

CENTRAL CONVEYOR AND PIER



DRAFT PRE-SCOPING DOCUMENT

**CENTRAL CONVEYOR AND PIER
FRED HILL MATERIALS, INC.
DECEMBER 2006**

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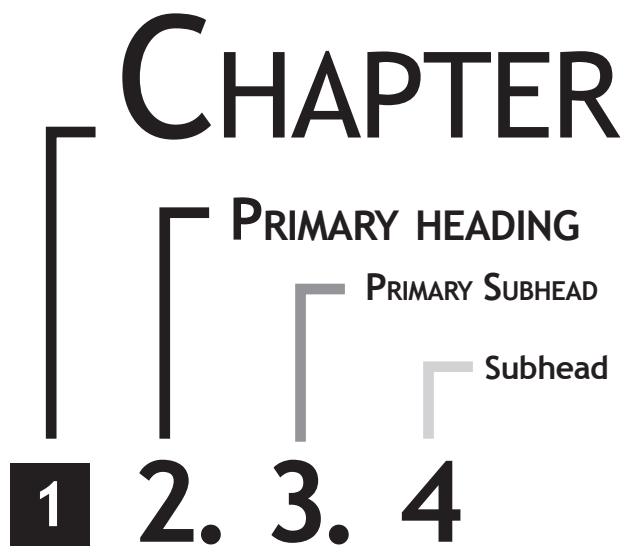
ORGANIZATIONAL KEYS

1 1.2

Indicates first full section appearing on page

DOCUMENT HEADINGS AND NUMERICAL REFERENCES

Referred to as "Chapter One 2.3.4"



1 2 | SAMPLE PRIMARY HEADING

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1 2.1.1 | **Sample Subhead.** Equat, sumsan heniam aci et lam quat. Ratum dion vel ut am do core commodigna aliquat.

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Table 2-1 Chapter 2, first table

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1 02
5

INTRODUCTION

Scoping is a fundamental step in building an Environmental Impact Statement (EIS). Determining the scope of an EIS involves asking questions that will help evaluate and identify a proposal's impact on the environment.

As part of the scoping process, agencies, affected tribes, those with specialized expertise, and the general public are asked to comment on areas to be covered in the EIS, including issues, concerns and alternatives to reduce adverse impacts. Scoping is not about whether a project is good or bad, but rather what an EIS should consider.

Jefferson County will be commencing scoping of the Central Conveyor and Pier project (also known as the "pit to pier" project), proposed by Fred Hill Materials, Inc. (FHM). The aim of this Draft Pre-Scoping Document is to promote informed comments during the scoping process by providing preliminary answers to the following questions regarding the proposed Central Conveyor and Pier project:

- What is being proposed
- Who is proposing it
- Where it is being proposed
- Why it is being proposed
- How public agency decisions are going to be made
- Who is going to make decisions
- When opportunities for public involvement will occur
- What project issues and concerns are to be addressed

The scoping process will lead to the proposed project's Draft EIS and Final EIS, both of which will evaluate and identify adverse environmental impacts.

CHAPTER ONE

- 1 1** PROJECT OBJECTIVE
- 1 2** UNDERLYING NEED FOR ACTION
- 1 3** DECISION-MAKING PROCESS
- 1 4** PRELIMINARY ISSUES AND CONCERNS
TO BE ADDRESSED

DRAFT PRE-SCOPING DOCUMENT

**CENTRAL CONVEYOR AND PIER
FRED HILL MATERIALS, INC.
DECEMBER 2006**

PROJECT OBJECTIVE

See Figures 1-1 through 1-4 for Project Location and Project Components, pages 9-12.

Fred Hill Materials, Inc. (FHM) submitted its project application on March 27, 2003. The applicant's stated objective of the Central Conveyor and Pier project, as detailed in Chapter Two under Proposed Action, is to build a conveyor and pier to move sand and gravel from FHM's Operations Hub to Hood Canal for transport by barges and ships to local, regional, intrastate and interstate markets.



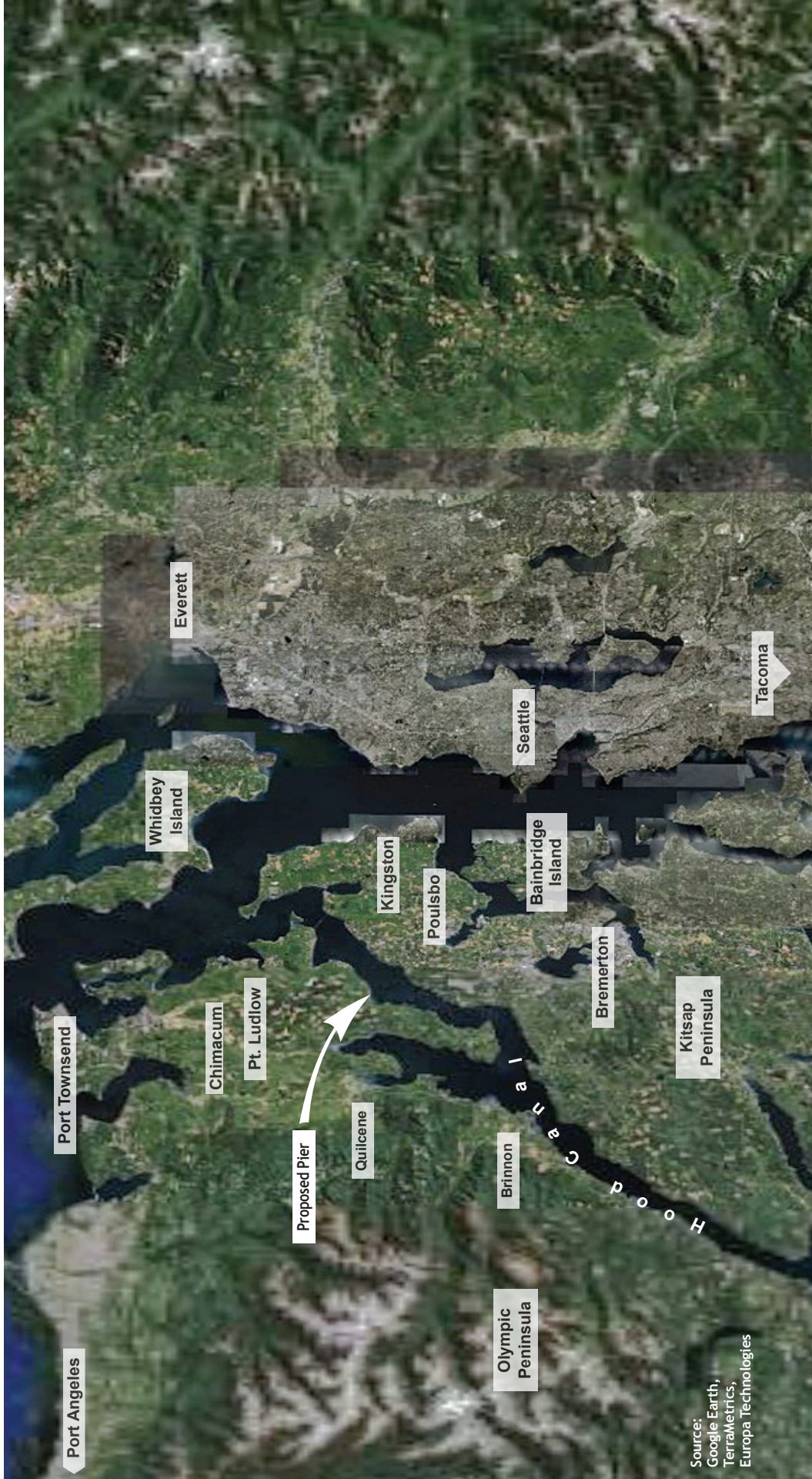
Source:
 Google Earth,
 TerraMetrics,
 Europa Technologies

Central Conveyor and Pier
 Jefferson County, Washington

**Project Location
 Western Washington State**

Figure 1-1
 May 2006

FIGURE 1-1: The project would be located in rural Jefferson County. Stretching from Puget Sound to the Pacific Ocean, the county's predominant land use is commercial forestry.



**Project Location
Puget Sound**

Central Conveyor and Pier
Jefferson County, Washington

Figure 1-2
May 2006

FIGURE 1-2: The project would be located on the northern end of the 60-mile long Hood Canal, south of shipping lanes leading to both Puget Sound and West Coast urban markets.

FIGURE 1-3



**Project Location
Northern Hood Canal**
Figure 1-3

Central Conveyor and Pier
Jefferson County, Washington
May 2006

FIGURE 1-3: The pier would be located on the Olympic Peninsula side of Hood Canal, five miles south of the Hood Canal Bridge; 1.25 miles southwest of South Point; and one mile northeast of Thorndyke Bay.

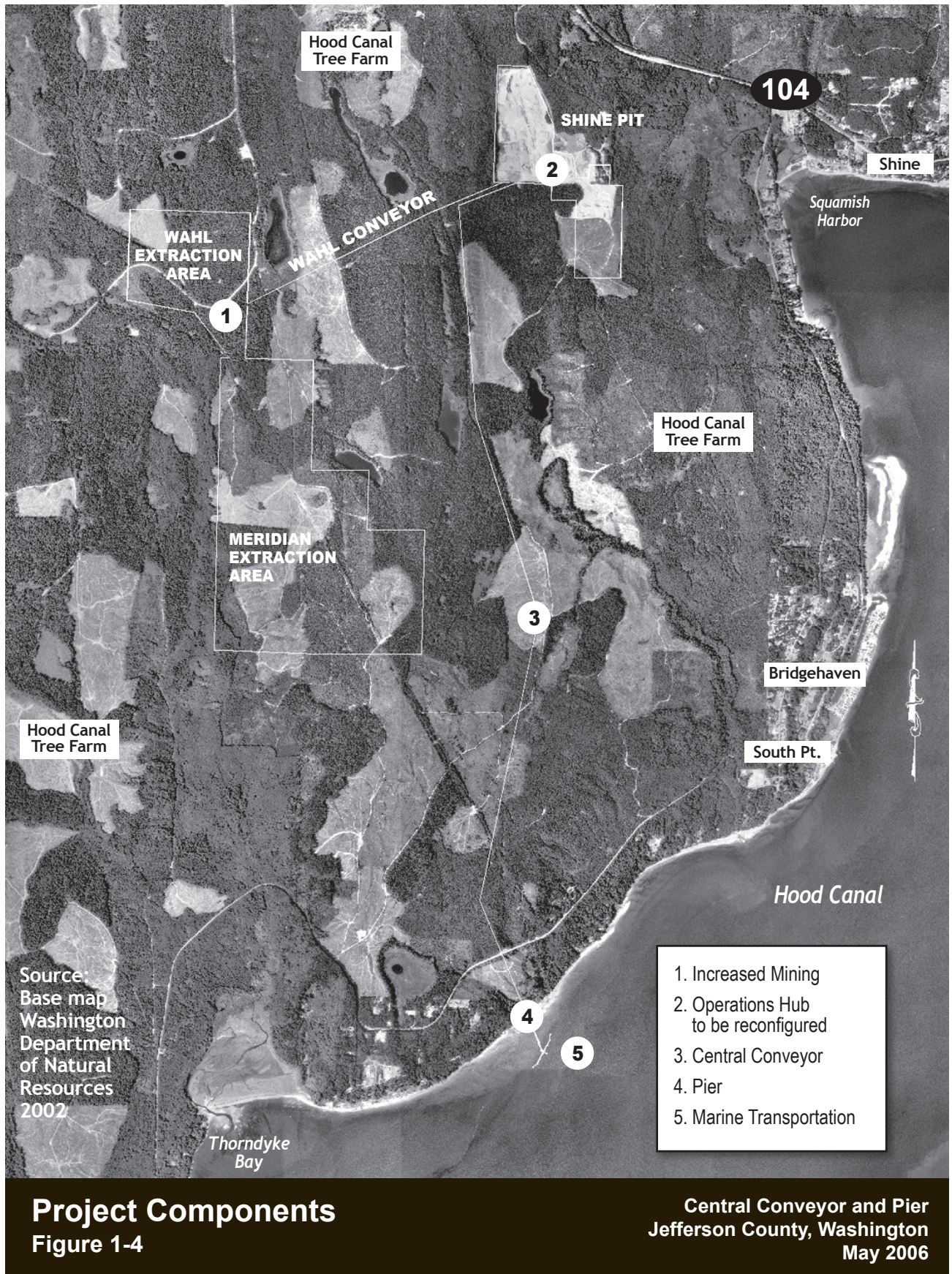


FIGURE 1-4: Proposed project components include increased mining; reconfigure the existing Shine Pit processing, extraction and replanted areas from 191.5 acres to a 100-acre Operations Hub; build a conveyor to Hood Canal, and construct a pier for marine transportation to local, regional, intrastate and interstate markets.

1 2

UNDERLYING NEED FOR ACTION

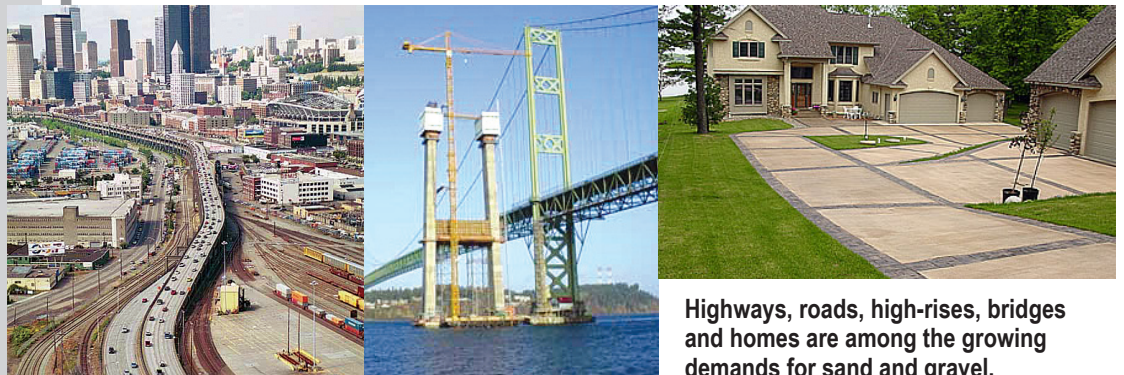
SEPA requires that an EIS specify the purpose and need of the Proposed Action (*WAC 197-11-440*). SEPA allows beneficial environmental impacts resulting from the project to be included in the scoping process, the EIS (*WAC 197-11-402*) and the overall decision-making process of Jefferson County and other agencies with jurisdiction considering the proposed project. Because the Central Conveyor and Pier is a private project, the applicant (FHM) has provided the following Underlying Need for Action for its proposal.

1 2.1

UNDERLYING NEED FOR ACTION (PROVIDED BY APPLICANT)

The underlying need for action stems from the continually increasing demand for sand and gravel, and the decreasing regional and national sources of material. As basic commodities of modern society, sand and gravel are the primary components of concrete and asphalt. Concrete, produced at an estimated rate of five billion cubic yards per year, is the second most consumed substance on earth, after water.

In the next 25 years, the U.S. will consume more aggregate than that which has been mined over the past 100 years, according to the American Geological Institute. Sand and gravel are required to build, repair and replace our highways, roads, bridges, homes, seawalls and public buildings. Transportation infrastructure and public works projects continue to be the greatest consumer of construction aggregates.



Highways, roads, high-rises, bridges and homes are among the growing demands for sand and gravel.

According to a 2003 industry report by the Pacific Lutheran University Business School for the Washington Aggregate and Construction Association (WACA), the annual per capita consumption of aggregate in the state of Washington is approximately 12.7 tons (2000). A 1,500 square-foot home uses 114 tons of aggregate; a single mile of four-lane country road approximately 85,000 tons.

WACA projects that Washington's annual demand for aggregates will

PROVIDED
BY APPLICANT

PROVIDED
BY APPLICANT

exceed 100 million tons by 2020 and require the opening of some 9,000 acres of new mines. Since 1975, approximately 700 sand and gravel mining facilities in Washington have been depleted or reclaimed. In the past decade, approximately 30 new surface mining permits have been issued.

Washington and West Coast urban markets with marine port facilities will increasingly rely upon imported materials, as evidenced in California since the mid-1990s. Despite being the country’s largest producer of aggregate, California’s imports from Canada, Mexico and neighbor states are on a steep rise, according to the Construction Materials Association of California (CMAC). With growing markets, longer application processes and fewer new permits issued, demand for quality sand and gravel has become acute in many regions. In the ‘80s and ‘90s, the number of aggregate mines fell by nearly a third in the Bay Area (32 to 23) and L.A. Basin (81 to 56).



