Pipeline Corporation (Williams Northwest), and leased space on seven other existing communication towers;
- mainline block valves (MLV) at approximately 16 locations along the Pacific Connector pipeline; and
- five pig[5] launchers and receivers, four co-located with meter stations and the compressor station, and the fifth co-located with a MLV.

The general location of facilities proposed by Jordan Cove and Pacific Connector are shown on figure 1-1. The proposed facilities are more fully described in section 2.1 of this EIS.

The Pacific Connector pipeline would begin at an interconnection with Jordan Cove's facilities at the Jordan Cove Receipt Meter Station within the LNG terminal tract. The pipeline would terminate near the California border, east of Malin, Oregon, with interconnections with the existing natural gas systems of Gas Transmission Northwest Corporation (GTN) at the Buck Butte Delivery Meter Station, with Tuscarora Gas Transmission Company (Tuscarora) at the Russell Canyon Delivery Meter Station, and with Pacific Gas and Electric Company (PG&E) at the Tule Lake Delivery Meter Station. In between, the Pacific Connector pipeline would deliver natural gas to the existing Williams Northwest Grants Pass Lateral interstate pipeline at the Clarks Branch Delivery Meter Station and deliver gas to Avista Corporation (Avista) at the Shady Cove Delivery Meter Station. Avista is a local distribution company (LDC) that is not regulated by the FERC.[6] Facilities that might be constructed by Avista would be non-jurisdictional; however, this EIS also addresses non-jurisdictional facilities identified as associated with the JCE & PCGP Project (see section 2.2).

This EIS also addresses the potential environmental impacts associated with the use of temporary storage and staging areas, temporary extra work space areas (TEWAs), and temporary uncleared

[4] Although the total pipeline length is 229.5 miles, the pipeline ends at MP 230.9 due to numerous pipeline reroutes that resulted in shortening the overall length by about 1.4 miles. Pacific Connector attempted to maintain continuity of original mileposts and accounted for reroutes using milepost equations rather than changing mileposts along the entire route.
[5] A "pig" is a tool for cleaning and inspecting the inside of a pipeline.
[6] The Avista facilities would not be regulated by the FERC, but, as interstate natural gas LDC, it would be regulated by the State of Oregon, through the Oregon Public Utilities Commission.

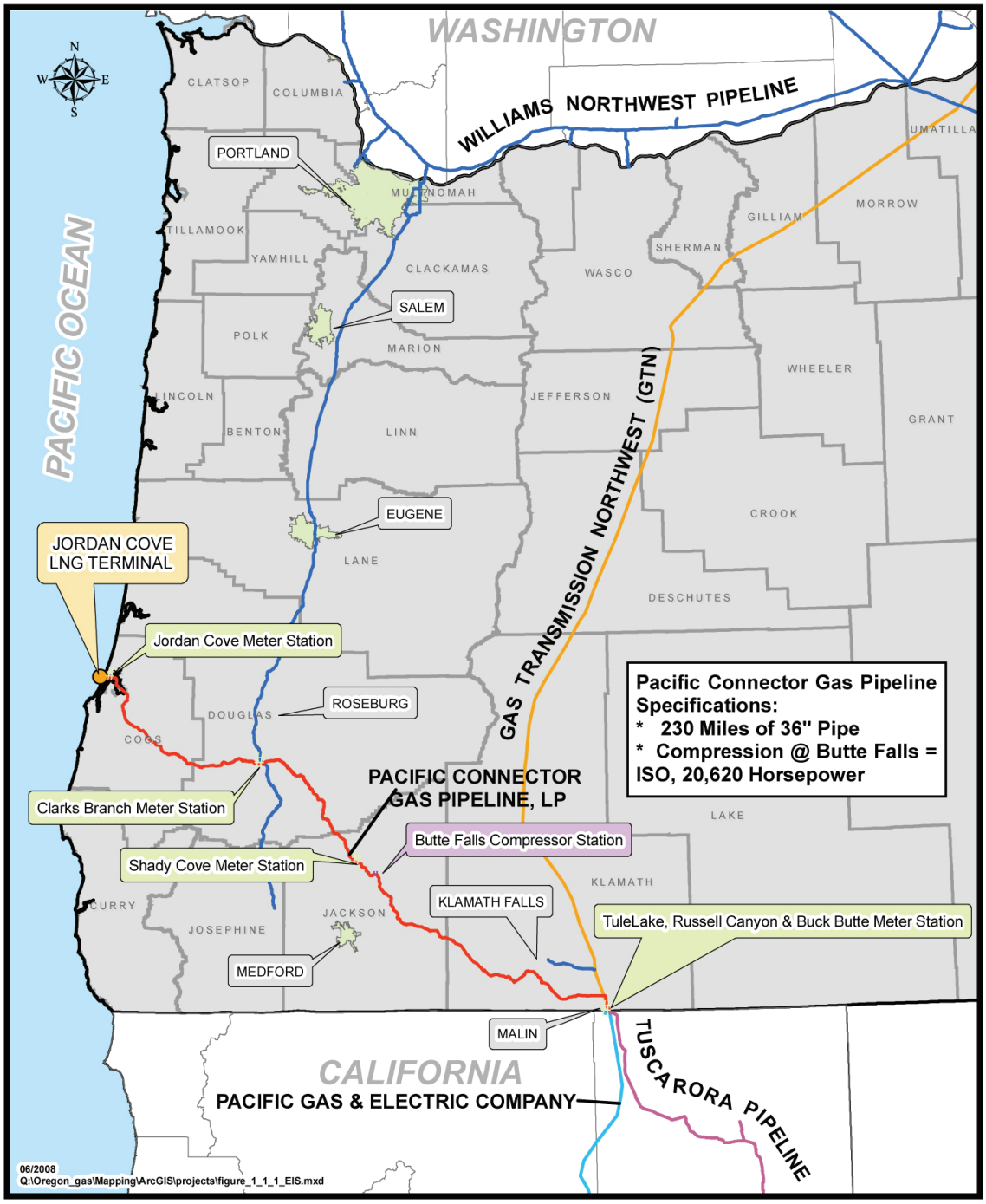

Figure 1-1
General Location Map of
Proposed Facilities

storage areas (UCSAs) during construction of the pipeline, and temporary and permanent roads to serve as access to the right-of-way.

The proposed Pacific Connector pipeline would cross private and public lands (see section 4.7). Pacific Connector would negotiate to acquire easements from private, local, county, and state landowners. If agreements cannot be reached, Pacific Connector could use the power of eminent domain under section 7h of the NGA, if the FERC issues a Certificate for the pipeline. However, a Certificate would not allow the use of eminent domain for federal or tribal lands. Pacific Connector must obtain a Right-of-Way Grant from the BLM to cross federal lands and reach an agreement with Indian tribes to cross tribal lands.

1.2 ENVIRONMENTAL SETTING

Jordan Cove's proposed LNG terminal would be located in Coos County, Oregon, on the bay side of the North Spit of Coos Bay. LNG carriers would access the terminal through a waterway for LNG marine traffic, which is defined by the Coast Guard for this Project as extending from the outer limits of the U.S. territorial waters 12 nautical miles off the coast of Oregon, and up the Coos Bay navigation channel about 7.5 miles to the proposed terminal.

The Pacific Connector pipeline would begin at the proposed LNG terminal, and proceed generally southeast for about 230 miles across portions of Coos, Douglas, Jackson, and Klamath Counties, to its end point near Malin, at the Oregon-California border. The first 7 miles of pipeline would be installed within the estuarine waters of Coos Bay, with the remaining pipeline installed overland except for perpendicular crossings of streams and rivers. The pipeline would cross the Coast Range and the Camas Valley, the Klamath Mountains and Cascade Range, and then the Klamath Basin. Detailed descriptions of environmental resources potentially affected by the proposed Project are included in the respective sections of chapter 4 of this EIS.

1.3 PURPOSE AND NEED

Jordan Cove and Pacific Connector developed their Project because of the perceived need for additional supplies of natural gas in the Pacific Northwest, northern California, and northern Nevada. As discussed below, several studies have indicated that there will be increased demand for natural gas in these markets in the future, but supplies through existing interstate pipeline systems serving those regions are constrained by several factions and may not be able to meet those demands. When Pacific Connector conducted its open season to test the market for transportation of natural gas from the proposed Jordan Cove LNG import terminal, it was able to negotiate agreements with a number of shippers, underscoring the strong support for the product this Project could provide.

Some of the main objectives of the JCE & PCGP Project are to:

- provide a new access point for overseas LNG supplies through a new LNG import terminal located on the southern Oregon coast that can accommodate industry-standard LNG carriers;
- provide a new source of natural gas to Pacific Northwest, northern California, and northern Nevada markets to diversify the supply sources for these markets to meet future demands; and

- serve multiple markets through an interstate pipeline with interconnections with new and existing pipeline infrastructure.

LNG is natural gas that has been cooled to about -260 degrees Fahrenheit (°F) for shipment and storage as a liquid. As a liquid, LNG is about 600 times more compact than its equivalent amount of natural gas vapors. LNG is typically produced in foreign countries with abundant natural gas reserves, and transported long distances across oceans using specially designed carriers. There are currently 15 LNG exporting nations that combined hold about 33 percent of the world's natural gas reserves (Energy Information Administration [EIA] 2008a).

Jordan Cove has not revealed its expected sources for the LNG, but most likely it would come from LNG exporting countries around the Pacific Basin, including Australia, Malaysia, Indonesia, and perhaps even the United States (Alaska has a liquefaction and LNG export facility). In 2006, Trinidad and Tobago was the largest supplier of LNG for the existing import terminals operating on the East and Gulf coasts, accounting for about 67 percent of all LNG imported into the United States (EIA 2008a). At the Jordan Cove import terminal, the LNG would be stored and then vaporized back into natural gas for transportation by pipeline into the existing national grid.

Pacific Connector held an open season that commenced on February 1, 2007 and closed on March 5, 2007. Seven shippers executed 10 Precedent Agreements totaling 1,490,000 decatherms per day (Dth/d) of contract demand (equivalent to about 1.4 billion standard cubic feet per day [Bscfd]). The Precedent Agreements are binding subject to certain precedent conditions.

The JCE & PCGP Project is specifically designed to provide up to about 1.0 Bscfd of natural gas to the Pacific Northwest, northern California, and northern Nevada markets by:

- delivering natural gas to the Williams Northwest pipeline system through an interconnect between the Pacific Connector pipeline and the existing Grants Pass Lateral near Myrtle Creek, Oregon (MP 69.70);
- delivering natural gas to the existing Avista system through an interconnect with the Pacific Connector pipeline near Shady Cove, Oregon (MP 122.1); and
- delivering natural gas to the existing GTN, Tuscarora, and PG&E pipeline systems through interconnects at the terminus of the Pacific Connector pipeline (MP 230.90) near Malin, Oregon.

Williams Northwest, GTN, and Tuscarora are interstate natural gas transportation systems regulated by the FERC. Northwest Pipeline Corporation is a subsidiary of the Williams Companies, Inc. Both GTN and Tuscarora are subsidiaries of the TransCanada Corporation. Williams Northwest and GTN transport natural gas produced in western Canada and the Rocky Mountains to the Pacific Northwest. GTN provides Canadian and Rocky Mountain gas to northern Nevada and northern California through its interconnections with Tuscarora and PG&E at the Oregon/California border east of Malin, Oregon. Tuscarora mainly serves the Reno, Nevada area. PG&E serves markets mainly in northern and central California, and operates both interstate facilities regulated by the FERC, and LDC facilities regulated by the California Public Utilities Commission. Avista is an LDC that provides natural gas to residential and commercial/industrial customers in or near the communities of Roseburg, Grants Pass, Medford, and Ashland, Oregon.

In 2007, total natural gas consumption in Washington and Oregon was estimated to average about 1.2 Bscfd (ICF International [ICF] 2007). The states of Washington and Oregon do not produce much natural gas,[7] and import nearly all their natural gas through the Williams Northwest and GTN systems. In total, these existing pipelines have a current transportation capacity of about 4.1 Bscfd as they enter the region (from Canada and Idaho), with about 2.2 Bscfd in capacity targeted for the California market. The Williams Northwest system can receive up to about 1.3 Bscfd from its interconnection with Westcoast Energy at Sumas, Washington. Its mainline pipeline coming from the north to Vancouver, Washington has a capacity of 630 mcfd. Coming west into Oregon from Caldwell, Idaho the system has a capacity of about 480 mcfd. Between its interconnection with GTN near Stanfield, Oregon and Vancouver, Washington the system has a capacity of 550 mcfd. The GTN system interconnects with TransCanada's British Columbia system at Kingsgate, British Columbia; and with the Williams Northwest system at Spokane and Palouse, Washington and Stanfield, Oregon. The GTN system can transport more than 2.9 Bscfd, with about 1.0 Bscfd targeted for markets in the Pacific Northwest.

In 2006, the entire state of Nevada consumed about 249,683 mcf of natural gas. However, that year only 5 mcf was produced from instate gas wells (EIA 2007b). There are two main interstate natural gas pipeline systems that serve northern Nevada: Paiute Pipeline Company (Paiute) and Tuscarora. Paiute, a subsidiary of Southwest Gas Corporation, receives natural gas from the Williams Northwest system at the Nevada/Idaho border near Owyhee, and from an interconnection with Tuscarora at Wadsworth Junction. The Paiute system serves the communities of Elko, Lovelock, Yearington, Fallon, Reno, Dayton, Carson City, Garnerville, and Lake Tahoe. Paiute provides natural gas to three LDCs: Sierra Pacific Power Company, Southwest-Northern Nevada, and Southwest-Northern California. Northern Nevada's natural gas consumption is anticipated to grow an average of 4 percent per year over the next 10 years.

