1.0 INTRODUCTION

On June 5, 2006, Bradwood Landing LLC and NorthernStar Energy LLC (affiliates of NorthernStar Natural Gas, Inc.) filed applications with the Federal Energy Regulatory Commission (FERC or Commission) under sections 3(a) and 7(c) of the Natural Gas Act (NGA). The applications were noticed in the Federal Register on June 15, 2006. In Docket No. CP06-365-000, Bradwood Landing LLC seeks authorization to site, construct, and operate a liquefied natural gas (LNG) import terminal at Bradwood, about 38 miles up the Columbia River from its mouth, in Clatsop County, Oregon. In Docket No. CP06-366-000, NorthernStar Energy LLC seeks a Certificate of Public Convenience and Necessity (Certificate) to construct and operate a new natural gas pipeline and ancillary facilities to connect the proposed LNG terminal to the existing Williams Northwest Pipeline Corporation (Williams Northwest) interstate natural gas pipeline system in Cowlitz County, Washington. In Docket Nos. CP06-376-000 and CP06-377-000, NorthernStar Energy LLC 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. Hereafter, Bradwood Landing LLC and NorthernStar Energy LLC are referred to collectively as NorthernStar. The project, including the LNG terminal and pipeline components, is referred to as the Bradwood Landing Project.

The FERC is the federal agency responsible for authorizing applications to construct and operate onshore LNG import and interstate natural gas transmission facilities. For the Bradwood Landing Project, the FERC is the lead federal agency for the preparation of this environmental impact statement (EIS) in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) regulations for implementing the NEPA (Title 40, Code of Federal Regulations (CFR) 1500-1508), and the FERC's regulations implementing the NEPA (18 CFR Part 380).

The U.S. Army Corps of Engineers (COE) and the U.S. Department of Homeland Security, Coast Guard (Coast Guard) are cooperating agencies for the development of this EIS. A cooperating agency has jurisdiction by 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.[1]

The Coast Guard has authority over the safety and security of LNG ships, the marine traffic route, and 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 1.3.1). The COE has authority to issue dredging and wetland permits for the project (see section 1.3.2). 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 sendout pipeline.

This EIS discloses and assesses the potential environment impacts that may be associated with the construction and operation of the Bradwood Landing Project in Clatsop and Columbia Counties, Oregon, and Cowlitz County, Washington. NorthernStar's proposed facilities would transport up to 1.3 billion cubic feet per day (Bcfd) of imported natural gas to markets in the Pacific Northwest.

[1] The *Interagency Agreement Among the Federal Energy Regulatory Commission, United States Coast Guard, and Research and Special Programs Administration for the Safety and Security Review of Waterfront Import/Export Liquefied Natural Gas Facilities* is available for viewing by the public through the FERC Internet web page at www.ferc.gov, then clicking on Industries, LNG, Safety and Inspections.

The LNG import terminal proposed by Bradwood Landing LLC would include:

- a dredged maneuvering area off of the Columbia River navigation channel;
- a single ship berth capable of receiving LNG ships with cargo capacities ranging from 100,000 to 200,000 cubic meters (m^3);
- a set of four 16-inch-diameter LNG unloading arms, including two liquid unloading arms, one hybrid arm, and a vapor return arm on the jetty, and a 1,240-foot-long, 32-inch-diameter cryogenic LNG transfer pipeline and 6-inch-diameter LNG recirculation pipeline extending from the berth to the LNG storage tanks;
- two insulated LNG storage tanks, each with a useable volume of over 1 million barrels, or 160,000 m^3;
- a vapor management system to handle the boil-off gas (BOG) that occurs during the unloading process, including vapor return blowers and knockout (KO) drum on the jetty, vapor handling pipework, two BOG compressors, and a BOG condenser;
- an LNG sendout system, consisting of six submerged in-tank LNG discharge pumps (three in each storage tank) and five sendout pumps;
- seven submerged combustion vaporizers (SCV), of which six would normally operate and one would be a back-up, to re-gasify the LNG and provide natural gas through a metering station to the inlet valve of the sendout pipeline;
- support buildings, including a warehouse/administrative building, control building, switch rooms, compressor building, and gatehouse/security building;
- utilities, including a 1.5-mile-long, 115-kilovolt (kV) power line and switchyard, and an 800-kilowatt (kW) emergency diesel-fueled generator;
- screened water intakes, pumps, and piping to supply water to unloading ships for cooling and ballast, and for other site uses; and
- a fire protection and detection system, including a firewater pumphouse, and security system including fencing.

The natural gas pipeline facilities proposed by NorthernStar Energy LLC would include:

- a 36.3-mile-long, underground, high-pressure welded steel sendout pipeline consisting of approximately 18.9 miles of 36-inch-diameter pipeline in Clatsop and Columbia Counties, Oregon and 17.4 miles of 30-inch-diameter pipeline in Columbia County, Oregon and Cowlitz County, Washington;
- five meter stations, including at the LNG terminal, the Georgia-Pacific Wauna paper mill (Wauna Mill) delivery point, the interconnection with the Northwest Natural Gas Company (Northwest Natural) interstate pipeline system, the Portland General Electric Company (PGE) Beaver Power Plant delivery point, and the interconnection with Williams Northwest pipeline system; and

- at least five mainline block valves (MLV), two pig[2] launchers, and two pig receivers.

The Bradwood Landing Project would require construction of some facilities that do not fall under the Commission's jurisdiction. These include electric transmission facilities and three natural gas pipeline laterals. The waterway to the LNG terminal for the LNG ships is an additional component of the project for the purpose of this EIS. The Bradwood Landing Project also would include development of several mitigation sites as well as a Salmon Enhancement Initiative (SEI).

1.1 PURPOSE AND NEED

The purpose of the Bradwood Landing Project is to provide a new source of natural gas to the Pacific Northwest through importation of LNG. 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 ships. At the terminal, the LNG can be re-gasified into natural gas.

NorthernStar's project is specifically designed to provide up to 1.3 Bcfd of natural gas to the Pacific Northwest by:

- delivering natural gas to the Wauna Mill, Oregon and the PGE Beaver Power Plant at Port Westward, Oregon;
- interconnecting with Northwest Natural's existing bidirectional intrastate pipeline facilities capable of transporting gas to their Mist underground storage facility; and
- interconnecting with Williams Northwest interstate pipeline system.

By creating access to new and competitively-priced LNG supplies, the proposed project would diversify available sources of energy and increase the supply of natural gas to the region, which would contribute to natural gas price stabilization. The current gas demand in this region is approximately 3.2 Bcfd. As discussed below, there has been, and will continue to be, an increasing demand for natural gas in the United States and the Pacific Northwest. This demand is partly because natural gas is a highly efficient fuel with comparatively low air emissions.

The U.S. Department of Energy, Energy Information Administration (EIA) predicts in its 2007 Annual Energy Outlook that natural gas use in the United States will continue to grow, from 22.0 trillion cubic feet (Tcf) in 2005 to 26.1 Tcf by 2030 (EIA, 2007). Much of this growth is expected before 2020. These projections assume significant numbers of new coal-fired plants for generation of electricity will be added between 2020 and 2030. However, should measures to reduce greenhouse gas emissions be implemented, coal use could be significantly impacted (EIA, 2007), further increasing demand for natural gas. Since the early 1980s, natural gas production in the United States has fallen short of demand. Since then, the shortfall has been made up primarily by pipeline imports from Canada. However, production in the Northwestern Canadian Basin has also been declining while demand for natural gas in the producing region is rapidly increasing, as locally produced gas is used as fuel in the production and upgrading of Canadian heavy oil and tar sands.