A tug and barge pass Seattle's Elliott Bay to deliver sand and gravel to a Puget Sound urban destination.

California, according to its Department of Conservation estimates, faces a shortfall in aggregate of 3 billion tons over the next four decades. In the Bay Area, current project shortfalls of 12 million tons are projected to rise annually to 29 million tons by 2020. By that same time, current shortfalls of 7 million tons in the L.A. Basin will have risen annually to 34 million tons.

With its marine transportation capabilities, the Central Conveyor and Pier project represents a domestic source for meeting the growing regional, intrastate and interstate need for construction sand and gravel. FHM identifies these markets as Port Angeles (local); Seattle, Tacoma, Everett and Greater Puget Sound urban centers (regional); Vancouver, WA (intrastate); and, Oregon, California and Hawaii (interstate).

The quality of sand and gravel deposits within the Shine Pit existing operation meets an essential aspect of the underlying need. Modern construction specifications dictate strong, durable, properly graded aggregates that can withstand millions of vehicle trips and meet the seismic force requirements of urban structures. The Vashon Glacial period left behind aggregate deposits in the approved Mineral Resource Lands (MRL) Overlay and surrounding areas that are exceptionally clean, durable, close to the surface (incurring minimal overburden) and with physical characteristics that meet and exceed most modern construction specifications. The largely homogenous (non-segregated) deposits of aggregate are very low in fines (1-2 percent passing the 200 sieve), low in wearability (9 on the L.A. Wear Test) and consist of the varied sizes necessary to produce both washed and crushed aggregate products that meet stringent construction demands.

Located on commercial forest lands where mining is a permitted use, the depths of these abundant deposits contribute to the overall extraction efficiency. With materials readily available and generally non-segregated, mining operations can be conducted with a minimum of exposed acreage and/or waste. Along with state and federally mandated reclamation requirements, this lowers the overall environmental impact of mining.

The impact of adding the proposed project's marine delivery capability supports several underlying environmental objectives related to transport of bulk materials such as sand and gravel. Marine transportation reduces fuel use, pollution and accidents. A typical size barge replaces 156 truck-and-trailers on the highway; a larger barge 625 truck-and-trailers; a single ship 2,031, or 29 miles of truck-and-trailers stretched out bumper-to-bumper.

When it comes to moving bulk materials, mass transit makes sense. Over 800 million tons of raw materials and finished goods are moved each year in the U.S. by inland waterways alone. Our crowded highways and roads figure to get more crowded. Domestic freight volumes will increase 80 percent between 1998 and 2020, according to the Washington Transportation Plan Update on Freight Movement (2005). Truck trips on the Interstate 5 corridor rose 94 percent between 1993 and 2003; 72 percent on the Interstate 90 corridor during the same 10 years. Growth in the freight system has outpaced the state's population, which is expected to reach 8.3 million in 2030 (from 4.1 million in 1980). State of Washington officials estimate that it will take \$40 billion in transportation construction projects to relieve its congested highways.



Sand and gravel from Shine Pit deposits meet stringent construction specifications.

The air industry, already subsidized by federal taxpayers, is cutting back in service. The stymied freight rail industry is shy billions of dollars in capital investment. Moving bulk materials by barges and ships helps “free up” freeways, thereby extending the life of our transportation system and saving taxpayers in overall construction and maintenance costs.

In addition, the Army Corps of Engineers and dozens of environmental groups have identified the need to clean up Puget Sound, including restoring beaches and near-shore habitat for a host of native species, most notably salmon. Marine transportation of sand and gravel is the only viable way to achieve beach restoration on a broad scale. FHM's sand and gravel is geologically the same as the aggregate components that line much of Puget Sound. The

Central Conveyor and Pier project would provide an abundant source of material accessible for marine delivery.

Locally, the proposed project will generate an estimated 130 fulltime, family-wage jobs on-shore and off-shore; 30 jobs during pier construction; and new local and state tax revenues that will support county parks, sheriff and other public services.

The importance of mining is proclaimed in the Washington State Surface Mining Act (*RCW 78.44.010*):

“The Legislature recognizes that the extraction of minerals by surface mining is an essential activity making an important contribution to the economic well-being of the state and nation. It is not possible to extract minerals without producing some environmental impacts. At the same time, comprehensive regulation of mining and thorough reclamation of mined lands is necessary to prevent or mitigate conditions that would be detrimental to the environment and to protect the general welfare, health, safety, and property rights of the citizens of the state. Surface mining takes place in diverse areas where the geologic, topographic, climatic, biologic, and social conditions are significantly different, and reclamation specifications must vary accordingly. Therefore, the legislature finds that a balance between appropriate environmental regulation and the production and conservation of minerals is in the best interests of the citizens of the state.”

1 3 | OVERVIEW OF DECISION-MAKING PROCESS

1 3.1 DECISIONS TO BE MADE

The State Environmental Policy Act (SEPA) review is an open, public process, allowing multiple opportunities for review and comment on the environmental impacts of any major actions significantly affecting the environment. The specific requirements for making decisions under SEPA are set forth in the:

- State Environmental Policy Act (SEPA) (RCW 43.21C)
www.apps.leg.wa.gov/RCW
- SEPA Rules (WAC 197-11)
www.apps.leg.wa.gov/WAC
- Jefferson County Unified Development Code (UDC),
Title 18 Jefferson County Code
www.co.jefferson.wa.us/commdevelopment/udc

Based on a SEPA EIS, Jefferson County will decide whether to approve, approve with conditions, or deny FHM applications for the following Jefferson County permits:

- Zoning Conditional Use *UDC Sec. 18.15*
- Stormwater *UDC Sec. 18.20*
- Shoreline Conditional Use
and Recommendation to the
Department of Ecology (Ecology) *UDC Sec. 18.25*
- Shoreline Substantial Development *UDC Sec. 18.25*

See Appendix G for an expanded list of state, federal and tribal authorities involved in the decision-making process.

In addition to Jefferson County's decisions under its local jurisdiction, several state and federal agencies need to approve, approve with conditions, or deny permits for the private project. Other agencies and tribes, while not having permitting requirements, will provide specialized expertise and/or otherwise participate in the EIS, particularly regarding environmental impacts and /or mitigation measures within their purview.

Other agencies involved in the decision-making process:

- U.S. Army Corps of Engineers (Corps)
- U.S. Navy (Navy)
- U.S. Department of Transportation-Federal Highway Administration (FHWA)
- U.S. National Ocean & Atmospheric Administration-Marine Fisheries Service (NOAA Fisheries)

- U.S. Fish & Wildlife Service (USFWS)
- U.S. Environmental Protection Agency (EPA)
- U.S. Department of Homeland Security (DHS)
- U.S. Coast Guard (Coast Guard)
- Port Gamble S’Klallam Tribal Nation
- Skokomish Tribal Nation
- Jamestown S’Klallam Tribal Nation
- Lower Elwha Tribal Nation
- Suquamish Tribal Nation
- Washington State Department of Transportation (WDOT)
- Washington State Department of Fish and Wildlife (WDFW)
- Washington State Department of Natural Resources (WDNR)
- Washington State Department of Ecology (Ecology)
- Washington State Olympic Region Clean Air Agency (ORCAA)
- Washington State Department of Archaeology and Historic Preservation (WDAHP)

1 3.2

DECISION FACTORS

Following public, local, state, tribal and federal reviewing agencies and organizations, the key decision factors to be considered by Jefferson County include:

- Approval Criteria for Conditional Uses (*UDC Section 18.15, Appendix D*).
- Criteria in the Jefferson County Shoreline Master Program and Washington State Shoreline Management Act (SMA) (*RCW 90-58; UDC Section 18.25, Shoreline Master Program*).
- Impacts of Proposed Action, No Action and any alternatives described in the EIS.
- Requirements for environmental analysis, protection and mitigation measures in Jefferson County’s 1998 Growth Management Act Comprehensive Plan (Comp Plan) and its implementing regulations (UDC).
- Jefferson County’s 15 conditions set forth in approval of FHM’s 690-acre Mineral Resource Lands (MRL) overlay (*Jeffco Ordinance 08-0706-04*).
- Input from the general public, citizen groups, individuals with special expertise, and local, state, federal and tribal governments.
- Recommendations from Jefferson County Department of Community Development (DCD) staff report.
- Discretionary authority granted to Jefferson County under SEPA (*WAC 197-11-660*).

There are additional factors beyond the EIS to be considered. The following SEPA text describes the overall decision framework under SEPA (*WAC 197-11-448*):

“SEPA contemplates that the general welfare, social, economic, and other requirements and essential considerations of state policy will be taken into account in weighing and balancing alternatives and in making final decisions. However, the environmental impact statement is not required to evaluate and document all of the possible effects and considerations of a decision or to contain the balancing judgments that must ultimately be made by the decision makers.

“Rather, an environmental impact statement analyzes environmental impacts and must be used by agency decision makers, along with other relevant considerations or documents, in making final decisions on a proposal.

“The EIS provides a basis upon which the responsible agency and officials can make the balancing judgment mandated by SEPA, because it provides information on the environmental costs and impacts. SEPA does not require that an EIS be an agency’s only decision-making document.”

1 3.3 ENVIRONMENTAL IMPACT STATEMENT AND PUBLIC INVOLVEMENT

An EIS is the primary vehicle by which the public participates in making decisions under SEPA. In its 2003 application, FHM requested that the Central Conveyor and Pier proposed project undergo an EIS.

- 1 3.3.1 **Scoping.** Scoping (*WAC 197-11-408*) is the process by which a lead agency focuses an EIS to address the probable significant adverse environmental impacts, taking public comments from individuals, organizations and local, state, federal and tribal governments. SEPA does not require analyses of impacts or concerns which are remote or speculative.

Jefferson County issued a Determination of Significance (DS) (*WAC 197-11-360*) and will initiate formal Scoping by publishing in newspapers of record as well as in the SEPA Register maintained by Ecology. Additional notices will be sent from Jefferson County’s mailing list to those who had expressed interest in applications submitted by FHM.

As allowed under Expanded Scoping (*WAC 197-11-410*), Jefferson County will hold an open house to provide the public an opportunity to learn more about the proposed Central Conveyor and Pier project, reasonable alternatives and mitigating measures. Jefferson County will incorporate the substantive scoping comments received into the DEIS.

1 3.3.2 Draft Environmental Impact Statement (DEIS). A DEIS represents the second formal opportunity for public participation in the decision-making process. Jefferson County will solicit comments, including the adequacy of analysis and conclusions regarding probable significant adverse environmental impacts, study methodology, reasonable alternatives, and possible mitigation measures.

1 3.3.3 Final Environmental Impact Statement (FEIS). Following public review of the DEIS, Jefferson County will respond to comments received and issue a FEIS prior to making any final decision whether to approve, approve with conditions, or deny FHM’s application.

1 3.4 MAKING A DECISION

Following the FEIS, the DCD will present a staff report and recommendation to the Jefferson County Hearing Examiner, who will render decisions on the zoning conditional use and stormwater permits. The Hearing Examiner will submit recommendations regarding the shoreline conditional use permit to Ecology for a final decision, per the Shoreline Management Act (SMA).

1 3.5 PROJECT RELATIONSHIP TO OTHER SEPA DECISIONS

1 3.5.1 Approved MRL Designation in the Shine-Thorndyke Area

For location of Wahl and Meridian extraction areas, see Figure 1-4 on page 12.

(Wahl and Meridian extraction areas). To meet market demands while protecting future resources – by complying with Jefferson County local rules (UDC) for designating areas of “long term commercially significant mineral resources” as mandated by the Growth Management Act (GMA), and gain the legal protections and notice thereby afforded – FHM submitted to the county an application for a Comprehensive Plan amendment (*Jeffco MLA02-235*) for 6,240 acres to be designated as Mineral Resource Lands (MRL) overlay in April 2002.

On July 6, 2004, after additional environmental analysis, the Jefferson County Commissioners re-approved a MRL overlay of 690 acres located on the Thorndyke Block (20,901 acres) of the Hood Canal Tree Farm (71,762 acres). The MRL includes extraction areas (*Jeffco Ordinance 08-0706-04*) identified by FHM as Wahl and Meridian.

Jefferson County determined that the MRL decision was separate from the Central Conveyor and Pier proposed project. The Western Washington Growth Management Hearings Board subsequently upheld the county’s decision. While that decision has been appealed to the Jefferson County Superior Court, the decision is presumed valid.

While this MRL overlay (a SEPA non-project decision) did not permit specific mining proposals, it did evaluate mining impacts and includes 15 conditions for how mining would occur. Notably, Condition 12 of Jefferson County Ordinance 08-0706-04 allows up to 40 acres being disturbed at one time, an increase from the current 10-acre limit allowed on forest resource lands. *(See Jeffco Ordinance 08-0706-04 for listing of all conditions and factors surrounding the adoption of this MRL.)* Condition 14 reiterated the applicant's request for an EIS, stating that:

"The application for a conveyor and pier facility for barge loading in the Hood Canal has previously received a threshold Determination of Significance (DS) from Jefferson County, requiring the preparation of a project-action EIS. Transportation of extracted materials to anticipated markets shall be a component of the environmental review of any extraction permit applications. Any permit issued shall be based on the transportation methods and anticipated rate of transport stated in the project application.

"Subsequent to extraction project approval, any substantial change in the rate of extraction associated with that extraction proposal shall require either a new or amended permit, and potentially a new threshold determination issued by Jefferson County as is allowed by WAC 197-11-600."

1 3.6 PROJECT-SPECIFIC EXTRACTION AREAS

The proposed project does not include project-specific extraction areas. The EIS will address the environmental impacts of the rate of extraction due to increased mining, should the Central Conveyor and Pier project be developed.

Should the project be developed, the extraction rates from the Wahl Extraction Area would accelerate due to the added marine delivery. This acceleration would advance the time frame for application for extraction permits in some or all of the remaining MRL. FHM expects that as excavation is completed in the Wahl Extraction Area, permits for expansion of mining into some or all of the Meridian Extraction Area will be submitted and further SEPA review conducted as appropriate. The exact timing of prospective application(s) for the Meridian Extraction Area will be a function of numerous variables, including but not limited to future market demand.

1 4 PRELIMINARY ISSUES AND CONCERNS TO BE ADDRESSED

1 4.1 MAJOR AREAS OF CONTROVERSY TO BE ADDRESSED

Environmental elements and topics will be addressed and fully analyzed in the DEIS. Identified and based upon project-specific features, issues and concerns (*and on RCW 43.21C.110 [1][d] and [f], as provided in WAC 197-11-444*), one or more of the following environmental elements and topics have been cross-referenced with each preliminary issue and concern appearing in Chapter One 4.2.

Environmental elements and topics:

Table 1-1 Cross-Reference Guide for Elements of the Environment and Preliminary Issues and Concerns to be Addressed begins on page 49.

- 3.1 Air
- 3.2 Earth
- 3.3 Water
- 3.4 Marine Physical Environment
- 3.5 Marine Plants and Animals
- 3.6 Terrestrial Plants and Animals
- 3.7 Land and Shoreline Use
- 3.8 Light, Glare and Aesthetics
- 3.9 Noise and Vibration
- 3.10 Marine Transportation and Safety
- 3.11 Ground Transportation and Safety
- 3.12 Historic and Cultural Preservation
- 3.13 Energy and Natural Resources
- 3.14 Local and Regional Economics

Drafted from informal comments Jefferson County has received thus far from the public, citizen groups, individuals with special expertise, local, state, federal and tribal governments, four of the most commonly expressed concerns have been related to the:

- Health of the Hood Canal
- Hood Canal Bridge traffic and safety
- “Industrialization” of Hood Canal
- Size and scope of mining operation (increased mining/rate of extraction)

1 4.1.1 Health of the Hood Canal. Hood Canal is a glacier-carved saltwater fjord, an inlet that stretches approximately 60 miles from its northern mouth at Puget Sound’s Admiralty Inlet south (45 miles) to Union, where the Canal

bends northeast and ends at Belfair. The proposed pier site is located in the upper Canal five miles south of the Hood Canal Bridge and approximately 10 miles south of Admiralty Inlet shipping lanes that connect Puget Sound ports with the Strait of Juan de Fuca.

In recent years, discussions of the health of Hood Canal have centered on areas of low oxygen levels and associated fish kills (sometimes referred to as “dead zones”), particularly in the lower reaches of the Canal during summer and fall. Notable fish kills were reported during 2002, 2003 and 2006. These events affected thousands of juvenile perch (June 2003) and numerous fish, octopi and sea cucumbers. According to the University of Washington’s Hood Canal Dissolved Oxygen Program (HCDOP), Hood Canal’s seasonally low dissolved oxygen concentrations are at their lowest in recorded history, the area of low dissolved oxygen is getting larger, and the periods of low dissolved oxygen lasting longer.