It was estimated that in 2007, California produced about 143 mcfd of natural gas instate, or slightly more than 13 percent of its natural gas supplies. Its total consumption of natural gas in 2006 was estimated to be about 2,292,056 mcf, or about 6,589 mcfd (EIA 2007b; California Energy Commission [CEC] 2006). There was about 9,130 mcfd of interstate pipeline capacity coming into California in 2006. PG&E held receipt capacity of 3,161 mcfd in 2006, with 2,021 mcfd of that total coming into its existing Lines 400/401 from the interconnection with GTN (CEC 2007a).

Energy demand in the United States will continue to rise steadily in the future, due to population growth and industrial needs. The U.S. Department of Energy's EIA Annual Energy Outlook 2007 estimates that total energy consumption in the United States will increase from 100 quadrillion British thermal units (Btu) per year in 2005 to 125 quadrillion Btu per year in 2030, representing an annualized increase of 1.1 percent. In 2006, natural gas represented 22 percent of the total energy used in the United States. More than half of all American homes are heated with natural gas, and it is the fuel of choice for about 41 percent of the nation's industrial sector (James A. Baker III Institute for Public Policy [Baker Institute] 2008). According to the EIA, United States natural gas consumption is estimated to grow by 0.3 percent a year, and should increase from about 21.8 trillion cubic feet (Tcf) per year in 2006 to 24.3 Tcf in 2016 (EIA

[7] Oregon has only 15 natural gas wells that produced 621 mcf in 2006, or about 0.2 percent of its consumption.

2007d). Modeling conducted by the Baker Institute of Rice University projected that natural gas demand in the United States should grow by about 1.3 percent a year for the next two decades.

Part of the future demand for natural gas is driven by its increased use for electric power generation. Natural gas is the cleanest burning fossil fuel, and the electric generation industry is either retrofitting old plants from coal or oil, or building new gas-fired power plants in response to air pollution requirements, or in anticipation of future government regulations to reduce greenhouse gases (GHG), including carbon emissions, to address climate change issues. Nationally, about 52 percent of all new power plants built since 1995 have been gas fired, and natural gas accounts for 90 percent of all new megawatts (MW) of electric power capacity installed over the last 12 years in the United States (Baker Institute 2008). In 2006, consumption of natural gas in the electric power sector totaled 6,222 Bscf, a 6 percent increase from the previous year; in spite of a slight decline in national industrial use at the same time. The overall picture for total natural gas consumption in 2006 in the United States showed that 33 percent was used for industrial purposes, 31 percent for electric generation, 22 percent for residential use, and 14 percent by the commercial sector (EIA 2007b).

The CEC (2008) estimates that energy use in California should grow at a rate of about 1.25 percent per year, with peak demand rising even faster, at 1.35 percent per year. California's natural gas demand for all sectors combined is forecast to increase by about 1 percent annually, while natural gas use by the electric power sector is expected to increase 2.4 percent over the next decade (CEC 2007a). In 2003, natural gas fueled 37 percent of the electricity used in California (California Electricity Oversite Board 2004). About 2,250 MW of new gas-fired generation is expected to come on-line in northern California by 2010, with an associated peak-day natural gas feedstock requirement of approximately 350,000 Dth/d. It is projected that by 2016 natural gas consumption in California would total 7,058 mcfd, a 7 percent increase from 2006. Nearly 41 percent of the gas consumed in California by that date would be used for electric power generation (CEC 2006).

Use of natural gas in the Pacific Northwest should continue to grow in the future due to additional gas-fired electric generation, and population increases that will provide more residential customers. Natural gas accounts for about 50 percent of the energy currently consumed in the Pacific Northwest. The number of natural gas customers increased nearly 13 percent between 2000 and 2005, despite a regional economic slump and higher commodity prices. Currently, more than 20 percent of the region's electric generation is fueled by natural gas. This sector has shown the greatest growth since the early 1990s, as newly built gas-fired electric generation plants increased total power outputs by 5.5 gigawatts (GW) or a factor of five. About 60 percent of the total power generation capacity in the Pacific Northwest came online after 2001 (Northwest Gas Association [NWGA] 2007); ICF 2007). Between 2001 and 2003, about 3,350 MW of new power generation was added to the Northwest; most of it fueled by natural gas, including 1,675 MW in Oregon (Oregon Department of Energy [ODE] 2005a). Over the last 3 years (2006 to 2008) about 1,438 MW in additional gas-fired electric generation capacity was put into service or is under construction and scheduled to come online in the Pacific Northwest (Northwest Power and Conservation Council [NWPCC] 2008).

The Northwest Gas Association (NWGA 2007) estimated that natural gas consumption in the Pacific Northwest should increase at an average of 1.9 percent per year over the next 5 years, for a total rise of 7.2 percent through 2012, under normal weather conditions and expected economic

and population growth. Under its base case, residential natural gas consumption is expected to increase about 9 percent in total by 2012, while natural gas use for power generation would increase about 12 percent over that period. According to a 2007 study produced by ICF for the Washington Energy Facility Siting Council, future natural gas use in the Pacific Northwest should grow at an annual rate in excess of 3 percent per year, with total consumption in Washington and Oregon combined reaching 741 Bscf per year by 2025. ICF expects residential demand for natural gas in Washington and Oregon to increase by a total of about 58 percent between 2007 and 2025, while gas used for electric generation would increase by about 180 percent in that same period.

Since the early 1980s, natural gas production in the United States has fallen short of national demand. Domestic production of natural gas in the United States has risen from about 17.5 Tcf in 1991 to about 19.3 Tcf in 2006 (EIA 2007b). Meanwhile, natural gas consumption in the United States grew to about 21.8 Tcf by 2006. The shortfall between domestic production and consumption has been bridged by importing natural gas, mainly from Canada. About 16 percent of all natural gas consumed in the United States is imported from foreign countries, with Canada being the source of almost 86 percent of that total. In 2006, the Pacific Northwest received about 7 percent of the natural gas imported into the United States from Canada (about 255 Bscf), the Midwest received about 46 percent (1,632 Bscf) and the Northeast got 28 percent (1,012 Bscf) (EIA 2008a). In the future, the West Coast will have to increasingly compete with the rest of North America for its share of natural gas supplies from Western Canadian producers.

The Western Canada Sedimentary Basin (WCSB), extending from British Columbia to Saskatchewan, produces nearly 98 percent of the natural gas used in Canada, and represents about 23 percent of the total production in North America. Presently, approximately 60 percent of the natural gas used in northern California, 80 percent of the natural gas used in Washington, 70 percent of the natural gas used in Oregon, and 63 percent of the natural gas used in northern Nevada originates in the WCSB. Most of the remainder of the natural gas used in Washington, Oregon, Nevada, and California originates in the Rocky Mountains and San Juan Basins. Natural gas used in California also originates in the Permian Basin and within the state.

Since 2001, production from the WCSB has been relatively constant, at about 6 Tcf per year. However, the WCSB has been characterized as a "mature" production area, and it is forecast to decline in the future from current production levels of about 17 Bscfd to less than 15 Bscfd by 2013 (ICF 2007; NWGA 2007). The Alberta Energy and Utilities Board projected that natural gas from wells in the province of Alberta would decline at a rate of 2.5 percent per annum from 2003 through at least 2013. The EIA (2008a) believes that WCSB producers are having difficulties maintaining output because of rising production costs and declining well productivity. At the same time that WCSB production would be declining, natural gas consumption in Canada should be increasing. Canadian domestic demand for natural gas is forecast to grow at a rate of 0.2 Bscfd. Natural gas is used for heavy oil and tar sand development in Alberta and for gas-fired power plants in Ontario. Imports of natural gas from Canada to the United States are predicted to fall from 3.6 Tcf in 2006 to 1.2 Tcf in 2030 (ODE 2008b).

According to the EIA (2007a), most of the onshore natural gas resources in the continental United States have already been discovered. Over the last 20 years, the amount of federal lands open for new gas exploration has shrunk from 75 percent to 17 percent (Baker Institute 2008).

Production from conventional onshore sources in the lower 48 states is expected to decline from about 6.4 Tcf in 2005 to about 4.9 Tcf by 2030. Natural gas from deepwater offshore wells in the Gulf of Mexico, currently accounting for about 15 percent of cumulative domestic marketed production, is predicted to peak at 3.1 Tcf by 2015 and decline to 2.1 Tcf by 2030. Increases in domestic production in the future would mainly come from Alaska and unconventional onshore resources, including coalbed methane, tight sandstones, and gas shale. However, natural gas from Alaska is currently shut in; although there are plans for a future natural gas pipeline from Alaska.[8]

Natural gas production in the Rocky Mountain states has shown steady growth, from 3.6 Bscfd in 1995 to 8.1 Bscfd in 2007. Rocky Mountain gas now represents about 12 percent of U.S. production. The region is estimated to have about 142 Tcf of remaining natural gas reserves. Production in the Rockies is projected to increase to almost 10 Bscfd by 2013, and up to 12.2 Bscfd by 2025 (NWGA 2007; ICF 2007). However, access to additional Rocky Mountain supplies is currently limited by pipeline capacity constraints to the western United States.

New interstate pipeline infrastructure that was recently built or proposed is taking Rocky Mountain natural gas to markets in the Midwest. The Western Phase of the Rockies Express Pipeline Project (REX), a joint venture between Kinder Morgan Energy Partners and Sempra Pipelines and Storage, is a 780-mile-long 42-inch-diameter pipeline between Colorado and Missouri, authorized in FERC Docket No. CP06-354-000, that went into service early in 2008. The Eastern Phase of REX, in Docket No. CP07-208-000, which proposes to extend the pipeline for an additional 639 miles to Ohio, was authorized by the Commission at the end of May 2008. In addition, a partnership between Alliance Pipeline and Questar Overthrust Pipeline announced plans in March 2008 for an 800-mile-long pipeline between Wamsutter, Wyoming and Emerson, Minnesota, known as the Rockies Alliance Project would transport Rocky Mountain gas to markets in the Midwest (Inside FERC 2008b; Natural Gas Intelligence 2008c). To compete with that proposal, TransCanada and Northern Border unveiled plans in April 2008 for their proposed Pathfinder and Bison projects, to transport natural gas produced in Wyoming to the Northern Border pipeline in North Dakota for ultimate delivery to the Chicago market (Inside FERC 2008d).

There are also plans to bring additional volumes of Rocky Mountain gas to the West Coast in the future. Both the Bronco Project, proposed by Spectra Energy, and the Ruby Project, proposed by El Paso Corporation (El Paso), would have pipelines extending from the Opal hub in southwestern Wyoming to the California border near Malin, Oregon (Inside FERC 2007; Natural Gas Intelligence 2008b; Gas Daily 2007; Natural Gas Intelligence 2008a). The so-called Sunstone Project, proposed by Williams Northwest and TransCanada, would consist of a pipeline paralleling Williams Northwest existing mainline between Opal, Wyoming and Stanfield, Oregon. In partnership with Puget Sound Energy (PSE), Williams Northwest would then use the newly proposed Blue Bridge Project pipeline to connect to Seattle, Washington (The Oregonian 2008; Natural Gas Intelligence 2008e; Natural Gas Intelligence 2008i; Inside FERC 2008b). GTN, which can receive Rocky Mountain produced gas through its interconnections with Williams Northwest, is planning an expansion of its system in Oregon through the newly proposed Palomar project. All of these newly proposed pipelines, which are in different stages of development and review, are discussed further in section 3.1.2.2.

[8] The ODE (2008a) indicated that a natural gas pipeline from Alaska was not expected to be built until after 2018.

The proposed JCE & PCGP Project would diversify available sources of natural gas in the Pacific Northwest, northern Nevada, and northern California, by importing LNG to meet estimated future demand in the region, which would contribute to regional natural gas price stabilization, and mitigate against the projected decline in Canadian imports. Unlike North America, where much of the resource base has already been exploited, there is ample potential for growth in LNG supply from countries with large untapped natural gas reserves. World natural gas reserves are estimated to be about 6,000 Tcf. LNG represented about 14 percent of all natural gas imported into the United States in 2006 (EIA 2008a). The Baker Institute (2008) estimated that by 2030, the United States would rely on imported LNG to account for about 31 percent of its natural gas consumption. The EIA (2007a) projected that LNG imports into the United States will increase from about 584 Bscf in 2006 to 4.5 Tcf by 2030. Even the ODE (2008a) has conceded that the United States would have to import LNG from abroad in order to make up for declining domestic natural gas production.

The West Coast has historically enjoyed natural gas prices below the national average because of its relative proximity to the WCSB and the Rockies, and local competition from hydropower plants that provide a significant amount of energy for the region. Natural gas prices have recently increased dramatically in the Pacific Northwest, and this trend will continue unless additional new sources of natural gas can be imported into the region. Between 2002 and 2005, the wellhead price of natural gas more than doubled (NWGA 2007). Wholesale natural gas prices in Oregon increased 168 percent between 1999 and 2004, and between 1999 and 2005 residential rates rose 84 percent (ODE 2005a, 2008a). According to the Washington Utilities and Transportation Commission (WUTC) (2006), natural gas prices in that state have soared as much as 300 percent over the last several years. Nationally, natural gas prices increased between 73 to 128 percent from 1999 to 2006 for all end users (EIA 2007c).