The net result is that Canadian pipeline imports started to decline in 2003 and are predicted to stay at or fall slightly below current levels, even assuming development of arctic reserves. Because the

[2] A pig is an internal tool used to clean and dry a pipeline and/or to inspect it for damage or corrosion.

United States has limited access to other sources of natural gas within pipeline distance, future increases in demand of natural gas in the United States would largely need to be met by imports of LNG.

In addition, the domestic production of natural gas in the United States, which has remained stagnant in recent years despite record levels of drilling, is predicted to increase significantly and reach levels of production that have not been seen since the early 1970s. The EIA bases this prediction on expectations that non-conventional sources of gas, such as coal bed methane and gas from tight formations, can be successfully and economically explored and produced. If these unconventional sources of gas supply do not develop, then the United States will need to look for additional LNG imports (EIA, 2005a).

According to the Oregon Department of Energy (ODE), direct use of natural gas accounts for 19 percent of all energy used in the state. Between 7 and 15 percent of all electricity is generated using natural gas as fuel, a percentage that fluctuates with the amount of power that can be generated using hydropower. Oregon imports 100 percent of the natural gas consumed in the state.

After an increase of 48 percent between 1990 and 1997, natural gas consumption in Oregon has remained relatively flat in recent years. Between 1997 and 2002, the rapid increase of consumption of natural gas for power generation was offset by declining use in the industrial and commercial sectors due to economic reversals, a trend that seems to have bottomed out in more recent years. Factors that will influence future natural gas use in Oregon will be availability and price. As such, the introduction of imported LNG at competitive prices may result in renewed growth in natural gas consumption.

In a recent study, the Northwest Gas Association (NWGA) warns that existing gas supplies and infrastructure are adequate over the next few years, but will fall short of meeting peak demand conditions by 2010 under a high growth demand scenario or under a base-case growth scenario with extreme cold weather (NWGA, 2006). For its base-case forecast, the NWGA predicts that natural gas use in the Pacific Northwest (i.e., British Columbia, Washington, Oregon, and Idaho) will increase 8.1 percent through 2011. This rate of increase is a downward revision from previous forecasts of 3 percent per year, reflecting the dampening effect on demand of the current high gas prices.

Much of the demand growth in the NWGA forecast is driven by power generation. The NWGA prepares its forecast based on consensus opinions of its members, which include all regional gas distributors and long distance pipeline operators, and is derived through a detailed analysis of demand growth factors by subregion. For a high growth case, the NWGA predicts regional gas average demand to reach 2.6 Bcfd, an increase by about 25 percent over current levels. According to the statistics of the NWGA, peak day demand is more than twice the average and could reach levels of 5.8 to 6.3 Bcfd in the 2009 to 2010 winter season. For regional peak day demand, the NGWA forecasts predict shortfalls beginning in the 2006 to 2007 winter. Although initially small, the supply shortfall on peak days could reach 0.5 to 0.9 Bcfd in the 2009 to 2010 winter season, the timeframe when NorthernStar's proposed LNG terminal would become operational (NWGA, 2005).

Although significant, the growth in demand for natural gas in the Pacific Northwest region is not the only factor identified by the NWGA as a potential reason to import LNG. The analysis presented by the NWGA in their Northwest Gas Outlook 2006 also identifies increased competition for the reserves that historically provided the Pacific Northwest with gas at a cost advantage over the rest of the nation. As pointed out by the NWGA, the Pacific Northwest has enjoyed gas prices that, on average, are well below the price at the nation's most important market clearing point, Henry Hub.

The Pacific Northwest has historically enjoyed gas prices below the national average because of its relative proximity to the Western Canada Sedimentary Basin, the primary source of natural gas

imports for the United States. Local competition with hydro-derived power and stagnating industrial use are other economic factors that are likely to have contributed to lower prices in recent years. However, the price spikes in 2000 and 2001, and the current high natural gas prices nationwide are indicative of what could happen in the future when Canadian supplies decline and the Pacific Northwest becomes dependent on incremental supplies from more remote sources of gas in the Rockies or the Gulf of Mexico. Under such a scenario, rather than being close to the source of incremental supply, the Pacific Northwest would be one of the most remote regions, and the effects of pipeline constraints or market disruptions are generally more severe at the end of the distribution system than at the source. Furthermore, competition is increasing from Canada and other parts of the United States for the supplies of natural gas in western British Columbia and the Rocky Mountain region, which have been the traditional sources of natural gas for the Pacific Northwest (NWGA, 2006). New pipelines built in recent years provide access to these supplies for growing markets in the Midwest and Northeast, and proposed pipelines will continue the trend. For example, the proposed Rockies Express Pipeline would transport 1.8 Bcfd of natural gas from the Rocky Mountain region to Ohio and Pennsylvania (NWGA, 2006).

For a longer range forecast, beyond the horizon of the NWGA's analysis, the 2006 EIA forecast provides analysis at the regional level. In its 2006 Outlook (EIA, 2006), the EIA predicts continuing growth for natural gas consumption in the Pacific region (Oregon, California, Washington, Hawaii, and Alaska). According to the EIA forecast, gas consumption in this region will increase by approximately 7.5 percent between 2005 and 2030.

1.2 PURPOSE AND SCOPE OF THIS STATEMENT

Different federal actions are to be undertaken by the cooperating agencies producing this EIS. The FERC must decide whether or not to authorize the construction and operation of the onshore facilities proposed for the Bradwood Landing Project. The COE must decide whether or not to issue dredging and wetland permits. The Coast Guard must decide whether or not the waterway is suitable for LNG marine traffic. However, all of the cooperating agencies must consider the potential environmental impacts of NorthernStar's proposal as disclosed in this EIS prior to making their decisions.

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 the draft EIS is provided in Appendix A.

Our[3] principal purposes in preparing this EIS are to:

- identify and assess potential 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 human environment;
- identify and recommend specific mitigation measures, as necessary, to minimize the environmental impacts; and
- facilitate public involvement in identifying the significant environmental impacts.

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

The FERC will use the results of the EIS as an element in its review of NorthernStar'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, the FERC finds that the proposed project is in the public interest. The environmental impact assessment 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 consideration of waterway navigational suitability. The COE will use the results of this EIS in its review of NorthernStar's applications for permits pursuant to section 404 of the Clean Water Act (CWA) and section 10 of the Rivers and Harbors Act (RHA).

Our analysis in this EIS focuses on the facilities that are under the FERC's jurisdiction (i.e., the LNG import terminal and sendout pipeline proposed to be constructed by NorthernStar). Because it would be an integral element of the project, this EIS will also address the potential environmental impacts associated with a nonjurisdictional power line to be built to provide electric services to the LNG terminal. 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 geology; soils and sediments; water use and quality; wetlands; vegetation; wildlife; fish; threatened, endangered, and special-status species; land use, recreation, and visual resources; cultural resources; socioeconomics and traffic; air quality and noise; reliability and safety; and cumulative effects. The EIS describes the affected environment as it currently exists, discusses the environmental consequences of the proposed project, and compares the project's potential impact to that of alternatives. The EIS also presents our conclusions and recommended mitigation measures.