Looking south from the Hood Canal Bridge, the proposed pier site is five miles southwest on the Olympic Peninsula side (right) of the 60-mile-long Canal. Concerns have been raised that the proposed project could exacerbate the Canal’s low-dissolved oxygen problems and threaten its overall ecosystem.

Also according to the HCDOP, and as supported by studies conducted at similar fjords in Norway, many natural factors contribute to low dissolved oxygen levels in fjords: shallow “sills” that slow water circulation and mixing, incoming ocean water quality, seasonal weather patterns, and naturally occurring algae blooms. The HCDOP is investigating these natural factors, as well as human factors that may contribute to low dissolved oxygen levels, including altering river flows, landscapes, and marine life; adding excess nutrients to the waters that can

fuel extra algae growth; and adding extra carbon to the ecosystem that can influence climate change.

Future developments along Hood Canal’s shoreline – such as residential, military, public works, roads, transportation facilities and commercial uses – could potentially present immediate and/or long-term impacts on the Canal’s marine habitat, resulting in damage to shellfish, salmon runs, near-shore habitats, recreational activities, commercial fishing enterprises, tribal harvest rights through habitat alteration, oil spills and other forms of pollution.

Concerns have been raised that the Central Conveyor and Pier project could exacerbate the existing problems in Hood Canal, inhibit efforts to resolve ecosystem issues and tip the scales toward the collapse of the Canal.

1 4.1.2

Bridge Traffic and Safety. The Hood Canal Bridge extends State Route 104 from the North Kitsap Peninsula to the Olympic Peninsula. Opened on Aug. 12, 1961, it is the world’s longest saltwater floating bridge (7,869 feet total) and the sole expanse crossing Hood Canal. Rebuilt in 1981 following a February 1979 storm that sank the western half of the bridge, the Hood Canal Bridge is currently undergoing a \$471 million replacement (eastern half) and retrofit (western half) that will increase its overall strength, stability, provide improved mechanical systems for bridge openings and widen lanes and shoulders that will reduce traffic congestion and improve safety.

The bridge is the primary arterial link connecting Olympic Peninsula residents to retail marketplaces, healthcare services and employment opportunities in Kitsap County and beyond. It also serves as the gateway for Olympic Peninsula’s tourism industry, providing a route for Kitsap, King, Pierce, Snohomish and Interstate 5 corridor populaces to access various tourist destinations in and around Port Ludlow, Port Townsend, Sequim, Port Angeles, Neah Bay, Forks, Olympic National Park, Pacific beaches and other recreational destinations.



One of the primary public concerns has centered on the impacts of increased marine activity on the Hood Canal Bridge as a result of the Central Conveyor and Pier project. Increased bridge openings and/or bridge “allisions” (moving object colliding with a stationary object) could result in increased traffic delays, possible structural damage or threaten the safety of the thousands who use the bridge.

Potential impacts of increased marine transportation on the Hood Canal Bridge have raised concerns.

Related concerns include the isolation or hinderance of Olympic Peninsula residents’ access to Kitsap Peninsula should increased marine traffic compromise the Hood Canal Bridge. Additionally, concerns have been expressed that a bridge closure or undue traffic delays as a result of the proposed project’s marine transportation activities could deter tourists from visiting the Olympic Peninsula, thereby jeopardizing tax revenues derived from the peninsula’s tourism-based economies.

1 4.1.3

‘Industrialization’ of Hood Canal. Given the relative lack of existing commercial activities on the shorelines of Hood Canal, some view any shoreline activity as representing an immediate and long-term environmental threat to the Canal’s rural character, marine habitats, water quality, recreational use and tribal protected treaty rights. Concerns were expressed that the Central Conveyor and Pier project would set a precedent prompting future major industrial development and activities on Hood Canal.

1 4.1.4

The projected sequence and rate of extraction are defined on page 70 under Proposed Action.

Size and Scope of Mining Operation (increased mining and rate of extraction). Should FHM receive necessary approvals to develop the Central Conveyor and Pier, the extraction rates (subject to market demand) would accelerate due to the added marine delivery.

Concerns have been raised that increased mining, in order to meet new regional, intrastate and interstate markets, could ultimately increase the current mining operation's size and scope beyond the approved 690-acre MRL overlay, hasten the probability of FHM applying for and receiving subsequent future MRL designations and mining permits, and result in "strip mining 20,000 acres" (Thorndyke Block of the Hood Canal Tree Farm).

1 4.2

PRELIMINARY ISSUES AND CONCERNS TO BE ADDRESSED

The DEIS will identify any probable significant adverse environmental impacts. It will also identify impacts deemed non-significant, too remote and/or speculative to require detailed analyses. The Preliminary Issues and Concerns to be Addressed, including the Major Areas of Controversy, are outlined here under the project's five primary components:

- Increased Mining
- Operations Hub
- Central Conveyor
- Pier
- Marine Transportation

The following issues and concerns were drafted from informal comments raised by the public and various agencies prior to the commencement of scoping. Each issue or concern is referenced under direct and indirect environmental elements and/or topics whose further detailed analyses will appear in the DEIS.

4.2.1

Increased Mining.

Should the project be developed, extraction rates from the 690-acre MRL would accelerate due to added marine delivery, subject to future market demand.



Mining would take place within a commercial tree farm.

Those environmental elements/topics that most directly relate to a particular issue or concern appear in bold.

- M1. Increased mining activities could produce excessive fugitive dust or exhaust emissions, resulting in:
 - a. hazardous air quality conditions for nearby residents;
 - b. increased haze and decreased visibility;
 - c. decreased real estate values;
 - d. diminished property tax revenues;
 - e. deterred tourism activity;
 - f. damaged local economy.

*Air 3.1
Land and Shoreline Use 3.7
Light, Glare and Aesthetics 3.8
Local and Regional Economics 3.14*

- M2. Increased mining activities could produce excessive noise, vibration, light and glare, resulting in:
 - a. disturbance to *wildlife* (birds, mammals, amphibians, reptiles and other organisms) within the commercial tree farm;
 - b. decreased real estate values;
 - c. diminished property tax revenues;
 - d. deterred tourism activity;
 - e. damage to the local economy.

*Terrestrial Plants and Animals 3.6
Land and Shoreline Use 3.7
Light, Glare and Aesthetics 3.8
Noise and Vibration 3.9
Local and Regional Economics 3.14*

- M3. Required reclamation efforts of increased mining could fail, resulting in:
 - a. poor viability and productivity of plant, fish and wildlife;
 - b. increased presence and/or spread of noxious/invasive plant species;
 - c. erosion;

See Table 1-1 Cross-Reference Guide on page 49 for a complete list of Preliminary Issues and Concerns to be Addressed and their corresponding direct and indirect/related impacts on elements of the environment.

- d. reduced timber yields;
- e. visual blight;
- f. decreased real estate values;
- g. diminished property tax revenues;
- h. deterred tourism;
- i. damage to the local economy.

Earth 3.2
Water 3.3
Terrestrial Plants and Animals 3.6
Land and Shoreline Use 3.7
Energy and Natural Resources 3.13
Local and Regional Economics 3.14

- M4. Exposed or compacted soils, altered topography and drainage patterns could create uncontrolled stormwater run-off, resulting in:
- a. sediments and silts entering *surface* waters (run-off, springs, streams, creeks, wetlands, lakes);
 - b. increased peak flows eroding landscapes and scouring existing surface water beds and banks;
 - c. damaged aquatic habitat (fresh and saltwater).

Earth 3.2
Water 3.3
Terrestrial Plants and Animals 3.6

- M5. Increased water required for dust control resulting from increased mining could threaten adjacent wells, resulting in:
- a. lowered runoff from springs;
 - b. depleted aquifers supplying neighboring wells;
 - c. decreased local real estate values;
 - d. diminished property tax revenues.

Water 3.3
Terrestrial Plants and Animals 3.6
Local and Regional Economics 3.14

- M6. Extraction equipment from increased mining could spill/leak *pollutants* (fuel, oil, or other toxic fluids) onto the ground of the commercial tree farm, resulting in:
- a. polluted surface waters;
 - b. polluted *groundwater* (any water below the ground, including seasonal water table, interflow and perched water, local and regional aquifers).

Water 3.3
Terrestrial Plants and Animals 3.6

- M7. Altered aquifer recharge regimes could expose groundwater, puncture an aquifer or create extreme fluctuation in Thorndyke Creek flows, resulting in:
- a. sediment, silts and pollutants readily entering surface waters;
 - b. newly formed surface waters (from a punctured aquifer) eroding landscapes and scouring existing surface water beds and banks;

- c. less groundwater storage and discharge to springs that feed surface waters;
- d. stranded eggs or juvenile salmon, destroyed fish habitat or interference of fish migration in Thorndyke Creek;
- e. reduced water supply for neighboring wells.

*Water 3.3
Terrestrial Plants and Animals 3.6*

M8. Increased mining could alter habitats, change wildlife movements, and block wildlife travel corridors within the commercial tree farm, resulting in reduced distributions and populations of deer, cougar, bear and other wildlife.

Terrestrial Plants and Animals 3.6

- M9. Altered wildlife habitats could reduce functional values of surface waters, resulting in:
- a. reduced distributions and populations of wildlife, including threatened, endangered or sensitive wildlife species;
 - b. reduced hunting and bird-watching opportunities.

*Water 3.3
Terrestrial Plants and Animals 3.6*

- M10. Noise and activity from increased mining could disturb and frighten wildlife, resulting in:
- a. lost use of habitat and/or nesting;
 - b. reduced distributions and populations of threatened, endangered or sensitive wildlife species.

*Terrestrial Plants and Animals, 3.6
Noise and Vibration 3.9*

M11. Increased mining could be inconsistent with local plans and policies, resulting in reduced ability of Jefferson County to meet long-term planning goals and objectives identified in the Comprehensive Plan, as prepared under the Growth Management Act.

Land and Shoreline Use 3.7

- M12. Increased mining could be incompatible with existing on-site and/or adjacent land uses, resulting in:
- a. lost pristine nature of Hood Canal character;
 - b. reduced local use for hunting, fishing, mountain bike riding or other recreational activities;
 - c. deterred tourism;
 - d. damaged local economy;
 - e. reduced property values.

*Land and Shoreline Use 3.7
Local and Regional Economics 3.14*

- M13. Increased mining could create a fire hazard within the commercial tree farm, resulting in:
- a. destroyed timber;
 - b. destroyed wildlife and aquatic habitats.

Terrestrial Plants and Animals 3.6
Energy and Natural Resources 3.13

- M14. Increased mining near ephemeral creeks and streams could destroy nearby fish habitats, resulting in:
- a. reduced distributions and populations of fish, including threatened and endangered fish species;
 - b. reduced fishing opportunities;
 - c. reduced foraging areas for wildlife.

Terrestrial Plants and Animals 3.6

- M15. Extraction could disturb archaeological and/or cultural resources and properties, resulting in:
- a. loss or disturbance of tribal burial grounds;
 - b. loss or disturbance of cultural properties;
 - c. loss or disturbance of historically important sites, structures or artifacts.

Historic and Cultural Preservation 3.12

- M16. Extraction rates subject to market conditions could exceed projected acreage, resulting in:
- a. greater overall environmental and economic impacts;
 - b. loss of mineral lands needed for long-term use.

Energy and Natural Resources 3.13
Local and Regional Economics 3.14

- M17. Increased mining could deter tourism and decrease real estate values, resulting in:
- a. lost revenues for local businesses and entrepreneurs;
 - b. diminished property tax revenues;
 - c. damaged local economy.

Local and Regional Economics 3.14

- M18. Increased mining could destabilize slopes or otherwise create excessive erosion, resulting in:
- a. silted streams and wetlands;
 - b. damage to aquatic habitats and fish;
 - c. loss of wildlife habitat;
 - d. increased haze and decreased visibility;
 - e. visual blight.

Earth 3.2
Water 3.3
Terrestrial Plants and Animals 3.6
Light, Glare and Aesthetics 3.8

M19. Increased mining could alter aquifer recharge and in-stream flow of creeks, resulting in:

- a. lower in-stream flows during critical low flow periods in late fall;
- b. reduced habitat for spawning and juvenile salmon and trout;
- c. juvenile salmon being stranded by receding waters.

*Water 3.3
Terrestrial Plants and Animals 3.6*

1 4.2.2

Operations Hub. The present Shine Pit includes 191.5 acres of extraction sites, replanted areas and processing activities. To accommodate increased processing, the Operations Hub would be reconfigured on 100 acres. Access to local markets will remain off Rock-to-Go Road (Forestry Service Road #3100).



The existing Shine Pit from atop Ace Paving's asphalt tower, looking north at Rock-to-Go Road that connects FHM's truck-based operation via SR 104 to local markets in Jefferson, Clallam and Kitsap counties.

See Figure 2-1 Shine Pit (Existing) on page 63. For more on the Operations Hub under Proposed Action, see page 71.

H1. Increased processing and handling could create fugitive dust or exhaust emissions, resulting in:

- a. hazardous air quality conditions for nearby residents;
- b. increased haze and decreased visibility;
- c. decreased real estate values;
- d. diminished property tax revenues;
- e. deterred tourism activity;
- f. damaged local economy.

*Air 3.1
Light, Glare and Aesthetics 3.8
Local and Regional Economics 3.14*

H2. Groundwater withdrawals for increased processing could reduce available water levels in local aquifers, resulting in:

- a. lowered runoff from springs;
- b. depleted aquifers supplying neighboring wells;

- c. decreased local real estate values;
- d. diminished property tax revenues.

Water 3.3
Terrestrial Plants and Animals 3.6
Local and Regional Economics 3.14

- H3. Increased impervious surface at the reconfigured Operations Hub could create uncontrolled stormwater run-off, resulting in:
- a. sediments and silts entering surface waters;
 - b. increased peak flows eroding landscapes and scouring existing surface water beds and banks.

Water 3.3
Terrestrial Plants and Animals 3.6

- H4. Increased processing at the reconfigured Operations Hub could spill/leak pollutants onto the ground of the commercial tree farm, resulting in:
- a. polluted surface waters;
 - b. polluted groundwater.

Water 3.3
Terrestrial Plants and Animals 3.6

- H5. Noise from increased processing equipment and related operations could exceed regulated noise levels, resulting in:
- a. decreased real estate values;
 - b. diminished property tax revenues;
 - c. deterred tourism activity;
 - d. damaged local economy.

Terrestrial Plants and Animals 3.6
Land and Shoreline Use 3.7
Noise and Vibration 3.9
Local and Regional Economics 3.14

- H6. Reconfigured Operations Hub could destroy views from sensitive viewpoints, including parks, designated recreation areas, areas with concentrated residences or vacation homes, scenic lookouts and scenic highways, resulting in:
- a. decreased real estate values;
 - b. diminished property tax revenues;
 - c. deterred tourism activity;
 - d. damaged local economy.

Land and Shoreline Use 3.7
Light, Glare and Aesthetics 3.8
Local and Regional Economics 3.14

- H7. Increased activity at the reconfigured Operations Hub could be inconsistent with local plans and policies, resulting in reduced ability of Jefferson County to meet long-term planning goals

and objectives identified in the Comprehensive Plan, as prepared under the Growth Management Act.

Land and Shoreline Use 3.7

- H8. Increased activity at the reconfigured Operations Hub could be incompatible with existing on-site and/or adjacent land uses, resulting in:
- a. lost pristine nature of Hood Canal character;
 - b. reduced local use for hunting, fishing, mountain bike riding or other recreational activities;
 - c. deterred tourism;
 - d. damaged local economy;
 - e. reduced property values.

*Land and Shoreline Use 3.7
Local and Regional Economics 3.14*

- H9. Increased activity at the reconfigured Operations Hub could consume excessive amounts energy and fuels, resulting in:
- a. increased local and regional energy demand;
 - b. increased prices for electricity and/or fuel;
 - c. increased emissions from burning fossil fuels.

Energy and Natural Resources 3.13

- H10. Increased activity at the reconfigured Operations Hub could deter tourism and decrease real estate values, resulting in:
- a. lost revenues for local businesses and entrepreneurs;
 - b. diminished property tax revenues;
 - c. damaged local economy.

Local and Regional Economics 3.14

- H11. Reconfigured Operations Hub could increase traffic on SR 104, resulting in:
- a. traffic delays;
 - b. traffic accidents, injuries and death;
 - c. reduced tourism;
 - d. lost revenue for local businesses and entrepreneurs;
 - e. damaged local economy.