In its 2007 Annual Energy Outlook reference case, the EIA projected that wellhead prices for natural gas in the lower 48 continental United States would rise from $5.01 per mcf in 2005 to $5.89 per mcf by 2030. The NWPCC (2008) forecasts price escalation for natural gas in the region after 2010. The EIA (2008b) estimated that the spot price of natural gas at the Henry Hub would rise from $7.17 per mcf in 2007, to $7.93 per mcf in 2009. The CEC (2007a) predicted that by 2017 the price of natural gas at the Malin, Oregon Hub could exceed the price at the Henry Hub. ICF (2007) had a slightly different scenario, predicting that natural gas prices at the Henry Hub would cost $9.83 per million British thermal unit (MMBtu) in 2021, and $9.54/MMBtu at Malin by the same date, assuming that a pipeline was in operation from Alaska by then.

Higher natural gas prices will have negative impacts on the regional economy. The ODE (2008a) admitted that any reduction in the sources of natural gas to Oregon would disrupt the state's economy; particularly the manufacturing segment. Oregonians spend nearly $10 billion annually on energy. In 2000, 1.2 percent of total personal income in Oregon was spent on purchasing natural gas (ODE 2005a). The EIA (2007b) indicated that higher natural gas prices up to 2006 adversely affected LDCs and their residential customers. The number of LDC natural gas customers in arrears and the dollar value of their overdue accounts have been rising. The U.S. Federal Reserve Bank estimated that a doubling of natural gas prices would result in a reduction of gross domestic product growth between 0.6 to 2.1 percent (Baker Institute 2008). The U.S. Department of Commerce (2005) found that higher natural gas prices between 2000 and 2004 reduced national civilian employment by an average of almost one-half million jobs

per year, with about 79,000 lost jobs in manufacturing. Higher natural gas prices push up consumer costs, reduce real disposable income, slow industrial growth, affect the competitiveness of American manufacturing, and reduce the number of new jobs created in the national economy (U.S. Department of Commerce 2006). A study sponsored by the Interstate Natural Gas Association of America (INGAA) Foundation in 2005 (INGAA 2005) found that a delay of 3 years for installing new natural gas infrastructure, including LNG import terminals, in the Pacific Northwest would cost the Oregon economy an estimated $11.1 billion and the Washington State economy about $9.7 billion.

According to the NWGA (2007), an LNG import terminal located in the Pacific Northwest would promote regional natural gas supply diversity and reliability, lower shipping costs, stabilize prices, and may stimulate the economy. The CEC (2007a) believes that the insertion of LNG into the West Coast mix could result in natural gas price reductions. ICF (2007) agrees that the importation of LNG in the future would put downward pressure on Pacific Northwest natural gas prices. Dr. Philip Romero, of the University of Oregon, analyzed the impact of LNG on the economy of the Pacific Northwest. In Dr. Romero's opinion, an LNG import terminal with a capacity of 1 Bscfd would increase natural gas supplies to the region by 10.3 to 51.5 percent, depending on utilization, and reduce gas prices by between 6.7 and 33.7 percent. A stable supply of natural gas in the future would benefit manufacturing and other industries, and result in higher disposable incomes for Northwest households. His "top-down" macroeconomic estimates suggested that a 10 percent reduction in natural gas prices could result in an increase in regional gross domestic product in 2012 between $222 million and $826 million, increase regional employment by between 5,100 to 20,300 jobs, and raise total household incomes between $54 million and $214 million (Romero 2007).

A recent study by the ODE (2008b) indicated that natural gas from imported LNG may cost more than natural gas produced in North America and transported to the Pacific Northwest by interstate pipelines. According to the ODE, Atlantic Basin LNG imported to East and Gulf Coast existing LNG terminals is generally priced 8 to 9 percent higher than North American produced natural gas. The EIA (2008a) indicated that in 2006 prices for LNG imported into the United States (virtually exclusively from the Atlantic Basin to the existing Gulf and East Coast terminals) averaged $6.81 per MMBtu, while the price of natural gas imported via pipeline (mostly from Canada) averaged $6.70 per MMBtu. The cost of Pacific Basin LNG may even be higher. The ODE cited a case where a contract between Indonesia and Japan priced LNG at twice the cost of North American natural gas. The same report by the ODE stated that: "natural gas use in Oregon is likely to rise over the next twenty years. New sources of natural gas will be needed to meet this demand." However, if new interstate pipelines are authorized and built, and transport domestically produced gas at substantially lower costs than imported LNG, then the market may not support the construction of LNG import terminals in Oregon.

Another LNG developer has challenged the contentions of the ODE that imported LNG would not be price competitive with domestically produced natural gas. First, East Coast markets may out-bid West Coast markets for Rockies gas. Second, right now, the only new pipelines out of the Rockies transport gas to Midwest markets. Most of the newly proposed pipelines from the Rockies to the West Coast are currently speculative, and there is no guarantee that any of these would be authorized or built in a time frame that would satisfy regional demand. Lastly, in fact, imported LNG may be priced below domestic natural gas, depending on such variables as supply and demand. The cost to land LNG on the West Coast is estimated to be $4.50 per MMBtu,

whereas the current price of domestic gas is $11.00 per MMBtu. In another example, China recently signed a long-term contract for LNG from Australia paying the equivalent of $3.13 per MMBtu (NorthernStar 2008). Independent research by the FERC staff found that between January and May 2008 domestic natural gas prices at the Henry Hub ranged between $7.93 and $11.23 per MMBtu while LNG imported into the United States fluctuated in price between $8.02 and $10.76 per MMBtu. Therefore, LNG at particular times could cost more or less than domestic natural gas, depending on market conditions.

The above discussion of project purpose and need is merely a brief summary, to satisfy the requirements of the CEQ regulations for implementing the NEPA, which state that an EIS should only "briefly specify the underlying purpose and need" for a proposed project (40 CFR 1502.13). The Commission would more fully consider the need for the JCE & PCGP Project when making its decision, and disclose its determinations in the Project Order.

1.4 PURPOSE AND SCOPE OF THIS ENVIRONMENTAL IMPACT STATEMENT

This EIS discloses and assesses the potential environmental impacts that are likely to result from the construction and operation of the JCE & PCGP Project. The EIS also addresses potential socioeconomic impacts and regional economic benefits of the proposed Project.

This document is a draft EIS that has been prepared for public review and comment. A final EIS will be prepared subsequently to respond to comments received on this draft EIS. The distribution list for this draft EIS is provided in Appendix A.

Our principal purposes for preparing this EIS are to:

- identify and assess the potential direct, indirect, and cumulative impacts on the natural and human environment that would result from the implementation of the proposed actions;
- describe and evaluate reasonable alternatives to the proposed actions that would avoid or minimize adverse effects on the environment;
- identify and recommend specific mitigation measures, as necessary, to avoid or minimize significant environmental effects; and
- encourage and facilitate involvement by the public and interested agencies in the environmental review process.

The FERC will use the EIS as an element in its review of Jordan Cove's and Pacific Connector's applications. After a final EIS is prepared, the FERC will determine whether the Project should be authorized. A final approval will only be granted if, after a consideration of both environmental and non-environmental issues related to markets and rates, the FERC finds that the proposed Project is in the public interest. The EIS and mitigation development discussed herein will be important factors in this final determination.

Likewise, the Coast Guard will base its LOR on the environmental analysis contained in this EIS, in addition to its review of Jordan Cove's Waterway Suitability Assessment (WSA). The COE will use this EIS, and comments it receives from its notices of applications, in its review of the Port's and Pacific Connector's applications for permits pursuant to section 404 of the CWA and section 10 of the Rivers and Harbors Act (RHA).

One of the purposes of the EIS, for the federal land managing agencies, would be to assess conformance with the LRMP for each affected BLM District and National Forest, and to identify the need for, and disclose, any amendments to these LRMPs that may be necessary to authorize the Right-of-Way Grant and to issue temporary use permits. For the BLM, BOR, and USFS, the EIS would be the basis for issuing the BLM Record of Decision (ROD), and the USFS and BOR concurrence with the BLM decision. The ROD would also document the decisions by the BLM Oregon State Director and the Region 6 Regional Forester to approve site-specific amendments to their respective land use plans and issue other permits necessary for the construction and operation of the Pacific Connector pipeline on federal lands if the Right-of-Way Grant is issued.

Our analysis in this EIS focuses on facilities and actions that are under the FERC's jurisdiction. This EIS also includes the facilities and proposed actions that come under the jurisdiction of the cooperating agencies that would be integral elements of the Project. In addition, the EIS addresses the potential environmental impacts associated with the construction and operation of facilities and related activities not regulated by the FERC. These non-jurisdictional facilities include the NGL storage and rail car loading facilities adjacent to the LNG terminal, power and phone service to the Pacific Connector meter stations and compressor station, LDC facilities that would be constructed by Avista to transport gas it receives from Pacific Connector, and the interconnection between the Pacific Connector pipeline and the existing facilities of PG&E. (The non-jurisdictional facilities are discussed in more detail in section 2.2) The waterway to the LNG terminal is included to address the Coast Guard's proposed action of issuing an LOR for the Project.

The topics addressed in this EIS include a detailed description of the Project (chapter 2); alternatives (chapter 3); geology, including hazards (section 4.1); soils and sediments (section 4.2); water resources and wetlands (section 4.3); upland vegetation and timber (section 4.4); wildlife and aquatic resources including essential fish habitat (EFH) (section 4.5); threatened, endangered, and special status species (section 4.6); land use, recreation, and visual resources (section 4.7); socioeconomics (section 4.8); transportation (section 4.9); cultural resources (section 4.10); air quality and noise (section 4.11); reliability and safety (section 4.12); and cumulative impacts (section 4.13). This EIS describes the affected environment as it currently exists, discusses the environmental consequences of the proposed Project, and compares the Project's potential impacts to the potential impacts of a reasonable range of alternatives. This EIS also presents the FERC conclusions and recommended mitigation measures (chapter 5). The information and analyses presented in this EIS is also intended to support subsequent conclusions and decisions made by the cooperating agencies.

1.5 PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS

1.5.1 Other Federal Environmental Laws

Besides the NGA, EPAct, and the NEPA, the FERC and other federal cooperating agencies, including the Coast Guard, COE, BLM, BOR, and USFS, are required to comply with other federal laws that involve consideration of the Project's potential impact on a range of environmental resources. This includes compliance with the Endangered Species Act (ESA), the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the Marine Mammal Protection Act (MMPA), Migratory Bird Treat Act (MBTA), and the National Historic Preservation Act (NHPA). As the lead federal agency for the JCE & PCGP Project, the FERC

has undertaken the lead role for consultations under these statutes for itself and the cooperating agencies. The status of compliance with those acts is described in this EIS.

There are other federal agencies that must be consulted, or would issue permits or approvals based on these federal environmental laws, before this Project could be constructed. For example, the U.S. Department of the Interior Fish and Wildlife Service (FWS) must be consulted regarding compliance with the ESA and MBAT, and the U.S. Department of Commerce National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) must be consulted regarding compliance with the ESA, MSA, and MMPA. In order to comply with section 106 of the NHPA, the FERC must give the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking.

Other federal laws or regulations that require permits and approvals before this Project could be constructed include compliance with the RHA, CWA, CAA, Coastal Zone Management Act (CZMA), and Coast Guard regulations relating to LNG waterfront facilities. Some of these federal permits or approvals, such as section 401 of the CWA, CAA, and CZMA, have been delegated to state agencies, as discussed below. For example, the Oregon Department of Environmental Quality (ODEQ) has delegated responsibilities under the CWA and CAA, and the Oregon Department of Land Conservation and Development (ODLCD) has delegated responsibilities under the CZMA.

In accordance with section 313(d) of the EPAct, the FERC has responsibility to keep a complete consolidated record of all actions or decisions made by agencies undertaking federal authorizations. On October 19, 2006, in Order No. 687, the FERC issued implementing regulations regarding the maintenance of a consolidated record. Section 313(c) of the EPAct requires that the FERC establish a schedule for federal authorizations. Pursuant to Order No. 687, the FERC issued a Notice of Schedule for this Project on June 12, 2008.

While the EPAct amended the NGA to give exclusive authority to the FERC to approve or deny an application for the siting, construction, expansion, or operation of an LNG terminal, it specified that nothing in the Act was intended to overrule other federal authorities. This includes the protection of the rights of states with federally delegated responsibilities under the CZMA, CAA, and CWA.

Table 1.5-1 lists the major federal, state, and local permits, approvals, and consultations identified for construction and operation of the JCE & PCGP Project.

TABLE 1.5-1

Major Permits, Approvals, and Consultations for the JCE & PCGP Project

Agency	Authority/Regulation/ Permit	Agency Action	Status
FEDERAL			
FERC	Sections 3 and 7 of the NGA Section 311 of the EPAct 18 CFR 153, 157, 375, and 385 Order No. 687	Issue Approval of Place of Import and Authorization of Siting, Construction, and Operation of LNG Terminal Facilities (section 3a of NGA). Issue Certificate of Public Convenience and Necessity to construct, install, own, operate, and maintain a pipeline (section 7c of NGA).	Jordan Cove and Pacific Connector filed applications with the FERC on September 4, 2007. FERC decision is pending until after the final EIS is issued.
	NEPA 40 CFR 1500-1508 18 CFR 380.12	Prepare EIS.	Under preparation.