1.3 PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS

The FERC, Coast Guard, and COE are required to comply with section 7 of the Endangered Species Act of 1973 (ESA), the Magnuson-Stevens Fishery Conservation and Management Act (MSA), and section 106 of the National Historic Preservation Act (NHPA). As the lead federal agency for the Bradwood Landing 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.

At the federal level, other agency permits and approvals include compliance with the CWA, RHA, Clean Air Act (CAA), Coastal Zone Management Act (CZMA), and Coast Guard regulations relating to LNG waterfront facilities. Table 1.3-1 lists the major federal, state, and local permits, approvals, and consultations identified for construction and operation of the Bradwood Landing Project.

1.3.1 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 United States Code (USC) § 191; the Ports and Waterways Safety Act of 1972, as amended (33 USC § 1221 et seq); and the Maritime Transportation Security Act of 2002 (46 USC § 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:

- density and character of marine traffic;
- locks, bridges, and other manmade obstruction in the waterway;
- environmental effects of LNG ships during transit from open water to the facility;
- maritime security (MARSEC)/port security considerations; and
- the following factors adjacent to the facility:
    - 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 Letter of Intent (LOI) to the local Captain of the Port (COTP) to begin the LOR process. NorthernStar submitted an LOI to the Coast Guard for the project on January 18, 2005.

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 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 Waterway Suitably Assessment (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.

NorthernStar submitted its Preliminary WSA to the Coast Guard on December 29, 2005, and in response to Coast Guard comments, a Follow-on WSA was produced in May 2006. The Coast Guard provided the FERC with its Waterway Suitability Report (WSR) on February 28, 2007. See section 4.11.5 of this EIS for additional discussion of marine safety.

1.3.2 COE 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.

1.3.3 Clean Water Act and Rivers and Harbors Act

The CWA (33 USC § 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 U.S. Environmental Protection Agency (EPA) has the authority to review and veto COE decisions on section 404 permits. Section 10 of the RHA (33 USC § 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.

NorthernStar must obtain Water Quality Certifications pursuant to section 401 of the CWA and National Pollutant Discharge Elimination System (NPDES) permits pursuant to section 402 of the CWA. The federal authority to issue these certifications and permits has been delegated to the Oregon Department of Environmental Quality (ODEQ) in Oregon and the Washington Department of Ecology (WDE) in Washington.

On March 8, 2007, NorthernStar submitted its NPDES permit application to the ODEQ. In a letter dated April 18, 2007, the ODEQ informed NorthernStar that it would not process the application until after it receives a Land Use Compatibility Statement (LUCS) from Clatsop County.

To cover its proposed actions in Oregon, NorthernStar submitted a Joint Permit Application (JPA) to the COE and ODEQ in October 2006, seeking permits under sections 401 and 404 of the CWA. NorthernStar revised its JPA in April 2007. To obtain permits under sections 401 and 404 of the CWA for its actions in Washington, NorthernStar submitted, also in October 2006, a Joint Aquatic Resources Permit Application (JARPA) to the COE and the WDE. The COE informed us that it does not intend to issue a notice of these applications until after the FERC issues the draft EIS for this project. Section 4.3.2 of this EIS contains a more detailed discussion of potential project-related impacts on surface water, including addressing compliance with the CWA.

1.3.4 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 (nonattainment areas).

The EPA has regulatory authority under the CAA. The EPA provides review and oversight of these regulations but has delegated permitting authority to the ODEQ in Oregon and the Southwest Clean Air Agency (SWCAA) in southwest Washington. 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. Section 4.10.1 of this EIS has a detailed discussion of air quality issues.

NorthernStar submitted an Air Contaminant Discharge Permit application for the Bradwood Landing Project to the ODEQ on March 28, 2007, and a revised application on April 9, 2007. On April 10, 2007, the ODEQ advised NorthernStar that it found the application incomplete because it did not contain a LUCS from Clatsop County under OAR 340-216-0040(1(k).

1.3.5 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 § 1536(a)(2)(1988)). The lead federal agency, or the applicant as a non-federal party, is required to consult with the U.S. Department of the Interior Fish and Wildlife Service (FWS) and the U.S. Department of Commerce National Oceanic and Atmospheric Administration, National Marine Fisheries Service (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, the federal agency determines that these species or habitats may be affected by the proposed project, it is required to prepare a biological assessment (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.

The FERC submitted a BA for the Bradwood Landing Project to the NMFS and FWS on March 19, 2007. Because we have found that the project is likely to adversely affect some listed species, our BA requested that the FWS and NMFS develop a Biological Opinion (BO) as to whether authorizing the Bradwood Landing Project may jeopardize the continued existence of any species. The FWS provided comments on the BA in a letter dated April 20, 2007, and the NMFS commented on May 11, 2007. The FERC intends to revise its BA in response to the FWS and NMFS comments. See section 4.6 of this EIS for details of our ESA analysis.

1.3.6 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 Essential Fish Habitat (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 §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 4.5.1.2 of this EIS for the status of the MSA review.

1.3.7 Marine Mammal Protection Act

All marine mammals are protected under the Marine Mammal Protection Act of 1972. The Marine Mammal Protection Act 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.

Congress passed the Marine Mammal Protection Act of 1972 based on the following findings and policies:

- some marine mammal species or stocks may be in danger of extinction or depletion as a result of human activities;
- these species or stocks must not be permitted to fall below their optimum sustainable population level;
- measures should be taken to replenish these species or stocks;
- knowledge of marine mammal ecology and population dynamics is inadequate; and
- marine mammals have proven to be resources of great international significance.

The Marine Mammal Protection Act was amended substantially in 1994 to provide for:

- certain exceptions to the take prohibitions, such as for Alaska Native subsistence and permits and authorizations for scientific research;

- a program to authorize and control the taking of marine mammals incidental to commercial fishing operations;
- preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction; and
- studies of pinniped-fishery interactions.

Impacts from the Bradwood Landing Project on marine mammals are discussed in section 4.6.2. In addition, marine mammals listed under the ESA will be discussed in detail in the BA.

1.3.8 National Historic Preservation Act

Section 106 of the NHPA requires the lead federal agency to take into account the effects of its undertakings on properties listed on or eligible for listing on the National Register of Historic Places (NRHP), including prehistoric or historic sites, districts, buildings, structures, objects, or properties of traditional religious or cultural importance, and to afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking. The FERC has requested that NorthernStar, as a non-federal party, assist in preparing the necessary information and analyses as required by the ACHP procedures in 36 CFR 800. See section 4.9 of this EIS for a fuller discussion of compliance with the NHPA.

1.3.9 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 § 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.

The Columbia River Basin is exempt from the CZMP, except for the zone of significant tidal influence. The only part of the Bradwood Landing Project subject to federal CZMA review is the LNG import terminal at Bradwood. None of the proposed project facilities fall within the Washington coastal zone.

The Oregon Department of Land Conservation and Development (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, NorthernStar must provide a certification to the FERC and the ODLCD that the project complies with and will be conducted in a manner consistent with the state's approved management program (15 CFR 930.50 Subpart D). NorthernStar submitted its federal consistency certification to the ODLCD on December 8, 2006 with a request for a formal determination of consistency. In a letter to NorthernStar dated January 5, 2007, the ODLCD requested additional information before it would begin its consistency review. See section 4.7.2.4 of this EIS for further information regarding compliance with the CZMA.