*Ground Transportation and Safety 3.11
Local and Regional Economics 3.14*

1 4.2.3

For Central Conveyor description and specifications, see page 71 under Proposed Action.

Central Conveyor.

Sand and gravel would be moved south from the Operations Hub to a pier on Hood Canal for marine transport. The Central Conveyor would be four miles long and comprised of Twin Conveyors (each five feet wide), a Single Conveyor (six feet wide) and six transfer stations.



A 30-inch wide electric-powered conveyor with enclosed self-lubricating rollers transfers material to processing at the Shine Pit.

- C1. Transporting sand and gravel along the conveyor could generate fugitive dust, resulting in
 - a. hazardous air quality conditions for neighboring residences and properties;
 - b. increased haze and decreased visibility;
 - c. deterred tourism activity;
 - d. damaged local economy.

Air 3.1
Land and Shoreline Use 3.7
Light, Glare and Aesthetics 3.8
Local and Regional Economics 3.14

- C2. Realignment/abandonment of existing forestry service road and creation of a new forestry service road that would be used to maintain the Central Conveyor could create uncontrolled storm water runoff, resulting in:
 - a. scouring existing surface water beds and banks;
 - c. damaged aquatic habitat.

Water 3.3
Terrestrial Plants and Animals 3.6

- C3. Sand and gravel transported on the Central Conveyor could spill, resulting in:
 - a. sediments and silts entering surface waters;
 - b. damaged aquatic habitat.

Water 3.3
Terrestrial Plants and Animals 3.6

- C4. Central Conveyor could spill/leak pollutants onto the ground of the commercial tree farm, resulting in:
 - a. polluted surface waters;
 - b. polluted groundwater.

*Water 3.3
Terrestrial Plants and Animals 3.6*

- C5. Central Conveyor could block wildlife travel corridors within the commercial tree farm, resulting in reduced distributions and populations of deer, cougar, bear and other wildlife.

Terrestrial Plants and Animals 3.6

- C6. Central Conveyor could produce noise and vibration, resulting in:
 - a. disturbance to wildlife within the commercial tree farm;
 - b. decreased real estate values;
 - c. diminished property tax revenues;
 - d. deterred tourism activity;
 - e. damage to the local economy.

*Terrestrial Plants and Animals 3.6
Land and Shoreline Use 3.7
Noise and Vibration 3.9
Local and Regional Economics 3.14*

- C7. Central Conveyor could create a visual blight for Jefferson and Kitsap County residents and visitors, resulting in:
 - a. decreased real estate values;
 - b. diminished property tax revenues;
 - c. deterred tourism activity;
 - d. damaged local economy.

*Land and Shoreline Use 3.7
Light, Glare and Aesthetics 3.8
Local and Regional Economics 3.14*

- C8. Central Conveyor structure, new forestry service road, and cleared corridor could be inconsistent with local plans and policies, resulting in a reduced ability of Jefferson County to meet long-term planning goals and objectives identified in the Comprehensive Plan, as prepared under the Growth Management Act.

Land and Shoreline Use 3.7

- C9. Central Conveyor structure, new forestry service road, and cleared corridor could be incompatible with existing on-site and/or adjacent land uses, resulting in:
 - a. lost pristine nature of Hood Canal character;
 - b. reduced local use for hunting, fishing, mountain biking or other recreational activities;
 - c. deterred tourism;
 - d. damaged local economy;

- e. decreased real estate values;
- f. diminished property tax revenues.

Land and Shoreline Use 3.7
Local and Regional Economics 3.14

- C10. Operation of the Central Conveyor could consume excessive amounts energy and fuels, resulting in:
- a. increased local and regional energy demand;
 - b. increased prices for electricity and/or fuel;
 - c. increased emissions from burning fossil fuels.

Energy and Natural Resources 3.13

- C11. Central Conveyor structure, new forestry service road, and cleared corridor could deter tourism and decrease real estate values, resulting in:
- a. lost revenues for local businesses and entrepreneurs;
 - b. diminished property tax revenues;
 - c. damaged local economy.

Local and Regional Economics 3.14

- C12. The Central Conveyor, abandoned forestry road, or new forestry road could destabilize slopes or otherwise create excessive erosion, resulting in:
- a. lost soils;
 - b. silted streams and wetlands;
 - c. lost wildlife habitat.

Earth 3.2
Water 3.3
Terrestrial Plants and Animals 3.6

- C13. Stabilization of the bluff and slopes above the beach could alter sediment contributions from “feeder bluffs,” resulting in:
- a. reduced sandy substrates;
 - b. lost of eelgrass and other near-shore habitats;
 - c. damage to residential and recreational properties.

Earth 3.2
Marine Physical Environment 3.4
Marine Plants and Animals 3.5
Local and Regional Economics 3.14

1 4.2.4

Pier. The pier would be located approximately five miles south of the Hood Canal Bridge, 1.25 miles southwest of South Point, and one mile northeast of Thorndyke Bay. The pier would support the Central Conveyor and be largely comprised of open steel girders. The pier would extend 990 feet from the Ordinary High Water mark with widths of 13-18 feet and a maximum elevation of 91 feet at the load-out structure.



As shown in this block illustration, the conveyor is supported by the pier load-out facility. The 14.7-acre shoreline property is zoned rural residential.

For pier details, see page 77 under Proposed Action.

- P1. Construction and operation of the Central Conveyor and Pier structure on the shoreline bluff could destabilize slopes, resulting in:
 - a. increased likelihood of landslides;
 - b. accelerated rate of beach erosion;
 - c. marred landscape;
 - d. buried wetlands and near-shore habitat.

*Earth 3.2
Water 3.3
Marine Physical Environment 3.4
Marine Plants and Animals 3.5
Terrestrial Plants and Animals 3.6*

- P2. Paved parking area for worker vehicles off Thorndyke Road could create uncontrolled storm water runoff, resulting in:
 - a. sediments and silts entering surface waters;
 - b. increased peak flows eroding landscapes and scouring existing surface water beds and banks;
 - c. unstable slopes.

*Earth 3.2
Water 3.3
Marine Plants and Animals 3.5*

- P3. Vehicles in paved parking area could spill/leak pollutants onto the ground, resulting in:
- a. polluted surface waters;
 - b. polluted groundwater.

*Water 3.3
Marine Plants and Animals 3.5*

- P4. Noise, vibration, light, glare, dust and physical disturbances from construction of the pier could destroy habitats and local populations of fish and wildlife, including the marbled murrelet and bald eagle, resulting in:
- a. depleted food supplies that sustain forage fish and salmon habitats;
 - b. loss of or reductions in local populations of fish and wildlife.

*Marine Plants and Animals 3.5
Noise and Vibration 3.9*

- P5. Construction noise, vibration and heavy equipment, including cranes and pile drivers, could exceed regulated noise levels, resulting in:
- a. decreased real estate values;
 - b. diminished property tax revenues;
 - c. deterred tourism activity;
 - d. damage to the local economy.

*Noise and Vibration 3.9
Local and Regional Economics 3.14*

- P6. Pier structure could inhibit recovery from construction damage and cause long-term destruction of habitats, resulting in:
- a. depleted food supplies that sustain forage fish and salmon habitats;
 - b. loss of/or reductions in local populations of shellfish, fish and wildlife;
 - c. lost opportunity for residents, tourists, commercial harvesters and tribal members who rely on shellfish and salmon for their recreation, subsistence and/or livelihood.

*Marine Physical Environment 3.4
Marine Plants and Animals 3.5
Land and Shoreline Use 3.7
Historic and Cultural Preservation 3.12*

- P7. Pier structure could create barriers that would disrupt the natural littoral drift of beach sand, resulting in:
- a. diminished volumes of sand and gravel on nearby beaches;
 - b. reduced recreational, commercial and tribal shellfish beds;
 - c. reduced productivity of disturbed near-shore habitats at and near the site;

- d. depleted food supplies in near-shore habitats and eelgrass beds that sustain forage fish and salmon habitats;
- e. loss of or reductions in local populations of shellfish, fish and wildlife;
- f. killing off of established biological shoreline communities.

Marine Physical Environment 3.4
Marine Plants and Animals 3.5
Land and Shoreline Use 3.7
Historic and Cultural Preservation 3.12

- P8. Building a pier on Hood Canal could increase pollution in the waterway and accelerate existing eutrophication (low oxygen) problems, resulting in:
- a. increased frequency and intensity of fish, shellfish and other marine organisms dying off;
 - b. the Hood Canal turning into a “dead sea.”

Water 3.3
Marine Plants and Animals 3.5

- P9. Construction traffic for the pier could cause dangerous delays and conditions on Thorndyke Road, resulting in:
- a. disruption of normal traffic patterns;
 - b. potential hazardous conditions, injuries and deaths;
 - c. interference with emergency vehicles.

Ground Transportation and Safety 3.11

- P10. Shading from the pier structure could eliminate or reduce eelgrass beds and deplete near-shore food supplies, resulting in:
- a. loss of productive and rare seashore habitats;
 - b. loss of *zostera marina* (native) and *zostera japonica* (non-native) eelgrass beds;
 - c. taking of threatened salmon species and other sensitive fish species, including herring, lance and forage fish.

Marine Plants and Animals 3.5

- P11. Employees entering/leaving the parking area off Thorndyke Road could cause dangerous new traffic patterns, resulting in:
- a. potential hazardous conditions, injuries and deaths;
 - b. interference with emergency vehicles.

Ground Transportation and Safety 3.11

- P12. Pier structure, lights and glare could destroy views from sensitive viewpoints, including parks, designated recreation areas, areas with concentrated residences or vacation homes, scenic lookouts and scenic highways, resulting in:
- a. decreased real estate values;
 - b. diminished property tax revenues;

- c. deterred tourism activity;
- d. damage to the local economy.

Land and Shoreline Use 3.7
Light, Glare and Aesthetics 3.8
Local and Regional Economics 3.14

- P13. Building the pier on Hood Canal could set a precedent for future shoreline developments along Hood Canal, resulting in:
- a. increased industrial development and activity on Hood Canal;
 - b. lost pristine nature of Hood Canal character;
 - c. increased pollution to Hood Canal;
 - d. increased frequency and intensity of fish, shellfish and other marine organisms dying off;
 - e. increasing the “dead zone” of Hood Canal.

Water 3.3
Marine Physical Environment 3.4
Marine Plants and Animals 3.5
Land and Shoreline Use 3.7
Light, Glare, and Aesthetics 3.8
Historic and Cultural Preservation 3.12
Local and Regional Economics 3.14

- P14. Building a pier on Hood Canal could interfere with operations, activities and marine exercises of Kitsap Naval Base-Bangor, resulting in:
- a. reduced effectiveness of Homeland Security measures;
 - b. increased threats to national security.

Marine Transportation and Safety 3.10

- P15. Pier could create an attractive nuisance, resulting in hazards where people may be injured or killed.

Land and Shoreline Use 3.7

- P16. Pier could create a navigational hazard, resulting in:
- a. increased risk of marine accidents and spill/leak of pollutants and debris into waters;
 - b. increased risk of injury, loss of life, cargo or vessels;
 - c. collisions with Naval vessels;
 - d. interrupted Naval training, exercises and operations;
 - e. increased threats to national security.

Water 3.3
Marine Transportation and Safety 3.10

- P17. Structure and lighting of pier could increase/decrease the presence of marine predators, resulting in:
- a. increased vulnerability of juvenile salmon;
 - b. decreased survival rates of juvenile salmon (including the Endangered Species Act-listed summer chum salmon);

- c. degraded marine habitats.

*Marine Plants and Animals 3.5
Light, Glare and Aesthetics 3.8*

- P18. Pier structure could interfere with juvenile salmon rearing habitat and outbound migration, resulting in:
- a. increased vulnerability of juvenile salmon;
 - b. decreased survival rates of juvenile salmon (including the ESA-listed summer chum salmon);
 - c. degraded marine habitats.

Marine Plants and Animals 3.5

- P19. Pier could adversely affect Thorndyke Bay, including fish and wildlife, resulting in:
- a. destruction of an estuarine system within Hood Canal;
 - b. loss of juvenile rearing habitat for a wide range of species, including salmon;
 - c. impacts on Priority Habitats and Species.

*Marine Physical Environment 3.4
Marine Plants and Animals 3.5*

- P20. Pier location, length and height could be inconsistent with local plans and policies, resulting in reduced ability of Jefferson County to meet long-term planning goals and objectives identified in the Comprehensive Plan, as prepared under the Growth Management Act.

Land and Shoreline Use 3.7

- P21. Pier location, length and height could be incompatible with existing land, shoreline, and water uses, resulting in:
- a. lost pristine nature of Hood Canal character;
 - b. reduced use of beach;
 - c. decreased real estate values;
 - d. diminished property tax revenues;
 - e. deterred tourism activity;
 - f. damage to the local economy.

*Land and Shoreline Use 3.7
Local and Regional Economics 3.14*

- P22. Pier conveyor, lighting and loading operations could consume excessive amounts energy and fuels, resulting in:
- a. increased local and regional energy demand;
 - b. increased prices for electricity and/or fuel;
 - c. increased emissions from burning fossil fuels.

Energy and Natural Resources 3.13

- P23. Pier structure and operations could deter tourism and decrease real estate values, resulting in:
- a. lost revenues for local businesses and entrepreneurs;
 - b. diminished property tax revenues;
 - c. damaged local economy.

Local and Regional Economics 3.14

- P24. Extreme winds that occur in Hood Canal during winter storms could damage or destroy the pier, resulting in:
- a. water pollution and sedimentation;
 - b. altered sediment transport;
 - c.. altered physical conditions;
 - d. lost eelgrass and other nearshore habitats;
 - e. a visual blight;
 - f. decreased tourism and real estate values.

Earth 3.2

Water 3.3

Marine Physical Environment 3.4

Marine Plants and Animals 3.5

Land and Shoreline Use 3.7

Light, Glare and Aesthetics 3.8

Marine Transportation and Safety 3.10

Local and Regional Economics 3.14

1 4.2.5

Marine Transportation. Barges would transport sand and gravel up to 24 hours a day, seven days a week and 300 days a year, excluding 65 days



annually for holidays, tribal fishing, inclement weather and periods of non-use. As required by contract, all barges would go under the eastern span of the Hood Canal Bridge. Ships would require bridge openings and make a maximum of six roundtrips a month during off-peak hours. Tugboats would assist operations at the pier and during bridge transit. (See page 87 in Chapter Two under Proposed Action.)

A typical-sized barge with a 5,000 to 7,000 dwt capacity navigates the Hood Canal Bridge's eastern span during a demonstration by Fred Hill Materials on Oct. 30, 2003.

- MT1. Exhaust from tugboats and ships and fugitive dust from loading and transporting sand and gravel could pollute the air, resulting in:
- a. hazardous air quality conditions for neighboring residences and properties;
 - b. increased haze and decreased visibility.

Air 3.1
Land and Shoreline Use 3.7
Light, Glare and Aesthetics 3.8
Local and Regional Economics 3.14

- MT2. Prop wash from tugboat and ship propellers could erode the beach, resulting in:
- a. damaged near-shore marine habitats from scouring effects;
 - b. inhibited fish migratory habits;
 - c. depleted food supplies that sustain forage fish and salmon habitats;
 - d. loss of or reductions in local populations of shellfish, fish and wildlife;
 - e. lost opportunity for tribal fishing and shellfish harvest.

Marine Physical Environment 3.4
Marine Plants and Animals 3.5
Historic and Cultural Preservation 3.12

- MT3. Marine operations could spill/leak sand, gravel, dust, pollutants and/or debris into the waters, tidelands, estuaries and near-shore habitats of Hood Canal, resulting in:
- a. poisoned plants;
 - b. poisoned wildlife, fish and aquatic habitats;
 - c. depleted food supplies that sustain forage fish and salmon habitats;
 - d. reduced local populations of fish, shellfish and other aquatic organisms;
 - e. lost opportunity for residents, tourists, tribal members and commercial harvesters who rely on shellfish and salmon for their recreation, subsistence or livelihood;
 - f. buried marine habitats and organisms;
 - g. turbidity and associated environmental damage;
 - h. irreparable damage to Thorndyke Bay estuary located one mile southwest of the proposed pier site;
 - i. irreparable damage to the overall health of Hood Canal.

Water 3.3
Marine Plants and Animals 3.5

- MT4. Ballast water and external vessel sources from barges and ships could introduce non-native invasive species to the Hood Canal, resulting in:

- a. displacement of native species;
- b. depleted food supplies in near-shore habitats and eelgrass beds that sustain forage fish and salmon habitats;
- c. reduced local populations of fish, shellfish and other aquatic organisms;
- d. destroyed near-shore habitats and fish species;
- e. irreparable damage to the health of Hood Canal;
- f. lost tribal resources and infringement on treaty rights.