TABLE 1.5-1

Major Permits, Approvals, and Consultations for the JCE & PCGP Project

Agency	Authority/Regulation/ Permit	Agency Action	Status
ACHP	Section 106 of the NHPA 36 CFR 800	Has opportunity to comment on the undertaking.	Pending FERC review of final cultural resources reports, after consultations with Oregon State Historic Preservation Officer (SHPO).
Federal Communication Commission	License for fixed microwave stations and service	Review proposals for new or additions to existing communication station.	Pending.
U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS)	Farmland Protection Policy Act	Determine if the project would result in the permanent conversion of prime farmland.	Pending.
USFS	NEPA	Adopt EIS.	Pending.
	Special Use Permit	Review Permit.	Special Use Survey Permit issued 6/12/06.
	Amendments to Forest Plan	Amend Forest Plans.	Anticipated for 2009.
	Timber Sale Agreements	Reach Timber Sale Agreement.	Apply in 2009.
	Timber Clearing Permits	Issue Timber Clearing Permit.	Apply in 2009.
	Road Use Permits	Issue Road Use Permits.	Apply in 2009.
	Mineral Sale Permits	Mineral Sale Permit.	Apply in 2009.
	Fire Season Waivers	Fire Season Waivers.	Apply in 2010.
	Use of Staging Areas	Permit use of Staging Areas.	Apply in 2010.
	Industrial Camping	Permit Industrial Camping.	Apply in 2010.
	ROW Easement Grant	Consent to issue Right-of-Way Grant on NFS lands.	Pending.
COE	Section 10 of the RHA 33 CFR 320 to 330	Issue permit for activities that will occupy, fill, or grade land in a floodplain, streambed, or channel of a stream or other waters of the United States.	Port submitted first draft Joint Permit Application (JPA) to COE on September 4, 2007. COE issued a data request to the Port on October 23, 2007, and indicated that the Port put the project in abeyance in a letter dated December 19, 2007. Port submitted a revised JPA to the COE on April 22, 2008. Pacific Connector submitted its JPA to the COE in September 2007. COE review is pending; may not issue notice of application until after the FERC issues the draft EIS.
	Section 404 of the CWA	Issue permit for the placement of dredged or fill material into waters of the United States, including wetlands.	Port submitted revised JPA to the COE on April 22, 2008. Pacific Connector submitted its JPA to the COE in September 2007. COE review pending.
NMFS	Section 7 of the ESA	Consider lead agency determination of effects on federally listed species and their habitat. Provide a biological opinion (BO) if the project is likely to adversely affect such species or their habitat.	Applicant prepared draft biological assessment (BA) filed with the FERC on April 22, 2008. The FERC will produce its BA and EFH Assessment after the draft EIS is issued. NMFS would issue its BO pending review of the FERC's BA and EFH Assessment.
	MMPA 50 CFR 216	Consult on protected marine mammals.	Pending review of this EIS and the FERC's BA and EFH Assessment.
	MSA	Provide conservation recommendations for projects that may adversely impact EFH.	Pending review of the FERC's EFH Assessment.

TABLE 1.5-1

Major Permits, Approvals, and Consultations for the JCE & PCGP Project

Agency	Authority/Regulation/ Permit	Agency Action	Status
U.S. Department of Defense (DOD)	Section 311(f) of the EPAct and Section 3 of the NGA	Consult with the Secretary of Defense to determine whether an LNG facility would affect the training or activities of an active military installation.	On July 6, 2006, the FERC sent letters about the Project to the COE, Air Force Real Property Agency, Office of the Under Secretary of Defense, and Office of the Assistant Secretary of the Navy. On August 15, 2006, the Office of the Under Secretary of Defense responded indicating no objections to the Project.
DOE, Bonneville Power Administration (BPA)	Encroachment Permit for Electric Transmission Line Crossing	Permit review.	Pacific Connector anticipates submitting this permit request in 2009.
EPA	Section 404 of the CWA Section 309 of the CAA	Can veto wetland permits issued by the COE. Review EIS for compliance with CAA and the NEPA.	Pacific Connector submitted JPA in September 2007. Port submitted its revised JPA in April 2008. EPA review pending COE permit issuance and FERC issuance of EIS.
Coast Guard	33 CFR 127	Captain of the Port (COTP) issues an LOR determining the suitability of the waterway for LNG marine traffic.	Jordan Cove submitted Letter of Intent (LOI) to Coast Guard on April 10, 2006. Coast Guard accepted the LOI on April 27, 2006. LOR pending completion of the NEPA review.
	33 CFR 165	Establish safety and security zones for LNG vessels in transit and while docked.	Waterway Suitability Report (WSR) submitted to the FERC on July 1, 2008.
	Ports and Waterway Safety Act	Ensure navigation safety.	Pending.
	Maritime Transportation Act 33 CFR 101, 103, 104, 105	Develop LNG Vessel Management and Emergency Plan. Review and approve Facility Security Plan.	Pending.
	Navigation and Vessel Inspection Circular – Guidance on Assessing the Suitability of a Waterway for Liquefied Natural Gas Marine Traffic (NVIC 05-05)	Validate WSA and produce WSR.	Jordan Cove submitted initial draft WSA to Coast Guard on April 10, 2006; revised on September 4, 2007. Coast Guard submitted WSR to the FERC on July 1, 2008.
BLM	Section 28 of Mineral Leasing Act of 1920 43 CFR 2880	Issue Right-of-Way Grant for crossing federal lands for construction, operation, maintenance, and termination of 36-inch diameter natural gas pipeline.	Right-of-Way Application submitted by Pacific Connector to the BLM on April 17, 2006, and accepted on May 5, 2006.
		Road construction and use of BLM roads (may be authorized in Right-of-Way Grant).	Casual Use activities approved by BLM on May 5, 2006.
		Offsite compensatory mitigation (may be authorized in Right-of-Way Grant).	ROD pending FERC issuance of final EIS.
	Timber Harvest and Sale Authorization 43 CFR 5400	Authorize removal and sale of timber and other forest resources associated with land clearing for construction of the pipeline and ancillary facilities (may be authorized in Right-of-Way Grant).	Pending.
	Federal Land Policy and Management Act of 1976, as amended 43 CFR 1610	Land Use Plan Amendments - BLM must offer a 90-day comment period following the draft EIS and a 30-day protest period following issuance of final EIS and resolve protests prior to issuing the ROD.	Pending.

TABLE 1.5-1

Major Permits, Approvals, and Consultations for the JCE & PCGP Project

Agency	Authority/Regulation/ Permit	Agency Action	Status
	Archaeological Resources Protection Act of 1979 (ARPA) 16 USC 470aa-470,,	Cultural Resources Use Permit.	Survey permits approved June 2007.
BOR	NEPA	Adopt EIS.	Pending.
	Right-of-Way Easement Grant	Consent to issue Right-of-Way Grant.	Pending.
FWS	Section 7 of the ESA	Consider lead agency determination of effects on federally listed species and their habitat. Provide a BO if the project is likely to adversely affect such species or their habitat.	Applicant-prepared draft BA filed with the FERC on April 22, 2008. The FERC will produce its BA after the draft EIS is issued. FWS would issue its BO pending review of the FERC's BA.
	Fish and Wildlife Coordination Act	Provide comments to prevent loss of and damage to wildlife resources.	FWS has participated in interagency meetings, and will review BA.
	Migratory Bird Treaty Act	Review the proposed project for consistency with Executive Order 13186.	Pending review of this EIS and the FERC's BA.
DOT, PHMSA	Natural Gas Pipeline Safety Act 49 USC 601 49 CFR Parts 190-199	Administer national regulatory program to ensure the safe transportation of natural gas.	Pending.
DOT, Federal Aviation Administration (FAA)	18 CFR Subchapter E FAR Part 77	Notice of Proposed Construction Possibly Affecting Navigable Air Space.	Jordan Cove claims to have submitted draft Notice.
U.S. Department of the Treasury, Bureau of Alcohol, Tobacco, and Firearms	Explosives User Permit 27 CFR 555	Issue permit to purchase, store, and use explosives during project construction.	Permits to be obtained by Jordan Cove and Pacific Connector, as necessary, before construction.
STATE – OREGON			
Oregon Department of Agriculture (ODA)	Oregon Endangered Species Act Oregon Senate Bill 533 and Oregon Revised Statute (ORS) 564	Consult on Oregon listed plant species, and ODA would review botanical survey reports covering non-federal public lands prior to ground-disturbing activities where state listed botanical species are likely to occur.	Jordan Cove submitted botanical survey reports to the ODA in July, August, and October 2006. On September 15, 2006, ODA responded to Jordan Cove that it was in compliance with state laws, and no species should be adversely affected. ODA provided Pacific Connector with a list of state species on July 24, 2006. Pacific Connector included botanical survey report in its September 4, 2007, application to the FERC, and ODA review of that report is pending.
Oregon Department of Energy (ODE)	Section 311 of the EPAct	Furnish an advisory report on state and local safety and security issues to the FERC, and conduct operational safety inspections.	ODE filed its safety and security report to the FERC on October 4, 2007.
ODEQ	Section 401 of the CWA	Water quality certification. Issue National Pollutant Discharge Elimination System (NPDES) permits for discharge of hydrostatic test water, submerged combustion vaporizer (SCV) condensate, and stormwater.	Pacific Connector submitted its JPA in September 2007, and Port submitted its revised JPA in April 2008. ODEQ review is pending until after the COE issues a notice of application, and the counties issue land use compatibility statements (LUCS).

TABLE 1.5-1

Major Permits, Approvals, and Consultations for the JCE & PCGP Project

Agency	Authority/Regulation/ Permit	Agency Action	Status
	CAA	Issue air quality permit.	Pacific Connector submitted a draft Standard Air Contaminant Discharge Permit application to ODEQ on August 31, 2007. Jordan Cove submitted its air quality permit application to the ODEQ in September 2007. ODEQ review is pending.
	Water Pollution Control Facility Permit under Oregon Administrative Rule (OAR) 340-045	Issues permit for the disposal of solid wastes and waste water into public waters.	Pending.
	ORS 468B.300 et seq.	ODEQ to review and approve LNG vessel and facility spill contingency plans.	Pending.
Oregon Department of Fish and Wildlife (ODFW)	Fish and Wildlife Coordination Act and the Oregon Endangered Species Act under ORS 496, 506, and 509 and OAR 635	Consult on sensitive species and habitats that may be affected by the project and, in general, regarding conservation of fish and wildlife resources. Fish passage approval from ODFW needed for stream crossings.	Jordan Cove initiated consultations with ODFW on November 1, 2006. In May 2007, Pacific Connector consulted with ODFW regarding preliminary habitat categorization. ODFW participated in State and Federal Task Force. ODFW review pending issuance of this EIS.
	Fish and Wildlife HMP, OAR 345-022-0060	Consult on and approve fish and wildlife mitigation plan.	Draft applicant-prepared Mitigation Plan submitted with the draft BA under review.
Oregon Department of Forestry (ODF)	Easement on State lands Oregon Forest Practices Act OAR 629 ORS 477 ORS 527	Management of State Forest lands for Greatest Permanent Value, develops Forest Management Plans, stewardship under State's Land Management Classification System, monitors harvests of timber on private lands, and protects non-federal public and private lands from wildfires.	Pacific Connector anticipates submittal in 2008.
ODLCD	CZMA 15 CFR Part 930 ORS 196.435	Determine consistency with CZMA program policies.	Pacific Connector submitted a draft request for consistency to the ODLCD on September 4, 2007. The ODLCD indicated that the application was incomplete in a letter to Pacific Connector on October 4, 2007. Jordan Cove submitted a request for consistency to the ODLCD on September 4, 2007. The ODLCD determined the application was incomplete.
SHPO	Section 106 of the NHPA ORS 338.920	Review cultural resources reports and comment on recommendations for National Register of Historic Places (NRHP) eligibility and project effects. Issue permits for excavation of archaeological sites on non-federal public and private lands.	On October 2, 2006, the SHPO wrote a letter to Jordan Cove commenting on the LNG terminal inventory report and requesting revisions. On May 28, 2008, SHPO commented on report of a survey covering the proposed Port Commercial Sand Stockpile area. On July 11, 2008, SHPO commented on Pacific Connector pipeline inventory report.
Oregon Department of State Lands (ODSL)	Submerged and Submersible Land Easement OAR 141-122	Grant submerged land easements (e.g., waterbody crossings).	Pacific Connector anticipates submitting this permit application to the ODSL in 2009.

TABLE 1.5-1

Major Permits, Approvals, and Consultations for the JCE & PCGP Project

Agency	Authority/Regulation/ Permit	Agency Action	Status
	Joint Removal-Fill Permit, ORS 196.795-990 OAR 141-85-25-31, 115, 121, 126, 131 136, 141, 151	Approve removal or fill of material in waters of the state. ODSL must determine that proposed removal and fill activity would not be inconsistent with protection, conservation, and best use of water resources in the state. Compensatory mitigation required for projects that would impact wetlands or waters of the state.	Pacific Connector submitted its JPA in September 2007, Port submitted revised JPA in April 2008. ODSL reviewed Port's original JPA on October 4, 2007, and found it incomplete. ODSL informed Pacific Connector that it would not review the pipeline JPA pending documentation of landowner permission for waterbody crossings.
	Compensatory Wetland Mitigation Rules OAR 141-085-0121	Review and approve wetland mitigation plans.	Draft Mitigation Plan under review.
Oregon Department of Transportation (ODOT)	Section 303(c) DOT Act 49 CFR 303	Consultation and clearance letter regarding recreational land disturbance and construction-related traffic impacts.	Pending.
	Access Permit ORS 184, OAR 734-051 and 55	Issue permits to cross state funded roadways.	ODOT sent letter to the FERC commenting on the project on April 9, 2008. Permit submittal is pending.
Oregon Department of Water Resources (ODWR)	ORS 537, OAR 690-310	Issue permits to appropriate surface water and groundwater during project operation.	Pacific Connector anticipates submitting permit application in 2010. Pending for Jordan Cove.
	ORS 537, OAR 690-340	Issue limited licenses for temporary use of surface waters for hydrostatic testing and suction dredging.	Pending.
Oregon Public Utilities Commission (OPUC)	OAR 860-031	Inspect the natural gas facilities for safety.	Pending.
LOCAL			
Coos County	Multiple Land-use Permits and Approvals under CWA, CAA, and CZMA responsibilities delegated to the State of Oregon	Review consolidated applications for compliance. Issue permits and approvals.	Port submitted its land use application to Coos County on March 3, 2007. Jordan Cove submitted its land use application to Coos County on March 16, 2007. On November 7, 2007, Coos County approved Jordan Cove's application for an Administrative Conditional Use Permit. On July 15, 2008 the Land Use Board of Appeals remanded the application back to Coos County for wetlands and archaeological issues. Pacific Connector to submit its application for a LUCS in 2008.
	Section 311 of EPAct	Review and provide consultation regarding Jordan Cove's Emergency Response Plan (ERP).	Jordan Cove to submit ERP prior to construction.
	Shoreline Management Act	Issue Shoreline Development Permit to cross waterbodies covered by the Shoreline Management Act.	Pending.
Douglas County	Land use permits required as part of the NPDES permit application delegated to the Sate of Oregon under section 402 of the CWA	Douglas County has stated to Pacific Connector at it will not require a land use process and will affix a statement to the LUCS.	Pending.
Jackson County	Land use permits required as part of the NPDES permit application delegated to the Sate of	Land use permits necessary for the Shady Cove Meter Station and the Butte Falls Compressor Station.	Permit applications submitted by Pacific Connector early in December 2007.