1.3.10 U.S. Department of Defense Consultation

We have consulted with the U.S. Department of Defense (DOD), as required by the Energy Policy Act of 2005 (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 military installations. No comments or concerns were received from any branch of the military or a military installation in response to the FERC's scoping notice issued September 13, 2005.

In letters dated September 23, 2005 and January 11 2006, to appropriate property managers and installation supervisors at the Pentagon representing the Army, Air Force, and Navy, and the COE, we informed various offices of the DOD of the Bradwood Landing Project and requested any information on impacts on military installations. Since no effects have been identified, we conclude that there would be no impact on military installations associated with this project, and therefore, no concurrence from the Secretary of Defense is required under the EPAct.

1.3.11 Other State 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 states of Oregon and Washington have relevance to the Bradwood Landing Project. In addition to the permits, approvals, and consultations listed in table 1.3-1, the Coast Guard worked with representatives of the states of Oregon and Washington 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 jurisdictional facilities must be consistent with the conditions of any Certificate the FERC may issue.[4]

Oregon

The ODE is the appropriate state agency designated by the Governor of Oregon to consult with the FERC on state considerations related to the Bradwood Landing Project according to the EPAct. On July 6, 2006, the ODE submitted a safety advisory report to the FERC for its consideration in reviewing the Bradwood Landing Project. On December 6, 2006, the ODE conveyed a Clatsop County

[4] 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 (2d Cir. 1990); and Iroquois Gas Transmission System, L.P., et al., 52 FERC ¶ 61,091 (1990) and 59 FERC ¶ 61,094 (1992).

Emergency Services Report, and requested that the Commission consider making the provision of resources outlined in the report a condition to the authorization for the project.

Under Oregon's Removal-Fill Law (Oregon Revised Statute (ORS) 196.795-990), permits are issued by the Oregon Department of State Lands (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 Oregon Department of Fish and Wildlife (ODFW) for the specific waterbodies. For projects involving impacts on wetlands, compensatory mitigation to offset loss of wetland resources is required per Oregon Administrative Rule (OAR) 141-085-0121.

A JPA is used for the Oregon Removal-Fill Permit and the COE Permit under section 10 of the RHA and section 404 of the CWA as described above. However, the JPA must be submitted to both agencies and separate permits are issued.

The purpose of the Fish and Wildlife Habitat Mitigation Policy (HMP) (OAR 345-022-0060) 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. Section 4.5.2.4 includes a detailed discussion of NorthernStar's compliance with this policy.

Oregon permits and authorizations relevant to the Bradwood Landing Project are listed in table 1.3-1.

Washington

In Washington, state and county agencies conduct environmental reviews of proposed projects pursuant to the State Environmental Policy Act (SEPA) (Chapter 43.21C Revised Code of Washington (RCW)). The SEPA process involves the identification and evaluation of probable environmental impacts, and the development of mitigation measures that will reduce adverse environmental impacts. Cowlitz County is the lead SEPA agency for the Bradwood Landing Project and is responsible for compliance with SEPA procedural requirements as well as for compiling and assessing information on the environmental aspects of the proposal for all agencies with jurisdiction in Washington. As the lead SEPA agency, Cowlitz County is also responsible for the threshold determination[5] and preparation and content of an EIS when required.

[5] A SEPA threshold determination is the formal decision as to whether or not the proposal is likely to cause a significant adverse environmental impact that requires review in an EIS.

Cowlitz County could adopt this EIS for the Bradwood Landing Project if its independent review confirms that the document is adequate, meets the county's environmental review standards, and the requirements of the State of Washington Administrative Code (WAC) 197-11-610 and 197-11-630. If the county decides to adopt this EIS, it would fill out and circulate the adoption form in WAC 197-11-965 to agencies with jurisdiction and to persons or organizations that have expressed an interest in the proposal. No action may be taken on the proposal until 7 days after the statement of adoption form has been issued. Once the 7-day waiting period is completed, the state and local agencies could begin issuing permits.

The Growth Management Act was passed in 1990 to address what the Washington State Legislature referred to as uncoordinated and unplanned growth that posed a threat to the environment, sustainable economic development, and the quality of life in Washington. The Growth Management Act requires state mandated comprehensive planning for the most populated and fastest growing counties of the state. Because Cowlitz County is not such a county, it is not subject to most provisions of the act. However, the Growth Management Act also mandates that all counties develop and adopt an ordinance that classifies, designates, and protects critical areas. Cowlitz County has implemented a Critical Areas Ordinance, set forth as Chapter 19.15 of the Cowlitz County Code (CCC). Cowlitz County is currently in the process of updating this ordinance.

Critical areas may contain valuable natural resources; perform important ecological functions and processes; or, if developed, present potential hazards to life and property. In conjunction with other applications, the county reviews critical areas relative to the following:

- Wetlands – Provide numerous valuable functions, including but not limited to providing wildlife and fish habitat, water quality enhancement, flood and erosion control, and aquifer recharge and discharge.

- Geologic hazards – Pose a risk to public and private property and to the natural systems that make up the county's environment. Such areas are susceptible to landslides, erosion, seismic activity, volcanic activity, or mining hazards. Future developments should be directed to more geologically stable areas and away from unsuitable ground.

- Aquifer recharge areas – Perform many important biological and physical functions that benefit the county and its residents, including storing and conveying groundwater. Protection of aquifer recharge areas is necessary to protect valuable groundwater resources.

- Fish and wildlife habitat conservation areas – Perform many physical and biological functions that include but are not limited to providing opportunities for food, cover, nesting, breeding, and movements for fish and wildlife; maintaining and promoting diversity of species and habitat; and helping to maintain air and water quality.

- Frequently flooded areas – Pose a risk to public and private property and public health. Regulation of these lands promote efficient use of the land and water resources by allocating frequently flooded areas to the uses for which they are best suited and to discourage obstructions to flood flows.

Designated critical areas affected by the Bradwood Landing Project are identified and discussed in the applicable resource sections in section 4.0 of this EIS.

The Shoreline Management Act was passed by the Washington State Legislature in 1971. The Shoreline Management Act is the principal means of regulating shoreline land and water uses

throughout the state and requires cities and counties to develop Shoreline Master Programs (SMP). The WDE reviews and formally adopts the programs. The SMPs must be consistent with statewide policies but contain specific regulations and polices that are tailored to local conditions to promote orderly and reasonable development of waterfront lands. The overall intent is to protect the resources and ecology of Washington's largest streams, lakes, and marine waters. Shoreline permit decisions are made and issued by local governments; however, the WDE reviews those decisions. In addition, for shoreline conditional use or variance permits, the WDE is responsible for approving, denying, or approving with additional conditions, the local decision.

Requests for shoreline development permits in Cowlitz County are reviewed under the criteria established by the Shoreline Management Act through Cowlitz County's SMP adopted in 1977, and through the authority of Chapter 19.20 of the CCC. Detailed information on the designated shorelines crossed by the proposed pipeline is presented in section 4.3.2.1.

Other Washington permits and authorizations are listed in table 1.3-1.