Marine Plants and Animals 3.5
Historic and Cultural Preservation 3.12

- MT5. Lighting from barge, tug and ship traffic and loading operations could produce glare, resulting in:
- a. decreased real estate values;
 - b. diminished property tax revenues;
 - c. deterred tourism activity;
 - d. damage to the local economy;
 - e. reduced or altered habitat conditions;
 - f. increased potential of predation on juvenile salmon.

Marine Plants and Animals 3.5
Land and Shoreline Use 3.7
Light, Glare and Aesthetics 3.8
Local and Regional Economics 3.14

- MT6. Noise, vibration, light, glare and other disturbances from barge and ship loading and traffic could displace resident fish and migratory juvenile salmon, resulting in:
- a. reduced habitat availability;
 - b. increased predation;
 - c. lower survival rates.

Marine Plants and Animals 3.5

- MT7. Tugboats, barges and ships could block, deflect or otherwise alter wave patterns at the proposed project site, resulting in:
- a. disruption of important sediment movements (littoral drift);
 - b. changed physical properties of the beach.

Marine Physical Environment 3.4
Marine Plants and Animals 3.5

- MT8. Wakes from tug and ship traffic could erode beaches and destroy shoreline properties, resulting in:
- a. sediment loss of beaches;
 - b. reduced habitat values for fish and other marine organisms;
 - c. lost use and enjoyment of shoreline properties;
 - d. decreased real estate values;
 - e. diminished property tax revenues.

Marine Physical Environment 3.4
Marine Plants and Animals 3.5

*Land and Shoreline Use 3.7
Local and Regional Economics 3.14*

- MT9. Noise from tugboats, barges, ships and marine operations could exceed existing noise regulations, resulting in:
- a. violation of Jefferson County UDC;
 - b. conflicts with existing land uses;
 - c. decreased real estate values;
 - d. diminished property tax revenues;
 - e. deterred tourism activity;
 - f. damage to the local economy.

*Land and Shoreline Use 3.7
Noise and Vibration 3.9
Local and Regional Economics 3.14*

- MT10. Barging and shipping sand and gravel could lead to a major Hood Canal Bridge accident (allision), resulting in:
- a. leak of pollutants and debris into waters and/or a major oil spill;
 - b. property damage, injury and/or loss of life to vehicle occupants and mariners;
 - c. severed transportation link connecting Olympic and Kitsap Peninsula communities;
 - d. loss of emergency and health care services;
 - e. decreased real estate values;
 - f. diminished property tax revenues;
 - g. deterred tourism activity;
 - h. damage to the local economy.

*Marine Transportation and Safety 3.10
Ground Transportation and Safety 3.11
Local and Regional Economics 3.14*

- MT11. Increased bridge openings as a result of barging and/or shipping operations could cause significant traffic delays, resulting in:
- a. increased potential for hazardous road conditions, vehicular damage, injury and/or loss of life;
 - b. extended driving time for people commuting between Kitsap County and the Olympic Peninsula;
 - c. reduced access for emergency health and safety transportation;
 - d. decreased real estate values;
 - e. diminished property tax revenues;
 - f. deterred tourism activity;
 - g. damage to the local economy.

*Marine Transportation and Safety 3.10
Ground Transportation and Safety 3.11
Local and Regional Economics 3.14*

MT12. Tugs, barges and ships from FHM marine operations could collide with recreational, commercial and tribal fishing vessels, resulting in:

- a. property damage, injury and/or loss of life;
- b. leaking of pollutants and debris into waters and/or a major oil spill;
- c. depleted food supplies in near-shore habitats and eelgrass beds that sustain forage fish and salmon habitats;
- d. direct mortality of marine birds, mammals, fish, shellfish and other aquatic organisms;
- e. destroyed near-shore habitats, fish species and catastrophic damage to the health of Hood Canal;
- f. lost opportunity for residents, tourists, tribal members and commercial harvesters who rely on shellfish and salmon for their recreation, subsistence or livelihood;
- g. lost tribal resources and infringement on treaty rights.

Water 3.3

Marine Plants and Animals 3.5

Land and Shoreline Use 3.7

Marine Transportation and Safety 3.10

Historic and Cultural Preservation 3.12

Local and Regional Economics 3.14

MT13. FHM marine operations could collide or otherwise interfere with Kitsap Naval Base-Bangor vessels, operations and exercises, resulting in:

- a. Naval property damage, injury and/or loss of life;
- b. spilling/leaking of pollutants and/or debris into waters or a major oil spill;
- c. depleted food supplies in near-shore habitats and eelgrass beds that sustain forage fish and salmon habitats;
- d. direct mortality of marine birds, mammals, fish, shellfish and other aquatic organisms;
- e. destroyed near-shore habitats, fish species and catastrophic damage to the health of Hood Canal;
- f. interrupted Naval training, exercises and operations;
- g. reduced effectiveness of Homeland Security measures;
- h. increased threats to national security.

Water 3.3

Marine Plants and Animals 3.5

Land and Shoreline Use 3.7

Marine Transportation and Safety 3.10

Local and Regional Economics 3.14

MT14. Barge, tugboat, ship traffic and pier operations could interfere with recreational, commercial and tribal net and shell fisheries on Hood Canal, resulting in:

- a. a loss of tribal treaty-protected fishing and shellfish-gathering locations;

- b. lost opportunity for residents, tourists, tribal members and commercial harvesters who rely on shellfish and salmon for their recreation, subsistence or livelihood.

Land and Shoreline Use 3.7
Marine Transportation and Safety 3.10
Historic and Cultural Preservation 3.12
Local and Regional Economics 3.14

- MT15. Marine operations could fail to generate local retail sales and/or family-wage jobs, resulting in:
- a. lack of new tax revenues to support Jefferson County parks, sheriff and other county services;
 - b. lack of new job creation and stimulation to local economy;
 - c. added burden on local government without offsetting additional revenues.

Local and Regional Economics 3.14

- MT16. Market conditions could fail to support marine delivery, resulting in:
- a. an abandoned pier structure;
 - b. nuisance to nearby neighbors and Kitsap shoreline residents;
 - c. decreased real estate values;
 - d. diminished property tax revenues;
 - e. deterred tourism activity;
 - f. damage to the local economy.

Local and Regional Economics 3.14

- MT17. Tugboats, barges and ships could create additional shade in the near-shore environment, resulting in:
- a. diminished eelgrass cover and productivity;
 - b. lost habitat values, including spawning and rearing habitat.

Marine Plants and Animals 3.5

- MT18. Increased tugboat, barge and ship traffic could adversely affect Thorndyke Bay, resulting in:
- a. destruction of an estuarine system within Hood Canal;
 - b. loss of juvenile rearing habitat for a wide range of species, including salmon;
 - c. impacts on priority habitats and species.

Marine Physical Environment 3.4
Marine Plants and Animals 3.5

- MT19. Increased tugboat, barge and ship traffic could be inconsistent with local plans and policies, resulting in reduced ability of Jefferson County to meet long-term planning goals and objectives identified

in the Comprehensive Plan, as prepared under the Growth Management Act.

Land and Shoreline Use 3.7

- MT20. Increased tugboat, barge and ship traffic could be incompatible with existing land, shoreline, and water uses, resulting in:
- a. lost pristine nature of Hood Canal character;
 - b. reduced opportunities for fishing, boating, and other marine-oriented recreation;
 - c. reduced use of beach;
 - d. decreased real estate values;
 - e. diminished property tax revenues;
 - f. deterred tourism activity;
 - g. damage to the local economy.

Land and Shoreline Use 3.7

Local and Regional Economics 3.14

- MT21. Increased tugboat, barge and ship traffic (including loading at the pier) could alter views, resulting in reduced property values and property tax revenues.

Land and Shoreline Use 3.7

Light, Glare and Aesthetics 3.8

Local and Regional Economics 3.14

- MT22. Barging and shipping of sand and gravel could interfere with existing vessel traffic in the Puget Sound shipping lanes, resulting in:
- a. a major accident between large vessels;
 - b. spilling/leaking of pollutants and/or debris into waters or a major oil spill;
 - c. catastrophic loss of plants and animals of Puget Sound.

Water 3.3

Marine Plants and Animals 3.5

Marine Transportation and Safety 3.10

- MT23. Barging and shipping of sand and gravel could consume excessive amounts energy and fuels, resulting in:
- a. increased local and regional energy demand;
 - b. increased prices for electricity and/or fuel;
 - c. increased emissions from burning fossil fuels.

Energy and Natural Resources 3.13

- MT24. Barging and shipping of sand and gravel could deter tourism and decrease real estate values, resulting in:
- a. lost revenues for local businesses and entrepreneurs;
 - b. diminished property tax revenues;
 - c. damaged local economy.

Local and Regional Economics 3.14

1 4.3 **UNCERTAINTIES**

As do all resource-based operations, market uncertainties relate to supply and demand of materials and product sales, all of which impact mining extraction rates and precise number of barges and ships calling at the pier. The EIS will evaluate the impacts of the “upper end” estimates of operational aspects of the applicant’s proposal as projected into the foreseeable future (20 to 40 years).

Table 1-1: Most issues and concerns involve interrelated effects across different elements of the environment that should be considered in an EIS. Both SEPA and NEPA require that an EIS be prepared using a systematic, interdisciplinary approach to evaluate impacts and to support better decisions.

Cross-Reference Guide Issues/Concerns and Elements of the Environment Central Conveyor and Pier Jefferson County, Washington																
PROPOSED ELEMENTS OF THE ENVIRONMENT		3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12	3.13	3.14	
PRELIMINARY ISSUES AND CONCERNS TO BE ADDRESSED		Air	Earth	Water	Marine Physical Environment	Marine Plants and Animals	Terrestrial Plants, Animals	Land and Shoreline Use	Light, Glare and Aesthetics	Noise and Vibration	Marine Transportation and Safety	Ground Transportation and Safety	Historic and Cultural	Energy and Natural Resources	Local and Regional Economics	
INCREASED MINING																
M1	Would increased mining activities produce excessive fugitive dust or exhaust emissions?	■						●	●							●
M2	Would increased mining activities produce excessive noise, vibration, light and glare?						●	●	■	■						●
M3	Would required increased mining reclamation efforts fail?		●	●			■	●						●		●
M4	Would exposed or compacted soils or altered topography and drainage patterns create uncontrolled stormwater run-off?		●	■			●									
M5	Would increased water required for dust control resulting from increased mining threaten adjacent wells?	●		■												●
M6	Would increased extraction equipment spill/leak pollutants (fuel, oil, or other toxic fluids) onto the ground of the commercial tree farm?			■			●									

Table 1-1 (continued)
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Cross-Reference Guide
Issues/Concerns and Elements of the Environment

Central Conveyor and Pier
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PROPOSED ELEMENTS OF THE ENVIRONMENT	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12	3.13	3.14
	Air	Earth	Water	Marine Physical Environment	Marine Plants and Animals	Terrestrial Plants, Animals	Land and Shoreline Use	Light, Glare and Aesthetics	Noise and Vibration	Marine Transportation and Safety	Ground Transportation and Safety	Historic and Cultural	Energy and Natural Resources	Local and Regional Economics
PRELIMINARY ISSUES AND CONCERNS TO BE ADDRESSED														
M7 Would altered aquifer recharge regimes dip below seasonal water tables or puncture an aquifer?			■			●								
M8 Would altered habitats and changed wildlife movements block travel corridors within the commercial tree farm?						■								
M9 Would altered wildlife habitats reduce functional values of surface waters?			●			■								
M10 Would noise and activity from increased mining disturb wildlife?						■			●					
M11 Would increased mining be consistent with local plans and policies?							■							
M12 Would increased mining be incompatible with existing on-site and/or adjacent land uses?							■							●
M13 Would increased mining create a fire hazard within the commercial tree farm?						■							●	
M14 Would increased mining near ephemeral creeks and streams destroy nearby fish habitats?						■								
M15 Would increased mining extraction disturb archaeological and/or cultural resources and properties?												■		
M16 Would extraction rates subject to market conditions exceed projected acreage?													■	●

Table 1-1 (continued)
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Cross-Reference Guide
Issues/Concerns and Elements of the Environment

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	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12	3.13	3.14
PROPOSED ELEMENTS OF THE ENVIRONMENT	Air	Earth	Water	Marine Physical Environment	Marine Plants and Animals	Terrestrial Plants, Animals	Land and Shoreline Use	Light, Glare and Aesthetics	Noise and Vibration	Marine Transportation and Safety	Ground Transportation and Safety	Historic and Cultural	Energy and Natural Resources	Local and Regional Economics
PRELIMINARY ISSUES AND CONCERNS TO BE ADDRESSED														
M17 Would increased mining deter tourism and decrease real estate values?		■												■
M18 Would increased mining destabilize slopes or otherwise create excessive erosion?		■	●		●			●						
M19 Would increased mining alter aquifer recharge and in-stream flow of creeks?			■		●	●								
OPERATIONS HUB														
H1 Would increased processing and handling create excessive fugitive dust or exhaust emissions?	■													●
H2 Would groundwater withdrawals for increased processing reduce available water levels in local aquifers?			■											●
H3 Would increased impervious surface at Shine Hub create uncontrolled stormwater run-off?			■											
H4 Would increased processing spill/leak pollutants (fuel, oil, or other toxic fluids) onto the ground of the commercial tree farm?			■		●									
H5 Would noise and vibration from increased processing equipment and related operations exceed regulated noise levels?					●									●

Table 1-1 (continued)
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	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12	3.13	3.14
PROPOSED ELEMENTS OF THE ENVIRONMENT	Air	Earth	Water	Marine Physical Environment	Marine Plants and Animals	Terrestrial Plants, Animals	Land and Shoreline Use	Light, Glare and Aesthetics	Noise and Vibration	Marine Transportation and Safety	Ground Transportation and Safety	Historic and Cultural	Energy and Natural Resources	Local and Regional Economics
PRELIMINARY ISSUES AND CONCERNS TO BE ADDRESSED														
H6 Would reconfigured Shine Operations Hub destroy views from sensitive viewpoints?							●	■						●
H7 Would increased processing at the Shine Operations Hub be consistent with local plans and policies?							■							
H8 Would increased processing at the Operations Hub be incompatible with existing on-site and/or adjacent land uses?							■							●
H9 Would increased activity at the reconfigured Operations Hub consume excessive amounts of energy and fuels?													■	
H10 Would increased activity at the reconfigured Operations Hub deter tourism and decrease real estate values?														■
H11 Would reconfigured operations hub increase traffic on SR 104?											■			●
CENTRAL CONVEYOR														
C1 Would transporting sand and gravel along the conveyor generate fugitive dust?	■						●	●						●

Table 1-1 (continued)
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		Cross-Reference Guide													
		Issues/Concerns and Elements of the Environment					Central Conveyor and Pier Jefferson County, Washington								
PROPOSED ELEMENTS OF THE ENVIRONMENT		3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12	3.13	3.14
		Air	Earth	Water	Marine Physical Environment	Marine Plants and Animals	Terrestrial Plants, Animals	Land and Shoreline Use	Light, Glare and Aesthetics	Noise and Vibration	Marine Transportation and Safety	Ground Transportation and Safety	Historic and Cultural	Energy and Natural Resources	Local and Regional Economics
PRELIMINARY ISSUES AND CONCERNS TO BE ADDRESSED															
C2	Would realignment/creation of existing forestry service road and creation of a new forestry service road create uncontrolled storm water runoff?			■			●								
C3	Would sand and gravel transported on the Central Conveyor spill?			■			●								
C4	Would the Central Conveyor spill/leak pollutants onto the ground of the commercial tree farm?			■			●								
C5	Would the Central Conveyor block wildlife travel corridors within the commercial tree farm?						■								
C6	Would the Central Conveyor produce excessive noise and vibration?						●	●		■					●
C7	Would Central Conveyor create a visual blight for Jefferson and Kitsap County residents and visitors?							●	■						●
C8	Would the Central Conveyor be inconsistent with local plans and policies?							■							
C9	Would the Central Conveyor be incompatible with existing on-site and/or adjacent land uses?							■							●
C10	Would the Central Conveyor consume excessive amounts of energy and fuels?													■	