TABLE 1.5-1

Major Permits, Approvals, and Consultations for the JCE & PCGP Project

Agency	Authority/Regulation/ Permit	Agency Action	Status
	Oregon under section 402 of the CWA		
Klamath County	Land use permits required as part of the NPDES permit application delegated to the Sate of Oregon under section 402 of the CWA	Klamath County has stated to Pacific Connector that it will not require a land use process and will affix a statement to the LUCS.	Pending.
All Counties	Road Crossing Permits	Review permits to cross county roads.	Pending.
	Grading Permits	Review permits for excavation and grading activities.	Pending.
	Solid Waste Disposal	Review permits for disposal of solid waste generated by construction.	Pending.

1.5.1.1 Endangered Species Act

Section 7 of the ESA, as amended, states that any project authorized, funded, or conducted by a federal agency should not "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined...to be critical" (16 USC section 1536(a)(2)(1988)). The lead federal agency, or the applicant as a non-federal party, is required to consult with the FWS and the NMFS to determine whether any federally listed or proposed endangered or threatened species or their designated critical habitat occur in the vicinity of the proposed Project. If, upon review of existing data or data provided by the applicant, one (or both) of the two federal agencies determine that these species or habitats may be affected by the proposed Project, the FERC is required to prepare a BA to identify the nature and extent of adverse impacts, and to recommend measures that would avoid the habitat and/or species, or would reduce potential impacts to acceptable levels.

Jordan Cove and Pacific Connector filed an applicant-prepared draft BA on April 22, 2008. The FERC will review the draft and submit a final BA for the JCE & PCGP Project to the NMFS and FWS after the issuance of this draft EIS. Because we have found that the Project is likely to adversely affect some listed species our BA will request that the FWS and NMFS develop a BO as to whether authorizing the JCE & PCGP Project may jeopardize the continued existence of any species. See section 4.6 of this EIS for details of our ESA analysis.

1.5.1.2 Magnuson-Stevens Fishery Conservation and Management Act

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance EFH for those species regulated under a federal fisheries management plan. The MSA requires federal agencies to consult with the NMFS on all actions or proposed actions authorized, funded, or undertaken by the agency that may adversely affect EFH (MSA section 305(b)(2)). Although absolute criteria have not been established for conducting EFH consultations, the NMFS recommends consolidated EFH consultations with interagency coordination procedures required by other statutes, such as the NEPA, the Fish and Wildlife Coordination Act, or the ESA to reduce duplication and improve efficiency (50 CFR 600.920(e)). As part of the consultation process for this Project, we consolidated an EFH Assessment with the BA prepared pursuant to the ESA, on

behalf of the FERC and the federal cooperating agencies for this Project. See section 4.5.4.8 of this EIS for the status of the MSA review.

1.5.1.3 Marine Mammal Protection Act

All marine mammals are protected under the MMPA of 1972. This act was amended by the U.S. Congress in 1994. The MMPA prohibits, with certain exceptions, the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas and the importation of marine mammals and marine mammal products into the United States. The term "take," as defined in section 3 of the MMPA, means "to harm, hunt, capture, or kill, or attempt to harass, hunt, capture or kill any marine mammal" (16 USC section 1362(13)). "Harassment" is also defined in the MMPA (at USC section 1362(18)) and in regulations promulgated by the NMFS (at 50 CFR 216.3).

Sections 101(a)(5)(A) and (D) of the MMPA direct the U.S. Secretary of Commerce, through the NMFS, to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals of a species or population stock by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specific geographic region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of authorization is provided to the public for review. Authorization would be granted by the NMFS if it finds that the taking will have a negligible impact on the species or stock, will not have an unmitigatable adverse impact on the availability of the species or stock for subsistence uses (where relevant), and it prescribes permissible methods of taking, and requirements pertaining to the mitigation, monitoring, and reporting of such taking. NMFS has defined "negligible impact" as "an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock though effects on annual rates of recruitment or survival."

The NMFS may use relevant portions of this EIS during its review, and may adopt measures to protect marine mammals outlined in this EIS. It may also require additional mitigation and monitoring measures to ensure that the taking result in the least practicable adverse impact on affected marine mammal species or stocks. The public would have an opportunity to comment to the NMFS in response to its Notice of Receipt of an application for an Incidental Harassment Authorization, or a request for the implementation of regulations governing incidental taking, and following the publication of the proposed rule.

Impacts from the JCE & PCGP Project on marine mammals are discussed in section 4.5. In addition, marine mammals listed under the ESA will be discussed in detail in the BA and EFH Assessment.

1.5.1.4 National Historic Preservation Act

Section 106 of the NHPA requires that federal agencies take into account the effects of their undertakings on historic properties and afford the ACHP an opportunity to comment. Historic properties include prehistoric or historic sites, districts, buildings, structures, objects, or properties of traditional religious or cultural importance listed on or eligible for listing on the NRHP. The FERC has requested that Jordan Cove and Pacific Connector, as non-federal parties, assist in preparing the necessary information and analyses as required by the ACHP procedures in 36 CFR 800.

As the lead federal agency, it is the FERC's responsibility, under section 106 and its implementing regulations, to consult with the Oregon SHPO, identify historic properties within the area of potential effect (APE), and make determinations of NRHP eligibility and project effects, on behalf of all the cooperating agencies. See section 4.10 of this EIS for a detailed discussion of compliance with the NHPA.

1.5.1.5 Rivers and Harbors Act

Section 10 of the RHA (33 USC section 403) regulates any work or structures that potentially affect the course, condition, or capacity of a navigable waterway. It requires authorization from the COE for building any wharfs, piers, jetties, or other structures or excavating or filling in any port, navigable river, or other waters of the United States.

The Port (as the applicant for the proposed access channel and slip) and Pacific Connector submitted JPA under section 10 of the RHA to the COE in September 2007. However, the Port's application was later withdrawn, and resubmitted in April 2008. Section 4.3 of this EIS discusses impacts on water resources that may be applicable to compliance with the RHA.

1.5.1.6 Clean Water Act

The CWA (33 USC section 1344) addresses the issue of managing developments to improve, safeguard, and restore the quality of the nation's waters, including coastal waters, and to protect the natural resources and existing uses of those waters. Under section 404 of the CWA, the COE issues permits (after notice and opportunity for public hearings) for the discharge of dredged or fill material into waters of the United States at specified disposal sites. The EPA has the authority to review and veto COE decisions on section 404 permits.

Jordan Cove and Pacific Connector must obtain Water Quality Certifications pursuant to section 401 of the CWA and NPDES permits pursuant to section 402 of the CWA. The federal authority to issue these certifications and permits has been delegated to the ODEQ in Oregon.

In addition, the ODSL would need to issue a removal and fill permit, which is currently prepared as a JPA with the section 404 and section 10 permits. The applications for permits under 401 of the CWA and the ODSL removal and fill permit are part of the JPAs that were submitted by Pacific Connector in September 2007 and the revised application submitted by the Port in April 2008. For other projects in Oregon, the ODEQ indicated that it would not begin processing of permit applications until after the COE has issued its notice of applications, and the applicants provide LUCS issued by the affected counties (ODEQ 2007a). The COE indicated that it would notice the applications after the FERC issues the draft EIS. Section 4.3 of this EIS discusses impacts on water resource that may be applicable to compliance with the CWA.

1.5.1.7 Clean Air Act

The primary objective of the CAA, as amended, is to establish federal standards for various pollutants from both stationary and mobile sources, and to provide for the regulation of polluting emissions via state implementation plans. In addition, the CAA is designated to prevent significant deterioration in certain areas where air quality exceeds national standards and to provide for improved air quality in areas that do not meet federal standards (non-attainment areas).

The EPA has regulatory authority under the CAA. Section 309 of the CAA directs EPA to review and comment in writing on environmental impacts associated with all major federal actions. The EPA has delegated permitting authority under the CAA to the ODEQ in Oregon. Emissions from all phases of construction and operation of the proposed LNG terminal and pipeline would be subject to applicable federal and state air regulations.

Pacific Connector submitted a draft application for a Standard Air Contaminant Discharge Permit to the ODEQ on August 31, 2007. Jordan Cove submitted its air quality permit application to the ODEQ on September 4, 2007. For other projects in Oregon, ODEQ has indicated it would not begin to process applications until after it receives a LUCS from the affected counties. Section 4.11.1 of this EIS has a detailed discussion of air quality issues.

1.5.1.8 Coastal Zone Management Act

In 1972, Congress passed the CZMA to "preserve, protect, develop, and where possible, to restore or enhance, the resources of the nation's coastal zone for this and succeeding generations" and to "encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone" (16 USC section 1452, section 303 (1) and (2)).

Section 307 (c)(3)(A) of the CZMA states that "any applicant for a required federal license or permit to conduct an activity, in or outside the coastal zone, affecting any land or water use or natural resource of the coastal zone of that state shall provide a certification that the proposed activity complies with the enforceable policies of the state's approved program and that such activity will be conducted in a manner consistent with the program." In order to participate in the coastal zone management program, a state is required to prepare a program management plan for approval by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of Coast and Ocean Resource Management (OCRM). Once the OCRM has approved a plan and its enforceable program policies, a state program gains "federal consistency" jurisdiction. This means that any federal action (e.g., a project requiring federally issued licenses or permits) that takes place within a state's coastal zone must be found to be consistent with state coastal policies before the federal action can take place.

All components of the Jordan Cove LNG terminal, and the Pacific Connector pipeline from MP 0.0 to approximately MP 46 are within the designated Oregon coastal zone and are subject to federal CZMA review. The ODLCD is the state's designated coastal management agency and has established the Oregon Coastal Management Program (OCMP). The program's mission is to work in partnership with coastal local governments, state and federal agencies, and other stakeholders to ensure that Oregon's coastal and ocean resources are managed, conserved, and developed consistent with statewide planning goals. To accomplish this mission, the program combines various state statutes for managing coastal lands and waters into a single, coordinated package. These include: 1) the 19 Statewide Planning Goals, which are Oregon's standards for comprehensive land use planning; 2) city and county comprehensive land use plans; and 3) state agencies and natural resource laws such as the Oregon Beach Bill and the Removal-Fill Law.

Under the provisions of the CZMA, Jordan Cove and Pacific Connector must provide a certification to the FERC and the ODLCD that their projects comply with and would be conducted in a manner consistent with the state's approved management program (15 CFR

930.50 Subpart D). Jordan Cove and Pacific Connector each submitted draft requests for consistency determinations to the ODLCD in September 2007. The ODLCD has indicated that these applications are currently incomplete. See section 4.7.3.2 of this EIS for further information regarding compliance with the CZMA.

1.5.2 Federal Agency Reviews

1.5.2.1 Coast Guard Review

The Coast Guard exercises regulatory authority over LNG facilities that affect the safety and security of port areas and navigable waterways under Executive Order 10173; the Magnuson Act (50 USC section 191); the Ports and Waterways Safety Act of 1972, as amended (33 USC section 1221 et seq); and the Maritime Transportation Security Act of 2002 (46 USC section 701). The Coast Guard is responsible for matters related to navigation safety, vessel engineering and safety standards, and all matters pertaining to the safety of the facilities or equipment located in or adjacent to navigable waters up to the last valve immediately before the receiving tanks. The Coast Guard also has authority for LNG facility security plan review, approval, and compliance verification as provided in 33 CFR 105, and siting as it pertains to the management of vessel traffic in and around the LNG facility. As required by its regulations, the Coast Guard is responsible for issuing an LOR as to the suitability of the waterway for LNG marine traffic. Issuance of the LOR would be based on the following items:

- physical location and description of the facility;
- the LNG vessel's characteristics and the frequency of LNG shipments to or from the facility;
- waterway channels and commercial, industrial, environmentally sensitive, and residential areas in and adjacent to the waterway used by LNG vessels en route to the facility, within 25 kilometers (15.5 miles) of the facility;
- density and character of marine traffic in the waterway;
- locks, bridges, or other manmade obstructions in the waterway;
- depth of water;
- tidal range;
- protection from high seas;
- natural hazards, including reefs, rocks, and sandbars;
- underwater pipes and cables; and
- distance of berthed vessels from the channel and the width of the channel.