1.4 PUBLIC REVIEW AND COMMENT

The Commission developed its environmental Pre-filing Review Process to encourage the early involvement of interested stakeholders, facilitate interagency cooperation, and identify and resolve issues before an application is filed with the FERC. The FERC issued regulations for our Pre-filing Review Process on October 7, 2005, in Docket No. RM05-31-000, Order No. 665. However, those procedures did not apply to NorthernStar because it came in for Pre-filing before the regulations were issued. Instead, NorthernStar followed preliminary guidance provided by the FERC's Office of Energy Projects (OEP) (prepared on February 10, 2004).

On February 23, 2005, NorthernStar filed a request with the FERC to implement the Commission's Pre-filing Process for the Bradwood Landing Project. On March 7, 2005, the FERC granted NorthernStar's request and established a Pre-filing docket number (PF05-10-000) to place information related to the project into the public record.

The FERC introduced NorthernStar's proposal to various stakeholders by issuing a Pre-filing Process Review Notice on March 18, 2005. This notice was sent to elected federal, state, and local government officials; agency representatives; environmental and public interest organizations; Native American tribes; and local libraries and newspapers.

As part of the Commission's Pre-filing Process, NorthernStar initiated a public outreach program during the preliminary design stage of the project. An article about the proposed project appeared in the Daily Astorian on February 23, 2005. NorthernStar established an internet webpage that described the project, mentioned key management team members, outlined potential environmental impacts, and addressed frequently asked questions. NorthernStar contacted and/or met with federal and state regulatory and resource agencies and interested environmental groups, and took agency representatives on site visits. The general public was given an opportunity to learn more about the project at a series of open houses held by NorthernStar including those in Astoria, Oregon (May 19, 2005), Longview, Washington (September 28, 2005), and Knappa, Oregon (September 29, 2005). The FERC staff also was in attendance at NorthernStar's open houses to answer questions from the public. On May 14, 2005, NorthernStar hosted a public tour of the Bradwood LNG terminal location. NorthernStar presented information about the project to an audience of 125 at a special meeting of the Board of Wahkiakum County Commissioners on May 17, 2005.

TABLE 1.3-1

Major Permits, Approvals, and Consultations for the Bradwood Landing Project

Agency	Authority/Regulation/Permit	Agency Action	Status
FEDERAL			
FERC	NEPA 40 CFR 1500-1508	Prepare EIS.	FERC issued draft EIS August 2007.
	Sections 3 and 7 of the NGA and EPAct	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).	NorthernStar filed applications with the FERC on June 5, 2006.
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 State Historic Preservation Offices (SHPO).
U.S. Department of Agriculture, Natural Resources Conservation Service	Farmland Protection Policy Act	Determine if the project would result in the permanent conversion of prime farmland.	Pending.
Coast Guard	33 CFR 127	COTP issues an LOR determining the suitability of the waterway for LNG marine traffic.	NorthernStar submitted LOI to the Coast Guard on January 18, 2005. LOR pending completion of the NEPA review.
	33 CFR 165	Establish safety and security zones for LNG vessels in transit and while docked.	Coast Guard issued WSR on February 28, 2007.
	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.
	NVIC 05-05	Validate WSA and produce WSR.	NorthernStar submitted follow-up WSA to the Coast Guard in May 2006. Coast Guard issued its WSR on February 28, 2007.
COE	Section 10 of the RHA	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.	NorthernStar submitted its JPA and JARPA to the COE on October 10, 2006; revised JPA in April 2007.
	Section 404 of the CWA	Issue permit for the placement of dredged or fill material into waters of the United States, including wetlands.	NorthernStar submitted its JPA and JARPA to COE on October 10, 2006; revised JPA in April 2007.
DOD	Section 311 of the EPAct and Section 3 of the NGA	Provide information regarding project effects on military installations.	FERC sent letters to DOD dated September 23, 2005 and January 11, 2006.
EPA	Section 404 of the CWA	Can veto wetland permits issued by the COE.	NorthernStar submitted its JPA and JARPA to the COE on October 10, 2006.

TABLE 1.3-1 (cont'd)

Major Permits, Approvals, and Consultations for the Bradwood Landing Project

Agency	Authority/Regulation/Permit	Agency Action	Status
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.	FERC's BA submitted March 19, 2007. FWS requested additional information in letter dated April 20, 2007.
	Fish and Wildlife Coordination Act	Provide comments to prevent loss of and damage to wildlife resources.	Pending review of the FERC's BA.
	Migratory Bird Treaty Act	Review the proposed project for consistency with Executive Order 13186.	Pending review of this draft EIS.
NMFS	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.	FERC's BA submitted March 19, 2007. NMFS requested additional information in letter dated May 11, 2007.
	Marine Mammal Protection Act	Consult on protected marine mammals.	Pending review of the FERC's BA and this draft EIS.
	MSA	Provide conservation recommendations for projects that may adversely impact EFH.	FERC's EFH Assessment included with BA submitted March 2007.
DOT, PHMSA	LNG Facilities Petition for Approval	Issue approval that the new LNG facility meets standards governing siting, design, installation, personnel qualifications, and training.	Pending.
	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.
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.	Permit to be obtained by NorthernStar before construction.
STATE – OREGON			
Oregon Department of Agriculture	Oregon Endangered Species Act	Consult on Oregon listed plant species.	Pending review of terrestrial survey filed by NorthernStar on October 10, 2006.
ODE	EPAct	Consult on safety and security issues.	Letters from ODE to the FERC dated July 6, 2006 and December 6, 2006.
ODEQ	Section 401 of the CWA	Water quality certification. Issue NPDES permits for discharge of hydrostatic test water, SCV condensate, and stormwater.	JPA for water quality and wetlands submitted by NorthernStar on October 10, 2006; revised April 2007. NPDES application submitted by NorthernStar on March 8, 2007. ODEQ requested LUCS in letter dated April 18, 2007.

TABLE 1.3-1 (cont'd)

Major Permits, Approvals, and Consultations for the Bradwood Landing Project

Agency	Authority/Regulation/Permit	Agency Action	Status
	CAA	Issue air quality permit.	Air Contaminant Discharge Permit Application submitted by NorthernStar on March 28, 2007; revised April 9, 2007. ODEQ requested LUCS in letter dated April 10, 2007.
ODFW	Fish and Wildlife Coordination Act and the Oregon Endangered Species Act	Consult on sensitive species and habitats that may be affected by the project and, in general, regarding conservation of fish and wildlife resources.	Pending review of aquatic and terrestrial survey reports filed by NorthernStar on October 22, 2006.
	Fish and Wildlife HMP, OAR 345-022-0060	Consult on and approve fish and wildlife mitigation plan.	Pending review of revised Mitigation Plan filed by NorthernStar on March 2, 2007.
ODLCD	CZMA	Consider consistency with CZMA program policies.	NorthernStar submitted its request for a consistency certification from the ODLCD on December 8, 2006. ODLCD requested additional information in letter dated January 5, 2007.
SHPO	Section 106 of the NHPA	Review cultural resources reports and comment on recommendations for NRHP eligibility and project effects.	SHPO comments on draft survey reports dated April 4, 2006. NorthernStar filed revised reports with the FERC on November 16, 2006, and SHPO commented on those reports in a letter dated November 22, 2006.
ODSL	Submerged and Submersible Land Easement, OAR 141-122	Grant submerged land easements (e.g., waterbody crossings).	Pending.
	Joint Removal-Fill Permit, ORS 196.795-990	Approve removal or fill of material in waters of the state.	JPA submitted by NorthernStar on October 10, 2006.
	Compensatory Wetland Mitigation Rules, OAR 141-085-0121	Review and approve wetland mitigation plans.	Pending review of revised Mitigation Plan filed by NorthernStar on March 2, 2007.
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	Issue permits to cross state funded roadways.	Permit application pending.
Oregon Department of Water Resources	ORS 537, OAR 690-310	Issue permits to appropriate surface water and groundwater during project operation.	Applications for Permit to Use Surface Water and Permit to Use Ground Water submitted by NorthernStar on February 28, 2006.
	ORS 537, OAR 690-340	Issue limited licenses for temporary use of surface waters for hydrostatic testing and suction dredging.	Limited licenses (LL-947, LL-948, LL-949) issued April 25, 2006.
Oregon Public Utilities Commission	OAR 860-031	Inspect the natural gas facilities for safety.	Pending.