■ direct impact ● indirect impact or otherwise interrelated

Table 1-1 (continued)
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PROPOSED ELEMENTS OF THE ENVIRONMENT	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12	3.13	3.14
	Air	Earth	Water	Marine Physical Environment	Marine Plants and Animals	Terrestrial Plants, Animals	Land and Shoreline Use	Light, Glare and Aesthetics	Noise and Vibration	Maine Transportation and Safety	Ground Transportation and Safety	Historic and Cultural	Energy and Natural Resources	Local and Regional Economics
PRELIMINARY ISSUES AND CONCERNS TO BE ADDRESSED														
C11 Would the Central Conveyor structure, new forestry service road, and cleared corridor deter tourism and decrease real estate values?														■
C12 Would the Central Conveyor, abandoned forestry road, or new forestry road destabilize slopes or otherwise create excessive erosion?		■	●			●								
C13 Would stabilization of the bluff and slopes above the beach alter sediment contributions from "feeder bluffs"?		●		■	●									●
PIER														
P1 Would construction and operation of Central Conveyor and Pier structure on the shoreline bluff destabilize slopes?		■	●	●	●	●								
P2 Would the paved parking area for workers' vehicles at the Pier could create uncontrolled storm water runoff?		●	■		●									
P3 Would vehicles in the employee parking area spill/leak pollutants onto the ground?			■		●									

■ direct impact ● indirect impact or otherwise interrelated

Table 1-1 (continued)
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		Cross-Reference Guide							Central Conveyor and Pier Jefferson County, Washington						
		Issues/Concerns and Elements of the Environment													
PROPOSED ELEMENTS OF THE ENVIRONMENT		3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12	3.13	3.14
		Air	Earth	Water	Marine Physical Environment	Marine Plants and Animals	Terrestrial Plants, Animals	Land and Shoreline Use	Light, Glare and Aesthetics	Noise and Vibration	Marine Transportation and Safety	Ground Transportation and Safety	Historic and Cultural	Energy and Natural Resources	Local and Regional Economics
PRELIMINARY ISSUES AND CONCERNS TO BE ADDRESSED															
P4	Would noise, dust, vibration, lighting and physical disturbances from construction of the Pier destroy habitats and local populations of fish and wildlife?				■	■				●					
P5	Would construction or operation of the Pier produce excessive noise on adjacent properties?									■					●
P6	Would Pier structure inhibit recovery from construction damage and cause long-term destruction of habitats?				■	●		●					●		
P7	Would Pier structure create barriers that would disrupt the natural littoral drift of beach sand?				■	●		●					●		
P8	Would building a Pier within Hood Canal increase pollution in the waterway and accelerate existing hypoxia (low oxygen) problems?					●									
P9	Would construction traffic for the Pier cause dangerous delays and conditions on Thorndyke Road?											■			
P10	Would shading from the Pier construction or structure eliminate or substantially reduce eelgrass beds and deplete near-shore food supplies?					■									

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PROPOSED ELEMENTS OF THE ENVIRONMENT		3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12	3.13	3.14
		Air	Earth	Water	Marine Physical Environment	Marine Plants and Animals	Terrestrial Plants, Animals	Land and Shoreline Use	Light, Glare and Aesthetics	Noise and Vibration	Marine Transportation and Safety	Ground Transportation and Safety	Historic and Cultural	Energy and Natural Resources	Local and Regional Economics
PRELIMINARY ISSUES AND CONCERNS TO BE ADDRESSED															
P11	Would employees entering/leaving the parking area off Thorndyke Road cause dangerous new traffic patterns?											■			
P12	Would Pier structure, lights and glare destroy views from sensitive viewpoints?							●	■						●
P13	Would building the Pier on Hood Canal set a precedent for future shoreline developments along Hood Canal?			●	●	●		■	●				●		●
P14	Would building a Pier on Hood Canal interfere with operations, activities and marine exercises of Kitsap Naval Base-Bangor?														
P15	Would building a Pier create an attractive nuisance?							■							
P16	Would the Pier create a navigational hazard?			●											
P17	Would structure and lighting of Pier increase/decrease the presence of marine predators?					■			●						
P18	Would Pier structure interfere with juvenile salmon rearing habitat and outbound migration?					■									
P19	Would the Pier adversely affect Thorndyke Bay?				●	■									
P20	Would the Pier location, length and height be inconsistent with local plans and policies?							■							

■ direct impact ● indirect impact or otherwise interrelated

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PROPOSED ELEMENTS OF THE ENVIRONMENT	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12	3.13	3.14
	Air	Earth	Water	Marine Physical Environment	Marine Plants and Animals	Terrestrial Plants, Animals	Land and Shoreline Use	Light, Glare and Aesthetics	Noise and Vibration	Marine Transportation and Safety	Ground Transportation and Safety	Historic and Cultural	Energy and Natural Resources	Local and Regional Economics
PRELIMINARY ISSUES AND CONCERNS TO BE ADDRESSED														
P 21 Would the Pier location, length and height be incompatible with existing land, shoreline and water uses?							■							●
P 22 Would the Pier consume excessive amounts of energy and fuels?													■	
P 23 Would the Pier structure and operations deter tourism and decrease real estate values?														■
P 24 Would extreme winds that occur in Hood Canal during winter storms damage or destroy the Pier?		●	●	■	●		●	●		●				●

MARINE TRANSPORTATION

MT1 Would exhaust from tugboats and ships and fugitive dust from loading and transporting sand and gravel pollute the air?	■						●	●						●
MT2 Would prop wash from tugboat and ship propellers erode the beach?				■	●							●		
MT3 Would marine operations spill/leak pollutants and debris into the waters tidelands and near-shore habitats of Hood Canal?			■		●									
MT4 Would ballast water and external vessel sources from barges and ships introduce non-native invasive species to the Hood Canal?					■									●

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Issues/Concerns and Elements of the Environment

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	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12	3.13	3.14
	Air	Earth	Water	Marine Physical Environment	Marine Plants and Animals	Terrestrial Plants, Animals	Land and Shoreline Use	Light, Glare and Aesthetics	Noise and Vibration	Marine Transportation and Safety	Ground Transportation and Safety	Historic and Cultural	Energy and Natural Resources	Local and Regional Economics
PROPOSED ELEMENTS OF THE ENVIRONMENT														
PRELIMINARY ISSUES AND CONCERNS TO BE ADDRESSED														
MT5 Would lighting from barge, tug and ship traffic and loading operations produce glare?					●		●	■						●
MT6 Would disturbances from barge and ship loading and traffic displace priority species, including migratory juvenile salmon?					■									
MT7 Would tugboats, barges and ships block, deflect, or otherwise alter the wave energy regime at the project site?				■	●									
MT8 Would wakes from tug and ship traffic generate erode beaches and destroy shoreline properties?				■	●		●							●
MT9 Would noise from tugboats, barges and ships exceed existing noise regulations or otherwise create disturbances?							●		■					●
MT10 Would barging and shipping sand and gravel lead to a major Hood Canal Bridge accident (allision)?										●	■			●
MT11 Would increased bridge openings as a result of barging and/or shipping operations cause significant traffic delays?										●	■			●

Table 1-1 (continued)
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Central Conveyor and Pier
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Cross-Reference Guide		Issues/Concerns and Elements of the Environment														
PROPOSED ELEMENTS OF THE ENVIRONMENT		3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12	3.13	3.14	
		Air	Earth	Water	Marine Physical Environment	Marine Plants and Animals	Terrestrial Plants, Animals	Land and Shoreline Use	Light Glare and Aesthetics	Noise and Vibration	Marine Transportation and Safety	Ground Transportation and Safety	Historic and Cultural	Energy and Natural Resources	Local and Regional Economics	
PRELIMINARY ISSUES AND CONCERNS TO BE ADDRESSED																
MT12	Would tugs, barges and ships from FHM marine operations collide with recreational, commercial, and tribal fishing vessels?		●	●		●		●			■		●		●	
MT13	Would FHM marine operations interfere with Kitsap Naval Base-Bangor operations and exercises?			●		●		●			■				●	
MT14	Would Barge, tugboat, ship traffic, and Pier operations interfere with recreational, commercial, and Tribal net and shell fisheries on Hood Canal?							●			■		●		●	
MT15	Would marine operations fail to generate local retail sales?														■	
MT16	Would market conditions fail to support marine delivery?														■	
MT17	Would tugboats, barges and ships create additional shade that could reduce eelgrass?										■					
MT18	Would marine transportation adversely affect the nearby Thorndyke Creek Estuary and Bay?				●						■					
MT19	Would marine transportation be inconsistent with local plans and policies?															
MT20	Would barging and ship operations be incompatible with existing on-site and/or adjacent land uses?							■								●

■ direct impact

● indirect impact or otherwise interrelated

Table 1-1 (continued)
December 2006

Cross-Reference Guide
Issues/Concerns and Elements of the Environment

		3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12	3.13	3.14	
PROPOSED ELEMENTS OF THE ENVIRONMENT		Air	Earth	Water	Marine Physical Environment	Marine Plants and Animals	Terrestrial Plants, Animals	Land and Shoreline Use	Light, Glare and Aesthetics	Noise and Vibration	Marine Transportation and Safety	Ground Transportation and Safety	Historic and Cultural	Energy and Natural Resources	Local and Regional Economics	
MT21	Would barge and ship traffic and loading alter views?							●	■						●	
MT22	Would barging and shipping of sand and gravel interfere with existing vessel traffic in the Puget Sound shipping lanes?		●			●					■					
MT23	Would marine transportation from increased mining consume excessive amounts of energy and fuels?													■		
MT24	Would barging and shipping of sand and gravel deter tourism and decrease real estate values?														■	

Central Conveyor and Pier
Jefferson County, Washington

■ direct impact

● indirect impact or otherwise interrelated

Draft Pre-Scoping Document, December 2006

CHAPTER Two

- 2 1** EXISTING OPERATIONS
- 2 2** PROPOSED ACTION
- 2 3** NO ACTION ALTERNATIVE
- 2 4** ALTERNATIVE SITES CONSIDERED

DRAFT PRE-SCOPING DOCUMENT

CENTRAL CONVEYOR AND PIER
FRED HILL MATERIALS, INC.
DECEMBER 2006

2 1 | EXISTING OPERATIONS

2 1.1 | FRED HILL MATERIALS, INC.

Founded in 1946 in Poulsbo, Washington, Fred Hill Materials, Inc. (FHM) is a third-generation, family owned company that employs approximately 120 people supplying concrete, sand and gravel and pre-cast products for the Kitsap and Olympic peninsulas. FHM operates five sites in three counties: Port Orchard and Poulsbo (Kitsap County); Sequim (Clallam County); and, Port Townsend and Shine Pit (Jefferson County).

2 1.2 | SHINE PIT

The company's primary mining operation is at "Shine Pit," a 191.5-acre site (December 2006) comprised of 89.5 acres of ongoing mining and processing activities and 102 acres of replanted areas in various stages of reclamation. Shine Pit is located in the Thorndyke Block (21,901 acres) of the Hood Canal Tree Farm (71,762 acres) in Jefferson County's Upper Coyle Peninsula on commercial forest resource lands leased by FHM from Olympic Resource Management (ORM), which actively logs the Hood Canal Tree Farm under WDNR forest practice permits.

Currently, Shine Pit consists of the following primary components:

1. Operations Hub, including
 - a. portable crushing, washing, and screening equipment for sand and gravel;
 - b. portable equipment for recycling of concrete waste;
 - c. stockpile areas;
 - d. trucks and loaders;
 - e. scale house, maintenance building, caretaker home, well, and outbuildings;
 - f. access to SR 104 via private Forestry Service Road #3100 (Rock-to-Go Road);
2. Asphalt batch plant (operated by Ace Paving, Inc.);
3. Sand and gravel extraction areas;
4. Portable conveyors (approximately one mile) used to move sand and gravel from extraction areas to the processing area;
5. Mined acreage in various stages of reclamation.

For a photo overview of Shine Pit operations, see the following page Figure 2-1 Shine Pit (existing).

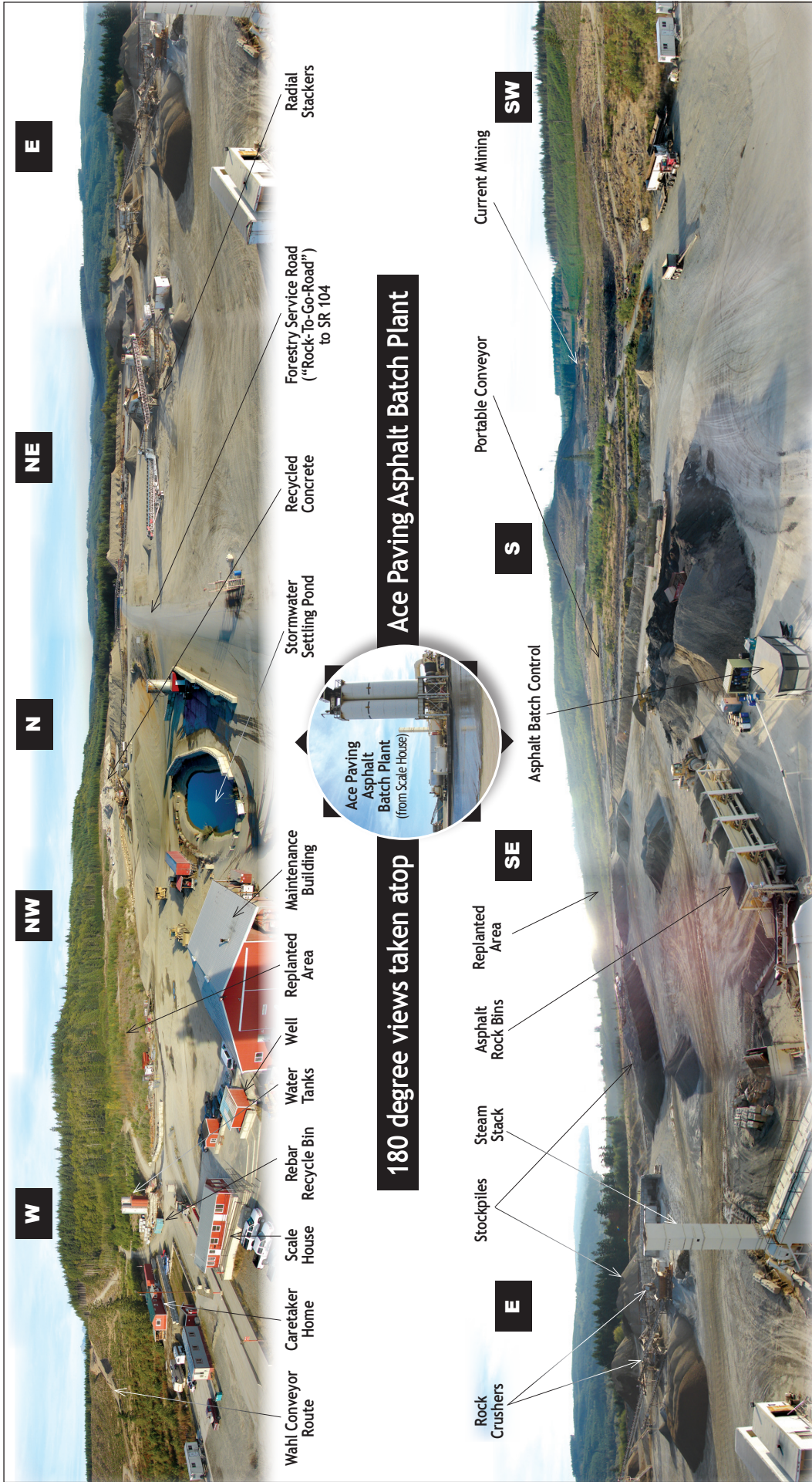


Figure 2-1
December 2006

Shine Pit (existing)

Central Conveyor and Pier
Jefferson County, Washington

FIGURE 2-1: These 180-degree panorama views taken in October of 2006 from the top of the asphalt batch plant include 191.5 acres (102 replanted and 89.5 for processing and active mining) of Shine Pit operations. To continue growth of existing operations, the Wahl Conveyor route (upper left) leads to future expansion areas a mile behind the ridge.

Shine Pit operations are being conducted under the requirements of the following permits and/or regulations:

- Mining permit (4502816): United States Department of Labor, Mine Safety and Health Administration (MSHA)
- Mine Reclamation permit (70-011936): WDNR
- National Pollution Discharge Elimination System (NPDES) General Sand and Gravel permit (WAG 50-1120): Ecology
- Recycled solid waste requirements: Ecology
- Air Quality permits: Washington State Olympic Region Clean Air Agency (ORCAA)
- Administrative Type 1 stormwater permits: Jefferson County Department of Community Development (DCD)
- Recycled solid waste requirements: Jefferson County Health Department (JCHD)
- On-site septic permit: JCHD

Ace Paving Inc., which sub-leases five acres from FHM to operate its portable asphalt batch plant within existing operations at Shine Pit, is also subject to these regulations, including a site-specific NPDES sand and gravel permit and an ORCAA air quality permit. In addition, Ace Paving obtained a Jefferson County Conditional Use Permit (*Jeffco ZON98-0041*) in 1999.