In accordance with 33 CFR 127.007, each applicant must submit a LOI to the local COTP to begin the LOR process. Jordan Cove submitted an LOI to the Coast Guard for the Project on April 10, 2006. On April 27, 2006, the Coast Guard notified Jordan Cove that the LOI submission was complete and the Coast Guard would begin the process of assessing the safety and security issues associated with LNG traffic.

On June 14, 2005, the Coast Guard issued a *Navigation and Vessel Inspection Circular – Guidance on Assessing the Suitability of a Waterway for Liquefied Natural Gas (LNG) Marine Traffic* (NVIC 05-05). The purpose of this Navigation and Vessel Inspection Circular (NVIC) is to provide guidance to applicants seeking to construct and operate shore-side LNG import terminals regarding the timing and scope of the Coast Guard process necessary for the

consideration of safety and security issues, including LNG marine traffic. NVIC 05-05 itemizes data to be included in a WSA to be produced by an applicant, and outlines the roles of the COTP and Federal Maritime Security Coordinators (FMSC) in the review and validation of the WSA by the Coast Guard.

Jordan Cove submitted a preliminary WSA to the Coast Guard on April 10, 2006, and a revised WSA on September 4, 2007. The Coast Guard reviewed the WSA and produced its WSR on July 1, 2008. The public portion of the WSR is attached to this EIS as Appendix B. See sections 4.12.5 through 4.12.8 of this EIS for additional discussion of marine safety.

1.5.2.2 U.S. Army Corps of Engineers Review

The COE is the primary agency responsible for issuing dredging and wetland permits pursuant to section 404 of the CWA and section 10 of the RHA. Pacific Connector and the Port submitted their JPA to the COE in September 2007. In an October 23, 2007 letter to the Port, the COE acknowledged submittal of the JPA, but indicated it would only review the permit application if it could be demonstrated that the Port's proposal was independent of the Jordan Cove LNG Project. In a letter to the Port dated December 19, 2007, the COE indicated that the application was put in abeyance by the Port. The Port submitted a revised JPA to the COE on April 22, 2008.

The COE would process the applications in accordance with its regulations at 33 CFR Parts 320 through 330. The COE intends to issue its notice of applications after the release of the FERC's draft EIS. The COE would hold joint public meetings with the ODEQ and ODSL to take comments on the applications after it issues the notice. We discuss issues pertaining to the COE permits under water resources and wetlands in section 4.3.

1.5.2.3 U.S. Environmental Protection Agency Review

The EPA has the authority to overrule the COE decision with regard to issuing a permit under section 404 of the CWA. In addition, section 309 of the CAA directs EPA to review and comment on an EIS issued by a federal agency regarding actions that may affect air quality. Also, under its own policies and procedures, the EPA would evaluate a federally issued EIS for adequacy in meeting the requirements of the NEPA. Section 4.3 of the EIS discusses issues related to water quality relevant to compliance with the CWA, while section 4.11 discusses air quality issues relevant to compliance with the CAA.

1.5.2.4 Federal Land-Managing Agencies

Portions of the Pacific Connector pipeline would cross lands administered by the BLM, USFS, and BOR. Because these agencies must comply with the Standards and Guidelines of their respective LRMPs, as amended, and the requirements of the NEPA before granting or amending rights-of-way across lands under their management, these agencies have elected to act as cooperating agencies in preparing this EIS. Table 1.5.2.4-1 lists each LRMP that the Pacific Connector pipeline would be required to comply with. This EIS incorporates each of these LRMPs by reference.

TABLE 1.5.2.4-1

BLM, USFS, and BOR Land Use Plans the Pacific Connector Project Must Comply With and that are Incorporated into this EIS by Reference

BLM District, USFS National Forest, or BOR Region	Approximate MP Range of Pacific Connector Project	Applicable Land Use Plans
BLM		
Coos Bay District - Umpqua and Myrtlewood Resource Area	17.04 -27.48, 28.4 – 45.7	Coos Bay District Record of Decision and Resource Management Plan (June 1995)
Roseburg District - South River Resource Area	46.8 – 102.3	Roseburg District Record of Decision and Resource Management Plan (June 1995)
Medford District - Ashland and Butte Falls Resource Area	115.1 – 141.9, 148.8 – 153.8	Medford District Record of Decision and Resource Management Plan (June 1995)
Lakeview District - Lakeview Resource Area	176.0 – 216.7	Lakeview District Record of Decision and Resource Management Plan (June 1995)
USFS		
Umpqua National Forest – Tiller Ranger District	99.3 – 113.2	Umpqua National Forest Land and Resource Management Plan (1990)
Rogue River-Siskiyou National Forest – Ashland Ranger District	153.8 – 167.9	Rogue River-Siskiyou National Forest Land and Resource Management Plan (1990)
Freemont-Winema National Forest – Klamath Ranger District	167.9 – 175.4	Winema National Forest Land and Resource Management Plan (1990)
BOR		
MP Region	200.5 – 214.18	Klamath Office Management Plan

The BLM, USFS, BOR would use the EIS to meet their NEPA responsibilities in considering Pacific Connector's application for a Right-of-Way Grant and obtain a Temporary Use Permit for the portion of the Project on federal lands. The BLM and USFS would also use the EIS to consider amending their respective local land use plans, which would be necessary for pipeline construction across BLM-, BOR-, and USFS-administered lands. As cooperating agencies, the BLM, BOR, and USFS would adopt the EIS per 40 CFR 1506.3(c) if, after an independent review of the document, they conclude that their comments and suggestions have been satisfied.

Under section 185(f) of the MLA, the BLM has the authority to issue Right-of-Way Grants for all affected federal lands. This would be in accordance with 43 CFR Parts 2800 and 2880, subsequent 2800 and 2880 Manuals, and Handbook 2801-1. The BLM would consider factors including conformance with land use plans and impacts on resources and programs to determine whether to issue a Right-of-Way Grant.

Pacific Connector submitted its Right-of-Way Application to the BLM on April 17, 2006. At the same time, Pacific Connector requested approval of a Casual Use Permit, and entered into a Cost Reimbursement Agreement with the BLM and USFS. On May 31, 2006, Pacific Connector applied for cultural resources survey permits under the FLMPA. The BLM approved the Casual Use permit application on May 5, 2006, and approved the cultural resources survey permit on June 6, 2006.

The USFS would use the EIS to concur or not concur with the issuance of the Right-of-Way Grant by the BLM and to identify, analyze, and disclose any land use plan amendments that would be necessary to implement the proposed action. The USFS would prepare a ROD to document the Regional Forester's decision to amend, or not amend, any Forest LRMPs.

The USFS would also use the EIS to issue Temporary Use Permits on USFS lands. These permits may be incorporated into the BLM Right-of-Way Grant as "standard and site-specific stipulations," but they would in fact be separate permits detailing stipulations, responsibilities, and costs to Pacific Connector (commensurate share – either collections or maintenance)

associated with all aspects of the pipeline construction project, including the hauling of cleared timber, as spelled out in 36 CFR 212.5(c) and (d) and 36 CFR 228.47(e) (July 2005 edition). These permits would include Road Use Permits, Special Use Permits to conduct timber sales, and Snow Plowing Permit. In April 2006, Pacific Connector applied for a Special Use Permit and Survey Permit from the USFS. These were approved by the USFS on June 12, 2006.

The BLM would consult with the other federal land-managing agencies before making a decision to issue the Right-of-Way Grant. The BLM's decision would be documented in a ROD. The Right-of-Way Grant would include among other things standard and site-specific stipulations obtained from the BLM, BOR, and USFS; conditions and mitigation measures identified in the EIS; and terms and conditions contained in the BOs issued by the FWS and NMFS. Before issuing a Notice to Proceed to allow for actual construction on federal lands, Pacific Connector would be required to submit a complete Plan of Development (POD) and obtain approval from the land-managing agencies.

The BOR could adopt the EIS to document the decision to issue, or not issue, the Right-of-Way Grant and to issue Temporary Right-of-Entry Permits on BOR-administered lands to construct the pipeline. The BOR would also use the EIS to identify, analyze, and disclose any Plan amendments that would be necessary to implement the proposed action. The ROD would also document the decision to amend, or not amend, and Plans. Depending on the decision, the BOR would issue a letter to the BLM that would concur or not concur with the issuance of a Right-of-Way Grant across its lands. These permits may be covered under the BLM Right-of-Way Grant with standard and site-specific stipulations, but they would in fact be separate permits detailing stipulations, responsibilities, and costs to Pacific Connector associated with all aspects of the pipeline construction project. Details of land ownership are presented in section 4.7.3.1 of this EIS. Consistency with LRMPs is discussed in section 4.7.4.4.

1.5.2.5 U.S. Department of Defense Consultation

We have consulted with the DOD, as required by section 311(f) of the EPAct and section 3 of the NGA, to determine if there would be any impacts associated with the Project on military training or activities on any active military installations. No comments or concerns were received from any branch of the military or a military installation in response to the FERC's Notice of Intent to Prepare and Environmental Impact Statement (NOI) issued June 23, 2006.

In letters dated July 6, 2006, to appropriate property managers and installation supervisors at the Pentagon, representing the U.S. Army, U.S. Air Force, and U.S. Navy, we informed various offices of the DOD about the JCE & PCGP Project and requested any information on potential impacts on military installations. In response, we received a letter, dated August 15, 2006, from Dr. Get Moy, Director of Installations Requirements and Management in the Office of the Under Secretary of Defense, stating that there were no objections from the DOD to the Project, pending approvals by the COE.

1.5.3 Other State Agency Permits and Approvals

In addition to the federal permitting authorities that have been delegated to the states, as discussed above, various laws and regulations promulgated by the state of Oregon have relevance to the JCE & PCGP Project. The Coast Guard also worked with representatives of the state of Oregon in reviewing the WSA for the Project.

The FERC encourages cooperation between applicants and state and local authorities, but this does not mean that state and local agencies, through application of state and local laws, may prohibit or unreasonably delay the construction or operation of facilities approved by the FERC. Any state or local permits issued with respect to FERC-regulated facilities must be consistent with the conditions of any Certificate the FERC may issue.[9]

Oregon permits and authorizations relevant to the JCE & PCGP Project are listed in table 1.5-1. Major Oregon permits and authorizations are discussed below.

1.5.3.1 Oregon Department of Energy

According to the EPAct, the Governor of a state in which an LNG terminal is proposed is to designate an appropriate state agency to consult with the Commission. That state agency should provide the FERC with an advisory report on state and local safety concerns, within 30 days of the FERC's notice of an application for an LNG terminal, for the Commission to consider prior to making a decision. The ODE has been designated by the Governor of Oregon as the state agency to coordinate the review of proposed LNG projects by other state agencies and consult with the FERC.

On May 9, 2006, we wrote a letter to the ODE requesting participation in the production of this EIS as a cooperating agency. The ODE responded, in a letter dated May 18, 2006, that while it would cooperate in the Pre-filing review of the proposed JCE & PCGP Project, it could not agree to be a cooperating agency for the production of the EIS, because it wanted to retain its right to intervene. On July 20, 2006, the ODE presented comments on the Project, in response to the FERC's NOI issued June 23, 2006. On October 4, 2007, ODE filed a motion to intervene. That same day, the ODE provided the FERC with its Safety Advisory Report. We address the Safety Advisory Report is section 4.12.9 of this EIS. In addition, we have attached a copy of the ODE Safety Advisory Report and our responses as Appendix C of this EIS.

1.5.3.2 Oregon Department of State Lands

Under Oregon's Removal-Fill Law (ORS 196.795-990), permits are issued by the ODSL for:

- projects requiring the removal or fill of 50 cubic yards or more of material in waters of the state;
- the removal or fill of any material regardless of the number of cubic yards affected in a stream designated as essential salmon habitat; and
- the removal or fill of any material from the bed and banks of scenic waterways regardless of the number of cubic yards affected.

All permits include standard and special design and operating conditions that are intended to ensure the protection, conservation, and best use of the state's water resources and to prevent harm to fishery and recreational uses of the waters. A common condition is that the project be conducted during the "in-water work period" established by the ODFW for the specific waterbodies. For projects involving impacts on wetlands, compensatory mitigation to offset loss of wetland resources is required per OAR 141-085-0121.

[9] See, *e.g.*, *Schneidewind v. ANR Pipeline Co*., 485 U.S. 293 (1988); *National Fuel Gas Supply v. Public Service Commission*, 894 F.2d 571 (2n Cir. 1990); and Iroquois Gas Transmission System, L.P., *et al.*, 52 FERC 61,091 (1990) and 59 FERC 61,094 (1992).

A JPA is used to obtain an Oregon Removal-Fill Permit from the ODSL, and COE permits under section 10 of the RHA and section 404 of the CWA as described above. The Port and Pacific Connector submitted their original JPAs to both the ODSL and the COE in September 2007. On October 4, 2007, the ODSL informed the Port that its JPA was incomplete. The Port resubmitted its JPA in April 2008. The ODSL indicated to Pacific Connector that it would not process an application for a removal and fill permit for the pipeline pending documentation of landowner permission for crossing waterbodies. This EIS addresses issues relevant to compliance with the RHA and CWA that also relate to Oregon's Removal and Fill Law, under the discussion of potential issues on water resources and wetlands in section 4.3.

1.5.3.3 Oregon Department of Agriculture

The ODA maintains the state list of endangered and threatened species, in accordance with OAR Chapter 603, Division 73, and reviews reports of botanical surveys under Oregon Senate Bill 533 and its corresponding ORS 564. These state laws and regulations require surveys for state listed species on non-federal public lands prior to ground-disturbing activities, unless habitat for the species does not exist in the Project area.