TABLE 1.3-1 (cont'd)

Major Permits, Approvals, and Consultations for the Bradwood Landing Project

Agency	Authority/Regulation/Permit	Agency Action	Status
STATE – WASHINGTON			
SHPO	Section 106 of the NHPA	Review cultural resources reports and comment on recommendations for NRHP eligibility and project effects.	NorthernStar filed a revised pipeline survey report with the FERC on November 16, 2006. The FERC's request for consultation dated November 24, 2006. SHPO commented November 27, 2006.
WDE	Section 401 of the CWA	Water Quality Certification. Issue NPDES permits for hydrostatic test water discharge and construction stormwater discharge.	NorthernStar submitted its JARPA on October 10, 2006. NPDES applications to be submitted by NorthernStar prior to construction.
Washington State Department of Labor and Industries	Explosives User Permit WAC 291-52-64005	Issue permit to purchase, store, and use explosives during pipeline construction.	Permit to be obtained by NorthernStar before construction.
Washington State Department of Natural Resources (WDNR)	Forest Practices Act, RCW 76.09 and WAC 222	Issue Forest Practices Permit.	Permit application pending.
	Aquatic Lands Use and Lease Authorization, RCW 79.105 and WAC 332-30	Authorize use of state-owned aquatic lands for waterbody crossings.	Application pending.
Washington State Department of Transportation (WDOT)	State Highway Crossing Permit, RCW 47.44 and WAC 468-34	Consider issuance of permits to cross state highways.	Permit application pending.
Washington Utilities and Transportation Commission (WUTC)	WAC 480-93	Inspect the natural gas pipeline for safety.	Inspections would begin during construction.
LOCAL			
Clatsop County, Oregon	Multiple Land-use Permits and Approvals	Review consolidated application for compliance. Issue permits and approvals.	Initial consolidated application submitted December 2006; supplemental information provided February 2007. Determined complete by County on February 14, 2007. Planning Board held public hearings on application July 10 and 17, 2007. Decision by County Commissioners pending.
	Section 311 of EPAct	Review and provide consultation regarding NorthernStar's Emergency Response Plan (ERP).	Pending.
Pacific County, Washington	Section 311 of EPAct	Review and provide consultation regarding NorthernStar's ERP.	Pending.
Wahkiakum, Washington	Section 311 of EPAct	Review and provide consultation regarding NorthernStar's ERP.	Pending.
Cowlitz County, Washington	SEPA, Chapter 43.21C RCW	Complete SEPA review of the proposed project.	County would do SEPA review concurrent with the NEPA review.
	Shoreline Management Act	Issue Shoreline Development Permit to cross waterbodies covered by the Shoreline Management Act.	NorthernStar submitted county permit application on October 10, 2006.

TABLE 1.3-1 (cont'd)

Major Permits, Approvals, and Consultations for the Bradwood Landing Project

Agency	Authority/Regulation/Permit	Agency Action	Status
	Critical Areas Ordinance under State of Washington Growth Management Act	Review consistency of the project with the county Critical Areas Ordinance.	NorthernStar submitted county permit application on October 10, 2006.
	Floodplain Management Ordinance	Consider issuance of permit to cross floodplains covered by the Floodplain Management Ordinance.	NorthernStar submitted county permit application on October 10, 2006.
	Gas and Oil Pipeline Ordinance	Consider issuance of a General Permit under the Gas and Oil Pipeline Ordinance.	NorthernStar submitted county permit application on October 10, 2006.
	Forest Lands Conversion Ordinance	Consider issuance of a Class IV-General Forest Practice Permit.	NorthernStar submitted county permit application on October 10, 2006.
All Counties	Road Crossing Permits	Consider issuance of permits to cross county roads.	Permits to be obtained by NorthernStar before construction.
	Grading Permits	Consider issuance of permits for excavation and grading activities.	Permits to be obtained by NorthernStar before construction.
	Solid Waste Disposal	Consider approvals to dispose of solid waste generated by construction.	Permits to be obtained by NorthernStar before construction.

On September 13, 2005, the FERC and Coast Guard jointly issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Bradwood Landing LNG Project, Request for Comments on Environmental Issues, and Notice of Joint Public Meeting, and Site Visit* (NOI). The NOI was sent to 1,093 interested parties including federal, state, and local elected officials; government agency representatives; environmental and public interest groups; Native American tribes; local libraries and newspapers; landowners adjacent to the proposed LNG terminal; and property owners along the proposed pipeline route. The FERC's comment period for the NOI closed on October 17, 2005. A total of 60 letters were received during the NOI comment period.

The Coast Guard issued an NOI for preparing an LOR as to the suitability of the Columbia River for LNG marine traffic on September 9, 2005. The NOI requested comments specifically related to the maritime safety and security aspects of the proposed Bradwood Landing LNG facility. The Coast Guard's comment period for the NOI closed on October 6, 2005 and 22 letters were received. These letters were filed with the FERC public record on November 1, 2005.

On September 29, 2005, the Coast Guard and FERC staff conducted a joint public scoping meeting in Knappa, Oregon, to provide an opportunity for the general public to learn more about the proposed project. The meeting also allowed the public to comment on issues to be included in the EIS and issues related to the LOR. Thirty-seven people commented at the meeting. A transcript of these comments is part of the public record for the Bradwood Landing Project and is available for viewing on the FERC internet website (http://www.ferc.gov).[6] A site visit to selected points along the proposed pipeline route and the LNG terminal location was also held on September 29, 2005. The FERC held a second public meeting in Cathlamet, Washington on October 26, 2005 to answer questions regarding the Commission's Pre-filing and the NEPA review processes and to describe steps the public could take to participate in those processes.

In addition to the public notice and scoping processes discussed above, the FERC conducted agency consultations or participated in interagency meetings to identify issues that should be addressed in this EIS. On April 7, 2005, the FERC sent letters to the COE, Coast Guard, NMFS, EPA, FWS, and ODE requesting their cooperation in the preparation of the EIS. A letter was also sent to the WDE on June 24, 2005 requesting that they become a cooperating party, and our September 13, 2005 NOI invited any other federal, state, local, or tribal agency with jurisdiction or special expertise with respect to environmental issues to formally cooperate with us. The COE and Coast Guard agreed to be cooperating agencies. The NMFS, EPA, FWS, ODE, and WDE declined our invitation. Nevertheless, various agencies acted in a cooperative manner during the Pre-filing process, engaging in consultations, attending meetings, and filing comments on NorthernStar's draft environmental resource reports. Interagency meetings held during the Pre-filing period that were attended by the FERC staff are listed in table 1.4-1.