Mining in the Shine Pit vicinity began in 1959 to provide sand and gravel for the Hood Canal Bridge and State Route 104. Since that time, various other operators have mined sand and gravel in the same vicinity and provided truck delivery.

In December of 1976, FHM took over operation of Shine Pit and in 1979 obtained a Surface Mine Reclamation Permit issued by WDNR. Since then, FHM has continuously operated the pit, sequentially mined and processed materials, and opened extraction areas while replanting trees in former extraction sites.

2 1.3

EXTRACTION AT SHINE PIT, WAHL AND MERIDIAN

In 2002, FHM anticipated current extraction areas at the existing Shine Pit to be depleted by 2004. To continue the growth of existing activities, FHM received a 690-acre MRL consisting of the Wahl Extraction Area (156 acres), Wahl Conveyor route (9 acres) and Meridian Extraction Area (525 acres).

To begin mining in the Wahl Extraction Area located approximately 1.25 miles southwest of Shine Pit, FHM applied for an administrative Type 1 stormwater permit in July of 2003. In July of 2005, the county approved mining on a 37.9-acre segment furthest away from an unnamed tributary to Thorndyke Creek

within the Wahl Extraction Area. Mining in the remaining portions of Wahl awaits ground and surface water monitoring and analyses that will document precipitation, groundwater and in-stream flows of Thorndyke Creek and its unnamed tributary.

FHM will initiate the first phase of mining within Wahl once sufficient baseline data has been collected. While Wahl monitoring data is being collected, reviewed and analyzed, FHM has applied for and received three administrative Type 1 stormwater permits from Jefferson County adjacent to Shine Pit (*Jeffco MLA04-00549 for 10 acres in 2004; MLA05-00630 for 10 acres in 2005; MLA06-00384 for 20 acres in 2006*). When active mining shifts from Shine Pit



The current (December 2006) FHM extraction area adjacent to Shine Pit.

the applicant will follow the 15 conditions Jefferson County adopted as part of the MRL designation (*Jeffco Ordinance 08-0706-04*).

The project-specific mining operation is detailed in FHM's application for the Wahl Extraction Area and Wahl Conveyor (*Jeffco MLA03-00377*). The Wahl Extraction Area includes:

- Construction of a new private forestry service road and portable conveyor along a 1.25-mile route connecting the Wahl Extraction Area with the existing Shine Pit processing and truck loading areas. As of December of 2006, the majority of the new forestry service road had been constructed.
- Sequential mining in segments not to exceed 40 acres within approximately 137 acres (maximum depths of 90 feet) of the total 156-acre Wahl Extraction Area.

The Wahl Conveyor will bring aggregate from the Wahl Extraction Area to Shine Pit for processing and truck delivery. At left, the route climbs the ridge next to Shine Pit; at right, looking back 1.25 miles later from Wahl.



As Wahl extraction areas are depleted, FHM will seek additional mining permits within the Meridian Extraction Area of the MRL. Acreage-specific mining permits must comply with current local and state rules and regulations. Expansion beyond the MRL would be subject to rules for designating lands of “long term commercially significant mineral resources.”

2 1.4

PHASING AND PROGRESSION OF MINING

Sand and gravel processed at Shine Pit is delivered by truck, serving primary local markets in Jefferson, Clallam and Kitsap counties. FHM uses standard gravel mining techniques following WDNR’s best management practices. Due to the characteristics of the aggregate deposits at Shine Pit and surrounding area, explosives are not utilized in mining.

Generally, extraction includes three basic steps: site preparation, active mining and reclamation.

Site preparation begins with removing, stockpiling, transferring (to other ongoing reclamation segments) and/or mulching vegetation, duff and other non-marketable surface materials to augment topsoils. Active mining typically occurs along a working face, where heavy equipment loaders extract sand and gravel. Portable conveyors near working faces of mining move sand and gravel to processing areas.

Mining is conducted using “sequential reclamation,” dividing mining areas into segments (or phases) where the order of mining and reclamation is determined.

On the following two pages, see Figure 2-2 Mining and Reclamation and Figure 2-3 for a geologic cross-section illustrating active mining, soil types and water regimes.

To protect the seasonal water table underlying the Wahl-Meridian MRL, Jefferson County requires that mining be limited to a maximum depth of 10 feet above the seasonal high water table, which is measured and monitored pursuant to standard techniques and verified through independent review (*Condition 11, Jeffco Ordinance 08-0706-04*).

Reclamation consists of re-contouring the land, adding back topsoil layers, native shrubs and other salvaged ground cover, and replanting various tree species to return lands to productive commercial forest. WDNR requires a reclamation plan for each extraction area (*RCW 78.44*). These plans specify the permit holder's methods for achieving the following reclamation goals:

- Segmental progressive reclamation
- Preservation of the topsoil
- Slope restoration
- Stable slopes
- Final topography that blends reasonably with adjacent topography
- Effective re-vegetation with native multi-species ground cover and trees

To ensure these goals are met, WDNR requires the permit holder to submit an acceptable performance security (typically a bond) to cover reclamation costs should the permit holder fail to meet reclamation goals (*RCW 78.44.087*). Reclamation must be initiated within two years after mining is completed (*RCW 78.44.111*). Trees must be "green and healthy" before WDNR will release the applicant's performance security for each depleted segment. Once reclaimed, the lands return to commercial forestry, including thinning, harvesting and replanting.

Additionally, as required by Jefferson County (*Condition 12, Jeffco Ordinance 08-0706-04*) for mining within the Wahl and Meridian MRL:

"The maximum 'disturbed area' size shall be determined in consultation with the WDNR, but shall not exceed the lesser of 40 acres or the appropriate size for a specific proposed site according to consideration and implementation of the 'best management practices' promulgated by DNR. Reclamation shall be conducted on an ongoing basis, pursuant to the progressive segmental reclamation standards and according to the specific mining segment sizes and timelines established in the DNR-approved Reclamation Plans."

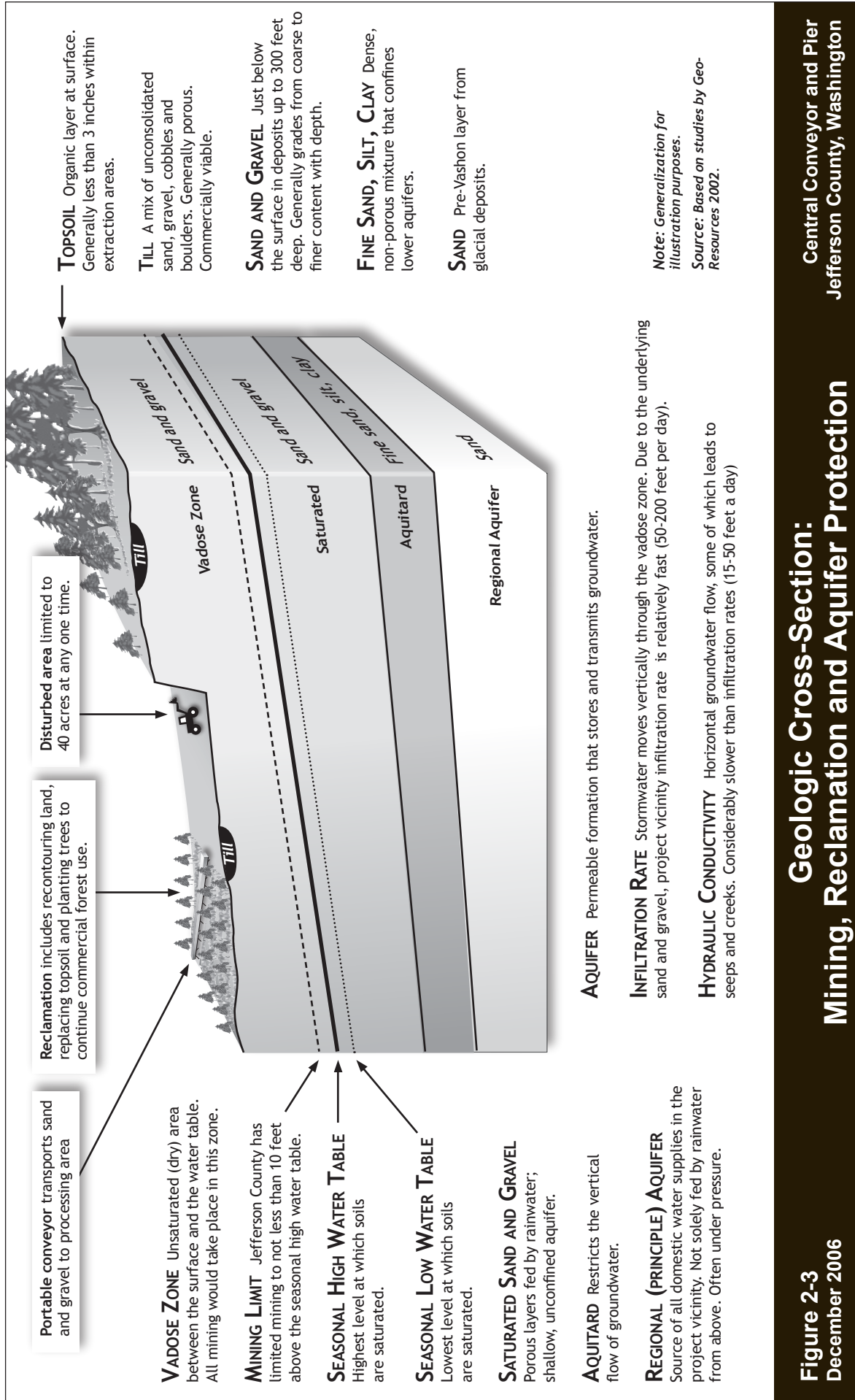


Figure 2-2
December 2006

**Mining and Reclamation
at Shine Pit**

Central Conveyor and Pier
Jefferson County, Washington

FIGURE 2-2: Prior to active mining, the thin layer of topsoils and vegetation is removed and stockpiled for reclamation. Once mining in a designated extraction area is completed, the land is recontoured, the surface organic layer is reapplied and trees are planted. The WDNR requires a performance security (bond) to ensure the reclamation process is completed.



Geologic Cross-Section: Mining, Reclamation and Aquifer Protection

Figure 2-3
December 2006

FIGURE 2-3: Mining generally occurs along a working face, where sand and gravel is removed. As the working face advances, areas behind are reclaimed back to commercial forest. Disturbed areas would be limited to 40 acres at any one time. Mining would occur at least 10 feet from the seasonally high water table as determined by monitoring wells.

PROPOSED ACTION

Following are details of the proposed Central Conveyor and Pier project necessary to determine if the project would result in probable significant adverse environmental impacts. The proposed development of a marine transportation system for the delivery of sand and gravel (Central Conveyor and Pier project) would include five primary components:

1. **Increased Mining.** Extraction rates, subject to market demand, would gradually increase to approximately 7.5 million tons per year with the added capability of marine transportation.
2. **Operations Hub.** To handle increased processing, the Operations Hub would be reconfigured to 100 acres.
3. **Central Conveyor.** A four-mile Central Conveyor consisting of Twin Conveyors (3.3 miles) and a Single Conveyor (0.7 miles) would connect the Operations Hub to a newly constructed pier on Hood Canal south of Shine Pit.
4. **Pier.** The Single Conveyor route would cross a 14.7-acre shoreline parcel and be supported by a load-out-only pier facility (13-18 feet wide by 990 feet long) located approximately five miles south of the Hood Canal Bridge and one mile northeast of Thorndyke Bay.
5. **Marine Transportation.** Barges and ships would transport sand and gravel to local (Port Angeles), regional (Puget Sound urban centers), intrastate (Vancouver, WA) and interstate (Oregon, California and Hawaii) markets.

*An aerial photo
of the project vicinity
on page 72
highlights
Project Components
in Figure 2-4.*

2.1

INCREASED MINING

Mining within the Wahl Extraction Area is estimated to sustain current truck-based operations for 20 years, subject to market demand. With the addition of marine delivery and increased local, regional, intrastate and interstate markets, the annual rate of mining over 25 years would increase from approximately 750,000 tons to 7.5 million annual tons.

As actual market conditions warrant, acreage-specific mining permits would be sought. These SEPA project-level permits would be subject to further environmental review. Condition 12 of Jefferson County Ordinance 08-0706-04 requires that at no time can the active mining area be greater than 40 acres, and that previously mined acreage must be in the process of reclamation.

GMA mandates that mineral resources of long-term commercial significance be identified and conserved for future use (*RCW 36.70a.110*). FHM estimates that a sufficient source of sand and gravel is available within the approved MRL (Wahl and Meridian) to supply both truck-based and marine delivery for the foreseeable future (20 to 40 years).

2 2.2 OPERATIONS HUB

The proposed Central Conveyor and Pier project would require an Operations Hub of approximately 100 acres, according to applicant projections, to facilitate handling, processing and storage of projected increased volumes of sand and gravel; additional stockpile areas; portable conveyors; crushing, washing, screening and recycling equipment; and trucks and loaders. Final designs and specifications would be subject to applicable permits.



Shine Pit processes sand and gravel into crushed and washed aggregate products.

2 2.3 CENTRAL CONVEYOR

The proposed Central Conveyor would move sand and gravel from the Operations Hub to a pier on Hood Canal for marine transport by barges and ships. The Central Conveyor would be approximately four miles long and comprised of Twin Conveyors (3.3 miles) and a Single Conveyor (0.7 miles). The Twin Conveyors (two five-foot wide conveyors) would be located at the northern portion of the Central Conveyor originating at Shine Pit; the Single Conveyor (six-foot wide) at the southern end of the Central Conveyor. The Central Conveyor would have a two-foot ground clearance below its return belt for wildlife crossings, increasing to 4-6 feet approximately every 300 feet for larger mammals.

The Central Conveyor route crosses commercial forestlands where ongoing logging operations have been conducted for over 100 years. Evidenced by numerous clearcuts, the Thorndyke Block of the Hood Canal Tree Farm is on its second and third harvest rotations. The caretaker residence at Shine Pit is the only residence within the Thorndyke Block.

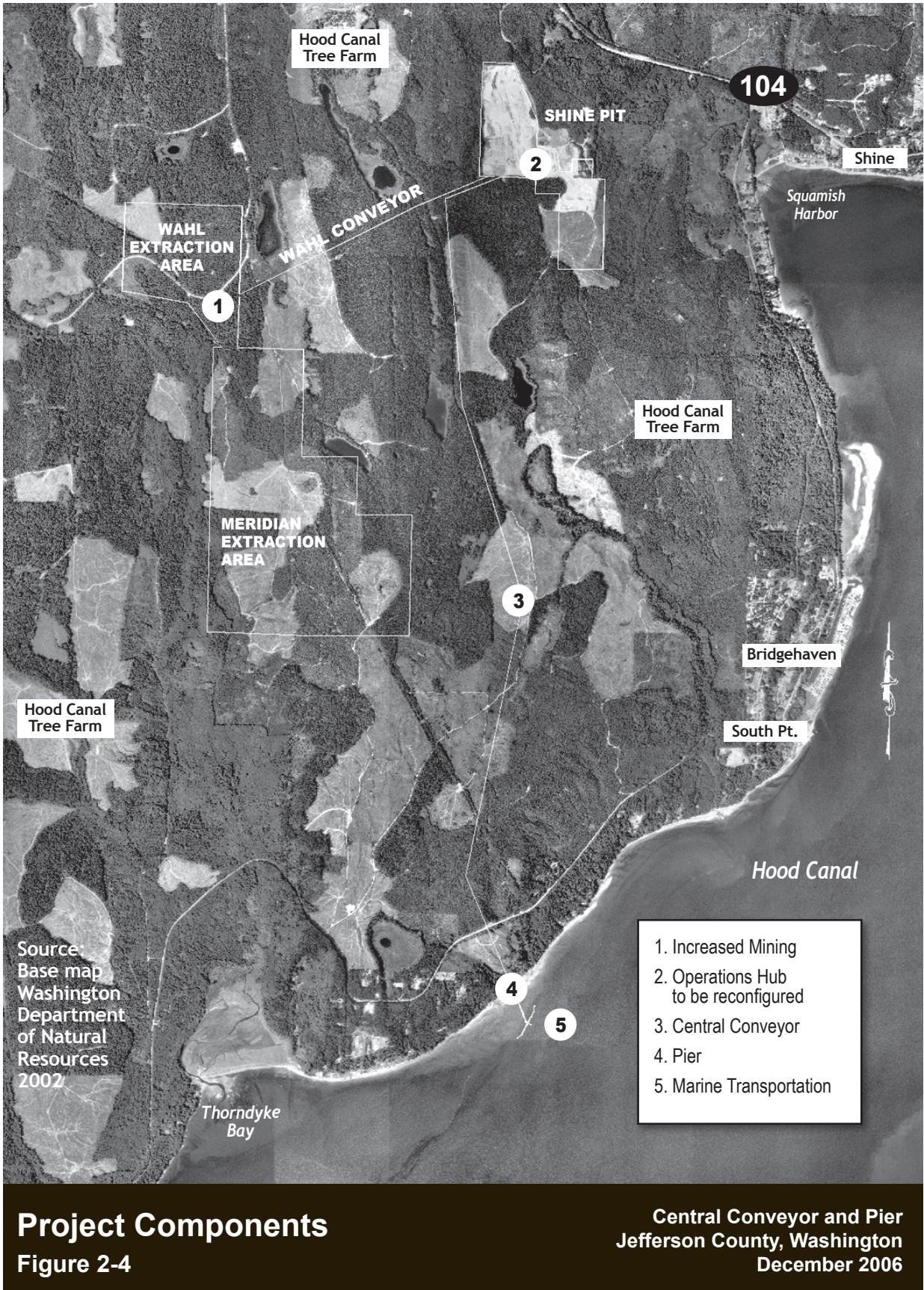


FIGURE 2-4: Proposed project components include increased mining; reconfigure the existing 191.5-acre Shine Pit processing, extraction and replanted areas to a 100-acre Operations Hub; build a conveyor to Hood Canal, and construct a pier for marine transportation of sand and gravel to local, regional, intrastate and interstate markets.