In June 2005, Jordan's Cove's consultant, SHN Consulting Engineers & Geologists, Inc. (SHN), consulted with ODA about protocols for botanical surveys, and obtained a list of state-listed plants and their blooming periods for the Project area. In July, August, and October 2006, Jordan Cove submitted botanical survey reports to the ODA. On September 15, 2006, ODA wrote a letter indicating that the botanical survey of the proposed LNG terminal site met its requirements, that the JCE & PCGP Project would probably not have any adverse effects on state-listed species, and no further consultations were necessary.

Pacific Connector initiated consultations with the ODA in July 2006, to obtain a list of state-listed plant species that may occur along the pipeline route. Pacific Connector's botanical survey report was included with its application to the FERC. However, Pacific Connector has not yet filed the ODA review of that report. Section 4.6 of this EIS addresses potential project impacts on protected botanical resources.

1.5.3.4 Oregon Department of Fish and Wildlife

The ODFW is responsible for keeping the state sensitive fish and wildlife list and developing the state's Wildlife Diversity Plan. The purpose of the Fish and Wildlife Habitat Mitigation Policy (OAR 345-022-0060) developed by the ODFW is to apply consistent goals and standards to mitigate impacts on fish and wildlife habitat caused by land and water development actions. The policy provides goals and standards for general application to individual development actions, and for the development of more detailed policies for specific classes of development actions or habitat types. In implementing this policy, the ODFW will recommend or require mitigation for losses of fish and wildlife habitat resulting from development actions. Priority is given for native species. Both Jordan Cove and Pacific Connector have voluntarily agreed to categorize habitat on non-federal lands and seek mitigation of impacts on wildlife in a manner consistent with the ODFW's policies.

Jordan Cove requested a list of state sensitive fish and wildlife species from the ODFW in a letter dated August 24, 2006. Jordan Cove's consultants sent outlines of survey strategies to the ODFW in August 2005. On May 10, 2006, JBJ Enterprises, on behalf of Jordan Cove, produced

a report of wildlife surveys conducted at the proposed LNG terminal in 2005-2006. Alice Berg & Associates produced a Fisheries Report for Jordan Cove in October 2006. Copies of these reports were included in Jordan Cove's application to the FERC. Jordan Cove provided copies of their fish and wildlife studies to the ODFW in July 2006, but has not yet filed the ODFW comments on these reports.

Pacific Connector included copies of biological survey reports with its application to the FERC. Appendix 3G of Pacific Connector's environmental Resource Report 3 presented its ODFW Habitat Categorization Process. However, Pacific Connector has not yet documented that these reports were reviewed by the ODFW. Representatives of ODFW participated in the State and Federal Interagency Task Force for this Project, as discussed below in section 1.6.

Section 4.5.2 includes a detailed discussion of Jordan Cove's and Pacific Connector's ODFW's Habitat Mitigation Policy. Section 4.6.3 discusses potential Project-related impacts on state-listed fish and wildlife species.

1.5.3.5 Oregon Department of Forestry

The ODF manages State Forests for the Greatest Permanent Value. The ODF has created a Forest Management Plan to provide strategic direction and guide management activities. Part of the plan is to identify multi-purpose objectives, and protect sensitive resources according to the state's Land Management Classification System. The ODF also monitors the commercial harvest of forest products from private timber lands, according to the Oregon Forest Practices Act. The ODF is responsible for protection of non-federal and private forest lands from wildfires. This EIS discusses potential Project-related impacts on forest in section 4.4.

1.5.3.6 State Historic Preservation Office

The FERC, as the lead federal agency, on behalf of the cooperating agencies, must consult with the SHPO regarding the identification, evaluation, and determination of effects on historic properties, in accordance with the ACHP's regulations at 36 CFR 800 for implementing section 106 of the NHPA. The SHPO also has authorities, under ORS 358.920, to issue permits for cultural resources surveys on non-federal public land, and for the excavation of archaeological sites on non-federal public and private lands. Consultations with the SHPO and compliance with the NHPA are discussed in section 4.10.

1.6 PUBLIC REVIEW AND COMMENT

The environmental review of the JCE & PCGP Project began with the initiation of the FERC's Pre-filing Review Process. On April 11, 2006, Jordan Cove and Pacific Connector requested that the FERC initiate the Pre-filing Review Process for the Project, and the FERC agreed on May 1, 2006, selecting Tetra Tech EC, Inc. (Tetra Tech) as our third-party environmental contractor.

Jordan Cove and Pacific Connector hosted a series of open houses in the project area, on June 12, 2006 in North Bend, Oregon; on June 13, 2006, in Canyonville, Oregon; on June 14, 2006, in Klamath Falls, Oregon; and June 15, 2006, in Shady Cove, Oregon, to inform the public about their Project. In addition, the FERC issued a notice, on June 2, 2006, inviting the public to participate in site visits with staff on June 9 and 13, 2006, and notifying the public that staff

would be attending the open houses conducted by Jordan Cove and Pacific Connector between June 12 and 15, 2006.

The FERC staff also attended initial interagency meetings to discuss the Project, in Portland and Salem, Oregon, on June 8, 2006, and in Roseburg, Oregon, on June 9, 2006. Agencies that had representatives at these meetings included the Coast Guard, BLM, USFS, COE, EPA, NMFS, FWS, Oregon Department of Geology and Mineral Industries (DOGAMI), OPUC, Oregon Department of Parks and Recreation (ODPR), ODWR, ODLCD, ODEQ, ODE, ODFW, Douglas County, City of North Bend, City of Coos Bay, and the Cow Creek Tribe. Notes from all interagency meetings were placed into the FERC's public record for the Project.

On June 23, 2006, the FERC issued a Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Jordan Cove LNG and Pacific Connector Gas Pipeline Projects, Request for Comments on Environmental Issues, and Notice of a Joint Public Meeting. The NOI, issued jointly with the Coast Guard, was sent to more than 1,000 interested parties including federal, state, and local officials; agency representatives; conservation organizations; local libraries and newspapers; and property owners within 0.5 mile of the proposed LNG terminal and along the proposed pipeline route. Issuance of the NOI officially opened the public comment period and established a closing date, of July 24, 2006, for receiving written comments. In total, more than 280 letters were received in response to the NOI by that closing date. However, the FERC considered all comments received during the Pre-filing review period, prior to the date when Jordan Cove and Pacific Connector filed their official applications, in shaping the scoping issues to be addressed in this EIS.

As noticed in the NOI, the FERC conducted four public scoping meetings in the Project area to provide an opportunity for the public to learn more about the proposed Project and to provide comments on environmental issues to be addressed in this EIS. Public meetings were held on July 10, 2006, at the Umpqua Community College in Roseburg; on July 11, 2006, at the Southwestern Oregon Community College in Coos Bay; on July 12, 2006, at the Red Lion Inn in Medford; and on July 13, 2006, at the Oregon Institute of Technology in Klamath Falls. The meeting in Coos Bay was held jointly with the Coast Guard. Statements were made by 94 speakers at the public meetings and a transcript of the scoping meetings and all written comments provided at the meeting have been entered into the public record for the JCE & PCGP Project.

In addition, on January 8, 2007, the FERC issued a Notice of Informational Meetings for the Proposed Jordan Cove LNG and Pacific Connector Gas Pipeline Projects. Also participating in the meetings were staff from agencies that are cooperating with the FERC in the production of the EIS, including the BLM and USFS. Public meetings were held on January 23, 2007 at the Umpqua Community College in Roseburg; on January 24, 2007 at the North Bend Community Center in North Bend; and January 25, 2007 at the Red Lion Inn in Medford. Notes from these meetings were placed into the FERC's public record for the Project.

On May 21, 2006, the BLM published a notice in newspapers of local circulation (*The Oregonian*, *Roseburg News Review*, *The World* [Coos Bay], *Mail Tribune and Daily Courier* [Medford], and the *Herald and News* [Klamath Falls]) announcing the receipt of the Pacific Connector right-of-way application and the availability of the documents for public review. The BLM also sent similar notices to the Governor of Oregon, the heads of each local or tribal

government or jurisdiction within which the pipeline is located, and the heads of other federal agencies whose jurisdiction includes lands within the pipeline project. On May 8, 2006, the BLM notified the Chairman of the Committee on Energy and Natural Resources of the United States Senate of receipt of the Pacific Connector right-of-way application. Congressional notification is required for pipelines 24 inches or more in diameter.

In addition to the public notice and scoping process discussed above, the FERC staff conducted agency consultations and participated in interagency meetings with other key federal and state agencies to identify issues that should be addressed in this EIS. During the Pre-filing Review period, five interagency meetings were held in Portland, Oregon; six interagency meetings were held in Roseburg, Oregon; and one interagency meeting was held in Salem, Oregon. Interagency meetings held during the Pre-filing period that were attended by the FERC staff are listed in table 1.6-1.

Throughout the public scoping period (coinciding with the Pre-filing Review Process) we received comments on a wide variety of environmental issues. Between June 23, 2006 and September 4, 2007, we received 332 letters commenting on the Project, including 277 letters from individuals, 37 letters from organizations, 2 letters from Indian tribes, 4 letters from federal agencies, 11 letters from state and local agencies, and 2 letters from U.S. Congressional Representatives. In these letters, the most frequently mentioned environmental topics were Reliability and Safety (27 percent of comments); Cumulative Impacts (15 percent of comments); and Biological Resources and Alternatives (each 10 percent of the comments). Table 1.6-2 summarizes the environmental issues identified during the Pre-filing public scoping process for the JCE & PCGP Project.

Some of the issues raised during the scoping process are site-specific in nature, or involve resources that are variable enough along the pipeline such that minor modifications to the route could result in significant changes in the level of impact. Examples of specific resources that may be potentially impacted include residences, sensitive waterbodies, designated Late Successional Reserves (LSR), cultural resources, recreational sites, and visually sensitive areas. Issues raised during scoping lead to the identification of a number of alternative pipeline alignments in an attempt to avoid or minimize impact on these resources.

There were also some more general issues raised during scoping, such as conformance with land use plans and procedures for the pipeline crossing of federally administered lands. The BLM and USFS have concerns with respect to the Pacific Connector pipeline's likely nonconformance with the Northwest Forest Plan Standards and Guidelines for LSRs, Aquatic Conservation Strategy Objectives, and Riparian Reserves. The USFS also is concerned about compliance with LRMP Standards and Guidelines for cultural resources and recreation management. Both the BLM and the USFS put forward route alternatives that may avoid or reduce impacts on specific resources, or would be more consistent with their land use plans. These route alternatives are more fully discussed in section 3 of this EIS.

On September 4, 2007, Jordan Cove and Pacific Connector formally filed applications with the FERC seeking authorizations under sections 3 and 7 of the NGA to construct and operate their respective parts of the JCE & PCGP Project. They also sent copies of their applications to public libraries in Coos Bay, North Bend, Bandon, Myrtle Point, Coquille, Roseburg, Drain, Sutherlin, Canyonville, Glendale, Myrtle Creek, Winston, Reesport, Riddle, Yoncalla, Oakland, Medford,

TABLE 1.6-1

Public and Interagency Meetings for the JCE & PCGP Project Attended by the FERC Staff