Throughout the public scoping period (coinciding with the Pre-filing Review Process) we received comments on a wide variety of environmental issues. Between March 7, 2005 and June 5, 2006, we received 102 letters about the project, including 43 letters from individuals, 18 letters from organizations, 2 letters from an Indian tribe, 12 letters from federal agencies, and 27 letters from state and local agencies. In these letters, the most frequently mentioned environmental topics were safety (15.8 percent of comments); socioeconomics (12.7 percent of comments); and biological resources, particularly with respect to salmon in the Columbia River (19.2 percent of comments). Table 1.4-2 summarizes the environmental issues identified during the Pre-filing public scoping process for the Bradwood Landing Project.

[6] Using the "eLibrary" link, select "General Search" from the eLibrary menu and enter the docket number, excluding the last three digits, in the "Docket Number" field (i.e., CP06-365, CP06-366, CP06-376, and CP06-477). Be sure to select an appropriate date range.

On June 5, 2006, NorthernStar formally filed applications seeking authorizations under section 3(a) and 7(c) of the NGA to construct and operate the Bradwood Landing Project. In response to the FERC's Notice of Application (issued June 15, 2006), a total of 38 parties submitted motions to intervene. Intervenors receive all documentation filed in a proceeding, and have the right to seek rehearing of the Commission's decision. The intervening parties are listed in table 1.4-3. Additionally, between June 5, 2006 and July 13, 2007, the FERC received 27 letters from individuals, 13 from organizations, 3 from another LNG developer, 9 from members of the U.S. Congress, 3 from federal agencies, 7 from state or local agencies, and 374 form letters commenting on the project.

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 1.4-1. All of the post-application interagency meetings were related to the production of the EIS, and were, therefore, exempt from the Commission's ex-parte rules. 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 whole or in part to the COE and the Coast Guard for review. Sections of this draft EIS were written with the cooperation and assistance of these agencies.

TABLE 1.4-1

Public and Interagency Meetings for the Bradwood Landing Project Attended by the FERC Staff

Date	Location	Purpose	Attendees
PRE-FILING MEETINGS			
March 8, 2005	Washington, D.C.	Applicant/Interagency Meeting	FERC, NorthernStar, and ODE
May 18, 2005	Portland, OR	Interagency Meeting	FERC, NorthernStar, EPA, Coast Guard, COE, NMFS, DOT, FWS, ODE, WDE, Oregon Public Utility Commission, Oregon Department of Geology and Mineral Industries (DOGAMI), ODEQ, ODFW, ODOT, WDNR, WDE, Port of Portland, Clatsop County, Wahkiakum County, and Cowlitz County
May 19, 2005	Knappa, OR	Open House	FERC, NorthernStar, and Public
June 7, 2005	Salem, OR	Meeting with Oregon State Agencies	FERC, NorthernStar, ODE, ODFW, ODSL, ODLCD, Oregon Department of Justice, and DOGAMI
June 7, 2005	Portland, OR	Meeting with Federal Fishery Agencies	FERC, NorthernStar, FWS, and NMFS
June 8, 2005	Portland, OR	Meeting with COE	FERC, NorthernStar, and COE
July 7, 2005	Longview, WA	Meeting with Washington State Agencies	FERC, NorthernStar, Coast Guard, ODE, WUTC, WDE, WDNR, Washington Department of Fish and Wildlife (WDFW), Cowlitz County, Wahkiakum County, Port of Kalama, and Port of Longview
July 7, 2005	Portland, OR	Meeting with Fishery Agencies	FERC, NorthernStar, NMFS, ODFW, and WDE
August 25, 2005	Portland, OR	Interagency Meeting	FERC, NorthernStar, COE, FWS, ODFW, Columbia River Intertribal Fisheries Commission (CRITFC), WDE, Nez Perce Tribe, and ODE
September 28, 2005	Portland, OR	Interagency Meeting	FERC, NorthernStar, Coast Guard, COE, NMFS, FWS, EPA, WDFW, ODE, WDE, ODLCD, ODSL, and Cowlitz County
September 28, 2005	Longview, WA	Open House	FERC, NorthernStar, and Public
September 29, 2005	WA and OR	Site Visit	FERC, NorthernStar, and Public
September 29, 2005	Knappa, OR	Public Meeting	FERC, Coast Guard, NorthernStar, and Public
October 21, 2005	Portland, OR	Interagency Meeting	FERC, NorthernStar, Coast Guard, NMFS, COE, FWS, EPA, ODE, WDE, ODLCD, WDFW, ODFW, ODSL, and Cowlitz County
October 25, 2005	Kelso, WA	SEPA Meeting	FERC, NorthernStar, WDE, WDFW, and Cowlitz County
October 26, 2005	Portland, OR	Interagency Meeting	FERC, NorthernStar, Coast Guard, COE, NMFS, FWS, EPA, ODE, ODLCD, ODFW, ODSL, Cowlitz County, and CRITFC
October 26, 2005	Cathlamet, WA	Public Meeting	FERC, NorthernStar, and Public
November 16, 2005	Lacy, WA	Meeting with Washington State Agencies	FERC, NorthernStar, NMFS, FWS, EPA, WDE, WDNR, WDOT, Washington Department of Community, Trade, and Economic Development, WDFW, Washington SHPO, and Washington Attorney General's Office
November 17, 2005	Portland, OR	Meeting with CRITFC	FERC and CRITFC
January 24, 2006	Portland, OR	Meeting with Warm Springs Tribe	FERC and Warm Springs Tribal Council
January 25, 2006	Portland, OR	Interagency Meeting	FERC, NorthernStar, COE, NMFS, FWS, EPA, ODE, ODLCD, ODFW, ODEQ, ODSL, WDNR, WDE, WDFW, Cowlitz County, CRITFC, Nez Perce Tribe, and Port of Portland

TABLE 1.4-1 (cont'd)

Public and Interagency Meetings for the Bradwood Landing Project

Date	Location	Purpose	Attendees
POST-APPLICATION MEETINGS			
September 12, 2006	Cathlamet, WA	Vessel Transit Visit	FERC and Coast Guard
September 12, 2006	Portland, OR	Meeting with COE	FERC and COE
September 13, 2006	Portland, OR	Cryogenic Conference	FERC, CG, NorthernStar, ODE, Oregon Office of the State Fire Marshall, WDNR, Clatsop County, Port of Astoria, and other parties
September 13, 2006	Bradwood, OR	Site Visit	FERC, NorthernStar, WDNR, Clatsop County, CRITFC, Nez Perce Tribe, and Public
December 13, 2006	Longview, WA	Meeting with Washington State Agencies	FERC, FWS, WDE, WUTC, WDFW, WDNR, and Cowlitz County
December 13, 2006	Kelso, WA	SEPA Meeting	FERC, NorthernStar, and Cowlitz County
December 14, 2006	Portland, OR	Meeting with Fisheries Agencies on BA	FERC, NorthernStar, Coast Guard, COE, FWS, NMFS, ODFW, ODLCD, CRITFC, and Nez Perce Tribe

TABLE 1.4-2

Environmental Issues Identified During the Pre-filing Public Scoping Process for the Bradwood Landing Project

Specific Issue/Comment	EIS Section Where Comments are Addressed
PURPOSE AND NEED (3.6 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 (7.0 percent of comments)	3.0
Alternative energies and alternative energy sources.	
LNG terminal at alternative onshore sites.	
Alternative pipeline routes.	
Offshore LNG terminal alternatives.	
Alternative LNG storage tank designs and vaporization technologies.	
GEOLOGY (5.5 percent of comments)	4.1
Geologic stability of proposed LNG terminal site; potential for earthquakes and tsunamis.	
Full geotechnical analysis needed.	
Geo-stabilization may need to be increased due to area seismic conditions.	
Potential for flooding to impact project and vice versa.	
SOILS AND SEDIMENTS (2.3 percent of comments)	4.2
Environmental impacts of dredged material placement; best management practices for dredging.	
Potential contamination of soils and sediments.	
Sediment sampling plan is needed.	
Increased erosion due to project.	
Control of the wake from LNG ships.	
Feasibility of dredging Clifton Channel.	
WATER RESOURCES (7.8 percent of comments)	4.3
Dredging impacts on water quality of Columbia River.	
Impacts on waterbodies (e.g., waterbody crossings); the number of waterbody crossings should be minimized.	
WETLANDS (5.7 percent of comments)	4.4
Impacts on wetlands; wetland delineation required.	
Wetland crossings should be minimized; compensatory wetland mitigation plan should be developed.	
BIOLOGICAL RESOURCES (19.2 percent of comments)	4.5 and 4.6
Direct, indirect, and cumulative impacts on endangered and threatened species, EFH, and other non-listed species.	
Short-term and long-term impacts on fishery resources in Columbia River and Hunt Creek.	
Direct and indirect habitat impacts from dredging and pier construction.	
Impacts on Native American tribal fisheries.	
Project should follow Oregon's Fish and Wildlife HMP.	
BA and EFH Assessment should be prepared.	
Impacts from increased ship traffic, changes in water and air temperature, noise, light, exotic and invasive species, spills of pollutants, and withdrawal of river water.	
LAND USE (4.0 percent of comments)	4.7
Consistency with current land use and zoning.	
Residences are within 0.5 mile of LNG terminal and less than 1,000 feet from LNG carriers.	
Project is within Oregon's coastal zone.	
Impacts on recreation, national historic sites, forestry resources, property rights.	

TABLE 1.4-2 (cont'd)

Environmental Issues Identified During the Pre-filing Public Scoping Process for the Bradwood Landing Project

Specific Issue/Comment	EIS Section Where Comments are Addressed
VISUAL RESOURCES (3.6 percent of comments)	4.7
Visual impacts on residents within 5 miles.	
Alteration/degradation of existing shoreline aesthetic.	
Light pollution.	
SOCIOECONOMICS (12.7 percent of comments)	4.8
Impacts on recreational and commercial fishing, tourism, and property values.	
Additional costs of providing security and emergency response services.	
Project would provide increased revenues and jobs to the area.	
Use of eminent domain; environmental justice issues.	
Economic costs of reduced/constrained shipping on the Columbia River.	
TRANSPORTATION (5.7 percent of comments)	4.8
LNG marine traffic impacts on other ship traffic, railroad traffic, commercial fishing, and recreational boating and fishing.	
Increased vehicle traffic on LNG terminal access road.	
Impacts on local traffic if Astoria Bridge is closed during LNG ship transits.	
Areas of the LNG ship safety and security zones need to be defined.	
AIR QUALITY / NOISE (5.5 percent of comments)	4.10
Air emissions from LNG terminal and ships need to address: dust and odors, acidification of regional watersheds, and total air emissions for the life of the project.	
Air quality impacts need to be determined for both Washington and Oregon.	
Impacts of super-cooled air.	
Assess noise impacts on residents within 5 miles of project.	
Accurate assessment of background noise and total noise levels is needed.	
Underwater blasting should be avoided.	
Assess noise impacts (such as pile driving) on aquatic species; provide noise mitigation.	
RELIABILITY AND SAFETY (15.8 percent of comments)	4.11
LNG ship and terminal are targets for terrorists.	
LNG ship navigation issues on Columbia River; proximity of populated areas along transit channel; safety and security zone issues.	
Risks and consequences of LNG spill; history of LNG accidents.	
Limited evacuation routes; limited emergency response services.	
CUMULATIVE IMPACTS (1.7 percent of comments)	4.12
Cumulative impacts on biological resources in the Columbia River.	
Cumulative effects for vegetation, wildlife, aquatic species, and their habitats.	
Cumulative impacts on global warming.	

TABLE 1.4-3

Parties Intervening on the Bradwood Landing Project

Interveners	Date Intervention Filed with FERC	Protest or Neutral
FEDERAL AGENCIES		
NMFS	July 5, 2006	Neutral
U.S. Department of the Interior	July 6, 2006	Neutral
NATIVE AMERICAN		
Nez Perce Tribe	June 29, 2006	Neutral
CRITFC	July 7, 2006	Neutral
STATE AGENCIES		
WDE	July 5, 2006	Neutral
WDFW	July 5, 2006	Neutral
WDNR	July 6, 2006	Neutral
WUTC	July 6, 2006	Neutral
ODE	July 7, 2006	Neutral
COUNTIES		
Columbia County, Oregon and the Columbia County Development Agency	July 5, 2006	Neutral
Clatsop County, Oregon	July 6, 2006	Protest
Cowlitz County, Washington	July 6, 2006	Neutral
Wahkiakum County, Washington	July 6, 2006	Neutral
LOCAL GOVERNMENT		
Port of St. Helens	June 30, 2006	Neutral
City of Astoria	July 5, 2006	Neutral
City of Warrenton	July 5, 2006	Neutral
Knappa-Svensen-Burnside Rural Fire Protection District	July 5, 2006	Neutral
Port of Kalama	July 5, 2006	Neutral
City of Clatskanie, Oregon	July 6, 2006	Neutral
Port of Astoria	July 6, 2006	Neutral
Port of Vancouver	July 6, 2006	Neutral
PRIVATE COMPANIES		
Port Westward LNG, LLC	June 20, 2006	Neutral
Northwest Natural	June 30, 2006	Neutral
Gas Transmission Northwest Corporation	July 5, 2006	Neutral
Greenwood Resources	July 6, 2006	Neutral
Williams Northwest	July 6, 2006	Neutral
Renewable Resources	July 6, 2006	Neutral
Southwest Gas Corporation	July 6, 2006	Neutral
PGE	August 29, 2006	Neutral
ORGANIZATIONS/GROUPS		
Columbia Riverkeeper, Sierra Club, Landowners and Citizens for a Safe Community, Rivervision, Wahkiakum Friend's of the River, Friends of Living Oregon Waters, Willapa Hills Audubon Society, Fisherman's Protective Union, Peter Huhtala, and Christian Bock	July 6, 2006	Neutral
Salmon For All	July 10, 2006	Neutral
Northwest Industrial Gas Users	July 6, 2006	Neutral
INDIVIDUALS		
Roy and Minerva Christison and Greg Roy Christison	June 19, 2006	Neutral
Taryn Edwards	June 19, 2006	Neutral
Lawrence and Wanda Derby	June 22, 2006	Neutral
Stephen Rasmussen	June 28, 2006	Stated opposition, but not official protest
William and Doris Dragich Trust	July 6, 2006	Stated opposition, but not official protest
Stephen Fulton	July 7, 2006	Neutral