Date	Location	Purpose	Attendees
PRE-FILING MEETINGS			
6/8/06	Portland, OR	Interagency Meeting	FERC, Jordan Cove, Pacific Connector, BLM, USFS, EPA, Coast Guard, NMFS, DOGAMI
6/8/06	Salem, OR	Meeting with State Agencies	FERC, Jordan Cove, Pacific Connector, OLCD, ODE, ODEQ, OPUC, ODFW, ODWR
6/9/06	Roseburg, OR	Interagency Meeting	FERC, Jordan Cove, Pacific Connector, BLM, USFS, COE, ODFW, ODEQ, Douglas County, City of North Bend, City of Coos Bay, Cow Creek Tribe
6/9/06	Roseburg, OR	Site visit	FERC, Pacific Connector, public
6/12/06	North Bend, OR	Open House	FERC, Jordan Cove, Pacific Connector, public
6/13/06	North Bend, OR	Site visit	FERC, Jordan Cove, Pacific Connector, public
6/13/06	Canyonville, OR	Open House	FERC, Jordan Cove, Pacific Connector, public
6/14/06	Klamath Falls, OR	Open House	FERC, Jordan Cove, Pacific Connector, public
6/15/06	Shady Cove, OR	Open House	FERC, Jordan Cove, Pacific Connector, public
7/10/06	Portland, OR	Interagency Meeting	FERC, Jordan Cove, Pacific Connector, BLM, USFS, EPA, Coast Guard, NMFS, DOGAMI
7/10/06	Roseburg, OR	Public Scoping Meeting	FERC, Jordan Cove, Pacific Connector, USFS, BLM, public
7/11/06	Roseburg, OR	Interagency Meeting	FERC, Jordan Cove, Pacific Connector, BLM, USFS, EPA, Coast Guard, NMFS, DOGAMI
7/11/06	Coos Bay, OR	Public Scoping Meeting	FERC, Jordan Cove, Pacific Connector, Coast Guard, USFS, BLM, public
7/12/06	Medford, OR	Public Scoping Meeting	FERC, Jordan Cove, Pacific Connector, USFS, BLM, public
7/13/06	Medford, OR	Site Visit	FERC, Pacific Connector, USFS, public
7/13/06	Klamath Falls, OR	Public Scoping Meeting	FERC, Jordan Cove, Pacific Connector, USFS, BLM, public
10/4/06	Portland, OR	Interagency Meeting	FERC, Jordan Cove, Pacific Connector, BLM, USFS, EPA, Coast Guard, NMFS, DOGAMI
10/5/06	Roseburg, OR	Interagency Meeting	FERC, Jordan Cove, Pacific Connector, BLM, USFS, ODFW, ODEQ, Douglas County, City of North Bend, City of Coos Bay
1/22/07	Portland, OR	Interagency Meeting	FERC, Jordan Cove, Pacific Connector, BLM, USFS, EPA, Coast Guard, NMFS, DOGAMI
1/23/07	Roseburg, OR	Interagency Meeting	FERC, Jordan Cove, Pacific Connector, BLM, USFS, ODFW, ODEQ, Douglas County, City of North Bend, City of Coos Bay
1/23/07	Roseburg, OR	Public Informational Meeting	FERC, Jordan Cove, Pacific Connector, USFS, BLM, public
1/24/07	Coos Bay, OR	Public Informational Meeting	FERC, Jordan Cove, Pacific Connector, USFS, BLM, public
1/25/07	Medford, OR	Public Informational Meeting	FERC, Jordan Cove, Pacific Connector, USFS, BLM, public
4/5/07	Medford, OR	Interagency Meeting	FERC, USFS, BLM, FWS
5/2/07	Portland, OR	Interagency Meeting	FERC, Jordan Cove, Pacific Connector, BLM, USFS, FWS, ODFW
5/3/07	Roseburg, OR	Interagency Meeting	FERC, Jordan Cove, Pacific Connector, BLM, USFS, ODFW, ODEQ
5/4/07	Coos Bay, OR	Site/Waterway Visit	FERC, Jordan Cove, Port, Coast Guard, BLM, FWS
POST-APPLICATION MEETINGS			
9/25/07	Salem, OR	State-Federal Task Force Meeting	FERC, Port, Jordan Cove, Pacific Connector, BLM, USFS, FWS, NMFS, ODE, ODFW, ODLCD, ODPR
9/26/07	Portland, OR	Interagency Meeting	FERC, Coast Guard, BLM, USFS, FWS, EPA, ODE
9/27/07	Roseburg, OR	Interagency Meeting	FERC, BLM, USFS, FWS, NMFS, Douglas County, Cow Creek Tribe
11/8/07	Salem, OR	State-Federal Task Force Meeting	FERC, Port, Jordan Cove, Pacific Connector, BLM, USFS, FWS, NMFS, ODE, ODFW, ODLCD, ODSL
12/11/07	Coos Bay, OR	Site Visit	FERC and public
12/12/07	Coos Bay, OR	Cryogenic Conference	FERC, Jordan Cove, Tuna Guys, Oregon Citizens Against the Pipeline, and Harry and Holly Stamper
5/1/08	Salem, OR	State-Federal Task Force Meeting	FERC, Jordan Cove, Pacific Connector, BLM, USFS, FWS, NFWS, ODE, ODFW, ODCLD, ODSL

TABLE 1.6-2

Environmental Issues Identified During the Pre-filing Public Scoping Process for the JCE & PCGP Project

Specific Issue/Comment	EIS Section Where Comments are Addressed
Purpose and Need (3 percent of comments)	**1.0**
Purpose and need for proposed project, economic viability of LNG, natural gas market.	
Environmental costs versus need; local benefits.	
Need for multiple LNG import facilities.	
Alternatives (10 percent of comments)	**3.0**
Comments urging that investments be redirected towards renewable, domestic energy sources such as wind, solar and wave power.	
Site the terminal and pipeline in California.	
Siting the LNG facility near a populated area is inappropriate. Remote or offshore locations should be given more consideration.	
Geology (5 percent of comments)	**4.1**
Regional seismic activity (earthquake and/or tsunami) on the LNG terminal or pipeline.	
Liquefaction at the LNG terminal site as a result of seismic activity.	
Soils and Sediments (3 percent of comments)	**4.2**
Soil and slope stability along the pipeline route (mud and landslides are common during the rainy season in southeast Oregon).	
Water Resources (5 percent of comments)	**4.3**
Impacts of the project elements on surface water and groundwater, especially drinking water and salmon spawning habitat.	
Concerns over horizontal directional drilling under streams and rivers along the pipeline route.	
Impacts on water quality due to increased dredging in Coos Bay.	
Wetlands (1 percent of comments)	**4.3**
Impacts to sensitive wetland and dune ecosystems near the LNG terminal.	
Biological Resources (10 percent of comments)	**4.5 and 4.6**
Impacts to threatened and endangered species.	
Impacts to fisheries and EFH.	
Impacts of increased dredging on marine ecosystems and species.	
Impacts of pipeline construction on forestlands, including sensitive forest types.	
Introduction and propagation of noxious weeds in the pipeline right-of-way.	
Land Use (7 percent of comments)	**4.7**
Opposition to use of eminent domain to acquire pipeline easements, especially when some land uses would not be allowed once the pipeline is installed.	
Comments supporting and opposing the use of federal lands for the pipeline corridor. Comments making specific pipeline alignment adjustments (generally to avoid private properties, also to avoid resources including the Umpqua River.	
Visual Resources (1 percent of comments)	**4.7**
Concerns over the aesthetic impacts of both the 160-foot-tall LNG storage tanks and the 230-mile-long cleared pipeline right-of-way.	
Socioeconomics (9 percent of comments)	**4.8**
The few jobs created by the project are not worth the safety and environmental risks that are involved.	
The project would create jobs and would spur economic growth in the area.	
Impacts to the local economy, including anticipated drop in tourism (fishing, golf) and families relocating over safety concerns.	
Concerns over decreased property values, eminent domain.	
Concerns over what taxes would be collected, and to go towards which services/protections.	
Transportation (1 percent of comments)	**4.9**
Impacts to harbor traffic, including recreational and commercial boating and fishing.	
Cultural Resources (1 percent of comments)	**4.10**
Impacts to Great Blue Heron rookery and other known traditional use areas near the project site should be avoided.	
Request the presence of a tribal representative or Tribe-approved archaeologist.	
Air Quality and Noise (2 percent of comments)	**4.11**
Concerns over operations emissions of the LNG carriers and terminal on the communities of Coos Bay, North Bend and Charleston (respiratory health).	
Concerns over unodorized natural gas, leaked from the pipeline and becoming trapped under inversion layer—a common occurrence in SE Oregon.	
Concerns over noise from the project.	

TABLE 1.6-2

Environmental Issues Identified During the Pre-filing Public Scoping Process for the JCE & PCGP Project

Specific Issue/Comment	EIS Section Where Comments are Addressed
Reliability and Safety (27 percent of comments)	**4.12**
Risk of catastrophic events, either accidental, intentional (terrorism) or as a result of a natural disaster on the LNG terminal, LNG carriers or the pipeline.	
Availability and readiness of emergency response personnel in the event of a catastrophic incident.	
Concerns over the health impacts of spilled or leaked gas on nearby communities.	
Risks faced by LNG carriers in this particular area, given history of high winds and shipwrecks.	
All parts of the project create targets for terrorists.	
LNG is inherently dangerous and should not be located so close to populated areas.	
Siting the LNG terminal so close to the airport is inappropriate due to safety concerns (accidental or intentional crash of airplane into the terminal).	
Worst case scenario should be used for analysis of project safety.	
Questions over where the LNG would be coming from (no LNG tankers currently fly under the US flag).	
Cumulative Impacts (15 percent of comments)	**4.13**
Cumulative impacts to biological resources, including threatened and endangered species (terrestrial, aquatic and marine), vegetation and domestic animals.	
Habitat fragmentation as a result of the 95-foot-wide cleared pipeline right-of-way.	
Cumulative impacts from emissions from construction and operations of the total project on climate change. Some comments even bring up the emissions from the mining of LNG abroad.	
Cumulative impacts of the project on the economy of Coos Bay, especially the fishing and recreation industries.	
Presumably negative impacts of the project elements on property values over time (especially the pipeline running through private land).	
Anticipated impacts from LNG carrier traffic (safety zone, harbor closure).	
Decrease in water quality as a result of increased dredging required for LNG carrier traffic.	

Klamath Falls, Bonanza, Bly, Malin, Merrill, Chemult, Chlioquin, Gilchrist, Keno, and Sprague River, Oregon.

The FERC issued its Notice of Application on September 13, 2007. In response to that notice, a total of 37 parties submitted motions to intervene. Late motions to intervene were filed by four other parties. The intervening parties are listed in table 1.6-3.

Additionally, between September 5, 2007, and June 2, 2008, the FERC received 42 individual letters commenting on the Project that were not form letters. Twenty five of those letters were from private citizens, four were from non-governmental organizations, three were from state and local government agencies, one from the Governor of Oregon, one from a federal agency, and one from a U.S. Senator.

In accordance with the FERC's regulations at 18 CFR 157.6(d), Jordan Cove and Pacific Connector were required to make a good faith effort to notify affected landowners; communities; and federal, state, and local governments about the Project through the mail within 3 days after we issued the Notice of Application, and by publishing notices in local newspapers for all affected counties within 14 days after the FERC assigned docket numbers. On September 18, 2007, Jordan Cove sent notifications to all landowners listed in Appendix A.1 of its application to the FERC, and all government agencies listed in a filing dated November 30, 2007. In addition, Jordan Cove published notices about its project on September 18 and 20, 2007, in the *Coos Bay World* newspaper. Pacific Connector mailed letters to stakeholders, including affected

TABLE 1.6-3

Parties Intervening on the JCE & PCGP Project

Intervenors	Date Intervention Filed with FERC
FEDERAL AGENCIES	
NMFS	10/1/07
STATE AGENCIES	
ODE	10/4/07
PRIVATE COMPANIES	
Gas Transmission Northwest	9/13/07
Sierra Pacific Power Company	9/27/07
Calpine Corporation	10/2/07
PG&E	10/2/07
Tuna Guys	10/3/07
PPM Energy, Inc.	10/3/07
Southwest Gas Corporation	10/4/07
Southern California Gas Company and San Diego Gas & Electric Company	10/4/07
Coos County Sheep Company	10/4/07
Fred Messerle and Sons, Inc.	10/4/07
Portland General Electric Company	10/10/07
C-2 Cattle Company	2/8/08
ORGANIZATIONS/GROUPS	
Ratepayers for Affordable Clean Energy	9/26/07
Oregon Citizens Against the Pipeline	10/1/07
Douglas County Global Warming Coalition	10/1/07
Oregon Wild	10/3/07
Klamath-Siskiyou Wildlands Center	10/3/07
Southern Oregon Pipeline Information Project, Inc.	10/4/07
Oregon Chapter of the Sierra Club	10/4/07
Friends of Oregon Living Waters	10/4/07
Oregon Shores Conservation Coalition	10/4/07
Citizens Against LNG, Inc	10/4/07
Oregon Women's Land Trust	10/4/07
Umpqua Watersheds, Inc	10/4/07
Northwest Industrial Gas Users	10/5/07
Umpqua Valley Chapter, Native Plant Society	3/26/08
Pacific Coast Federation of Fishermen's Associations	3/28/08
INDIVIDUALS	
Dennis Fisher	10/1/07
Bob Barker	10/2/07
Harry S. and Holly C. Stamper	10/3/07
Jennifer Council	10/4/07
Jody McCaffree	10/4/07
Tim Rodenkirk	10/4/07
Richard Sommer	10/4/07
Mary Ann Hansen	10/5/07
Dennis Henderson	10/5/07
Ray M. and Dola J. Johnson	10/5/07
Marcella Laudani	10/10/07
Evan Schappf Family LLC	11/8/07

landowners, communities, and government agencies, on September 10, 2007, and filed updated stakeholder lists on November 21, 2007. Pacific Connector also published notices in the *Coos Bay World* newspaper on September 19 and 12, 2006; in the *Roseburg News-Review* on September 9 and 12, 2007; and in the *Medford Mail Tribune* on September 9 and 12, 2007.

Between April 21 and 24, 2008, Pacific Connector and Jordan Cove sponsored another series of open houses, with public meetings held in Coos Bay, Canyonville, Shady Cove, and Klamath Falls. FERC representative attended those open houses, as did the BLM and USFS.

After the applications were filed, the FERC staff continued to consult with various federal, state, and local agencies that have regulatory or permitting authorities. The FERC staff participated in a number of post-application interagency meetings and site visits, as shown in table 1.6-1.

At the request of Pacific Connector and the FWS, FERC staff participated in a State and Federal Interagency Task Force formed to address potential Project-related impacts on threatened and endangered species, and to assist Pacific Connector and Jordan Cove in the production of the draft BA. FERC staff attended Task Force meetings in Salem, Oregon on September 25 and November 8, 2007, and May 1, 2008. FERC staff representatives attended all other Task Force and subgroup meetings. Notes from the Task Force meetings have been placed into the FERC's public record for this proceeding. The draft BA was filed on April 22, 2008.

On November 19, 2007, the FERC issued notices that staff would be conducting a site visit to the location of the Jordan Cove LNG terminal on December 11, 2007, and would be convening an engineering technical conference in Coos Bay, Oregon, on December 12, 2007, to discuss the terminal's engineering design and technical aspects of Jordan Cove's application. All of the post-application interagency meetings were related to the production of the EIS, and the participation of staff with parties was therefore exempt from the Commission's ex-parte rules, pursuant to section 385.2201(e)(1)(vi). In keeping with the FERC's regulations, notes of all post-application meetings and site visits were placed into the public record for this proceeding.

Prior to the publication of this EIS, the FERC prepared an administrative draft EIS that was distributed for review as a whole or in part to those agencies who formally agreed to be cooperating agencies in the development of the EIS - the Coast Guard, COE, BLM, BOR, USFS, EPA, DOT, and Douglas County. Sections of this draft EIS were written with the cooperation and assistance of these agencies.