Major portions of the existing Forestry Service Road #1950 and #2930 (total area of 6.3 acres) would be abandoned, reclaimed and replaced with roads (7.3 acres) that avoid wetlands, their associated buffers and gain a straighter alignment with the Central Conveyor.

From the southwest corner of the Shine Pit, the Central Conveyor would travel south through commercial forest (designated forest resource lands) 3.3 miles before converting to the Single Conveyor. The route continues on commercial forest land, bridges over Thorndyke Road just south of mile post 3, covers more commercial forest, and then crosses a 14.7-acre waterfront parcel (zoned Jefferson County Rural Residential [RR 1:5]) before terminating at the end of the proposed pier.

2.3.1

See Figure 2-5 Twin and Single Conveyors for Central Conveyor route and transfer points, page 74.

See Figure 2-6 Conveyor at Pier (typical) on page 75 for a sample conveyor configuration.

Conveyor Description and Operation. Conveyor belts would travel on self-lubricating rollers forming a U-shaped trough that carries sand and gravel. Failsafe sensors on each head pulley motor automatically shut down operation along the entire conveyor system in case of belt failure.

Transfer Points – Each of the six segments of the Central Conveyor would be connected a transfer point, where sand and gravel from the incoming conveyor segment would drop into a hopper and funnel onto the next conveyor segment. The Central Conveyor would shift direction slightly at Transfer Points 2, 3, 4, and 5. A utility shed at each transfer point would enclose the conveyor and hopper, protect electrical equipment, contain fugitive dust, and minimize noise. This shed would include a head pulley and electric motor, unpowered tail pulley, hopper and return belt cleaning equipment.

At each transfer point, an automatic sweeper would be used to clean fugitive dust and sediment from the conveyor belts prior to their return loops. After discharging their loads, the belts would flip 180 degrees prior to returning, thus keeping the “load-sides” facing upward to limit fugitive sediment during the belt’s return. All fugitive dust and sediment captured at the transfer point would be re-placed onto the supply-feed belt.

Covers – Metal roofs/sidings or half-moon metal covers would be installed over the Central Conveyor’s belts to keep out rain and wind and inhibit fugitive dust, sand or gravel from escaping. All portions of the Twin Conveyors would have half-moon covers. The Single Conveyor would consists of either half-moon covers or metal roofs/sidings (located at the Thorndyke Road crossing and at the pier).



A covered conveyor similar in design to the Central Conveyor half-moon cover.

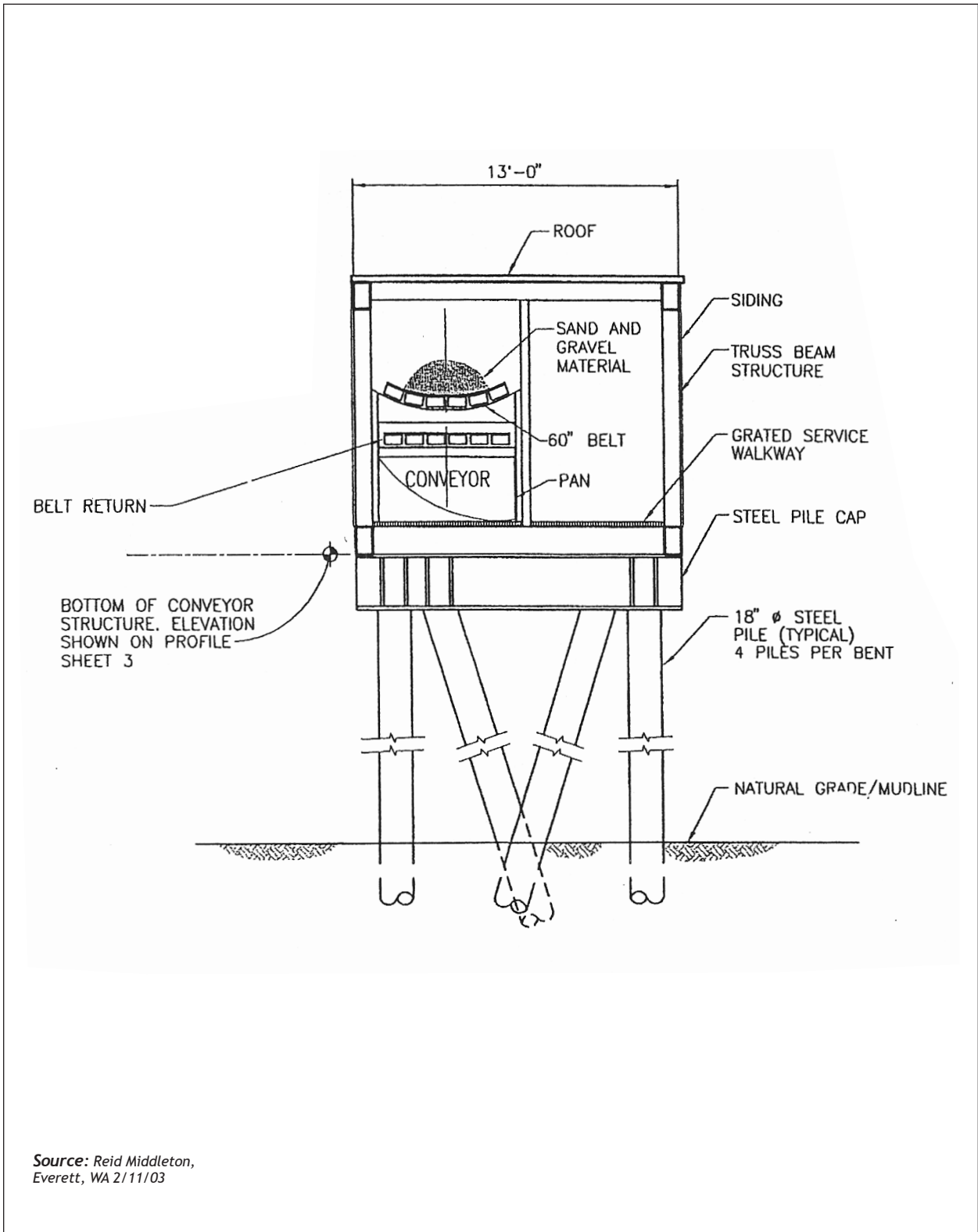


Twin and Single Conveyors

Figure 2-5

Central Conveyor and Pier
 Jefferson County, Washington
 December 2006

FIGURE 2-5: The Central Conveyor includes Twin Conveyors and a Single Conveyor. Portions of the existing forestry service roads (6.3 acres) would be replaced with roads (7.3 acres) that avoid wetlands, their associated buffers and provide a straight alignment with the Central Conveyor.



Source: Reid Middleton,
Everett, WA 2/11/03

Conveyor at Pier (typical)

Figure 2-6

Central Conveyor and Pier
Jefferson County, Washington
December 2006

FIGURE 2-6: The conveyors would be covered with half-moon light metal for most of the route and completely enclosed over Thorndyke Road and the pier loadout. At the beginning of the pier, the enclosed conveyor (shown) features a pan under the five-foot belt and a grated service walkway. (See Facts Sheet in Appendix I; and in Chapter Two Proposed Action).

Enclosures – Enclosure designs would be utilized to contain fugitive sediment, depending on the terrain and locale along the Central Conveyor route.

As the Single Conveyor crosses Thorndyke Road approximately 60 feet overhead, the conveyor would be enclosed with a metal roof/siding and solid floor to contain any fugitive sediment. Similarly, the pier load-out would be enclosed with a metal roof/siding and solid floor.

At the top of the shoreline bluff, a truss bridge would span a near-shore wetland (avoiding Wetland B) located at the base of the bluff. The truss bridge would support the Single Conveyor and its grated walkway, half-moon cover and pan under the return belt. The truss bridge ends at approximately the Ordinary High Water (OHW) mark, where the pier begins. The pier's initial 650 feet (approximately) would be enclosed with a metal roof/siding and a grated walkway with a pan under the return belt.

See Figure 2-9 on page 85 for a block illustration of the truss bridge leading to the beginning of the pier.

Under the return belt -- Pans or solid floors would be installed under the Central Conveyor return belts at five locales. At each, workers would remove dust or sediment from the pans or floors and place it back onto the supply-feed belt:

1. West of Wetland C (0.4 miles), the Twin Conveyor route crosses nine drainage swales. A pan would be placed under the belts to prevent fugitive dust or sediment from falling onto the conveyor roadbed and migrating into the drainage swales.
2. At the Thorndyke Road crossing, a solid floor would contain fugitive sediment.
3. At the top of the bluff preceding the pier, a truss bridge would have a pan placed under the conveyor belt to prevent fugitive dust or sediment from falling into Wetland B or other near-shore areas.
4. At the base of the shoreline bluff, after the truss bridge, the beginning of the pier would have pans similarly installed under the return belt.
5. At the pier loadout, a solid floor would contain fugitive sediment, further removed by brushes and scrapers.

2 2.3.2

Central Conveyor Construction. A truck-mounted crane would lift prefabricated sections of the Central Conveyor off flatbed trucks and lower them along a route that is gently sloping, requiring minor excavation or fill. Underground electrical and control wiring would be installed by trenching underneath and/or adjacent to the road and/or conveyor alignment. For elevated portions (road crossing, uneven terrain or slopes), the Central

See Figure 2-7 Single Conveyor Cut and Drainage System on page 78.

Conveyor would be supported on steel piles up to 18 inches in diameter with or without a concrete slab base. Drainage would be installed as necessary, using Best Management Practices prescribed by Ecology's stormwater manual for Western Washington (2005).

As the Single Conveyor transitions from the upland plateau to the beach, its route crosses general areas that include designated erosion, seismic, landslide hazard areas and landslide deposit areas mapped as geologically hazardous in Jefferson County's 1998 GMA Comprehensive Plan (Comp Plan) Critical Areas Map.

The Single Conveyor's specific route crosses a landslide deposit area deemed acceptable for non-occupied structures. As a result, construction of the Single Conveyor would include some specialized geotechnical techniques to stabilize slopes for support. A "cut-and-drainage" system would be placed a sufficient distance from the top of the shoreline bluff to minimize possible bank erosion. Excavated material would be backhauled to an upland disposal area.

2.4

For more on the proposed pier site and shoreline vicinity, see Figures 2-8 through 2-10 on pages 82-86.

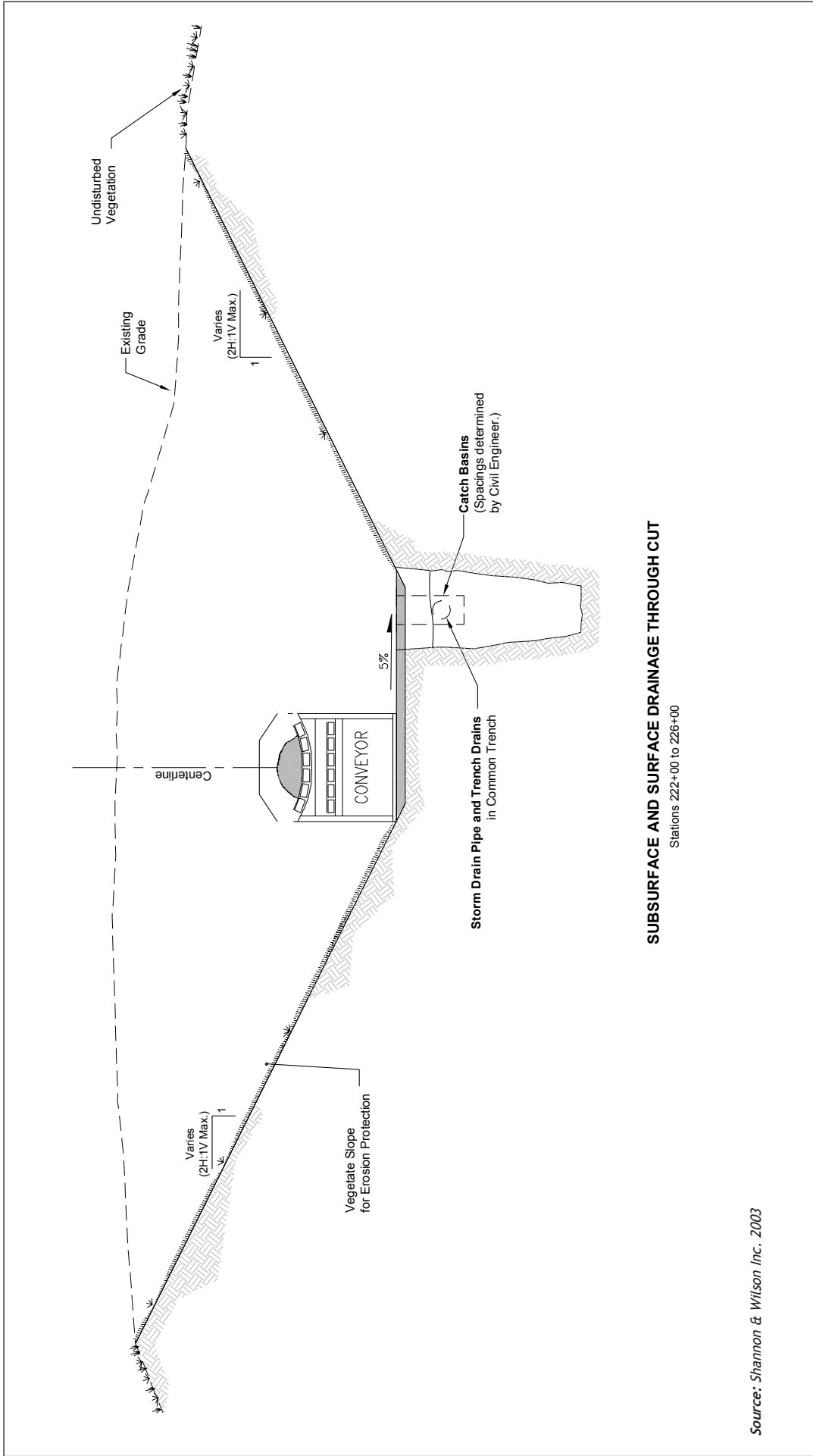
PIER

The proposed pier would be located on the eastern shore of the Upper Coyle (Toandos) Peninsula in Jefferson County, Washington, along the Hood Canal. The pier would be situated approximately five miles southwest of the Hood Canal Bridge; 1.25 miles southwest of South Point; one mile northeast of Thorndyke Bay; 2.25 miles west of Kitsap Memorial Park and the former Lofall ferry dock (adjacent); three miles north of the northernmost boundary of Kitsap Naval Base-Bangor; and, approximately five miles north of Kitsap Naval Base-Bangor's Delta Pier. (See Chapter One Figure 1-3 Project Location Northern Hood Canal.)

The pier design incorporates features and conservation measures recommended in a 2001 WDFW white paper on overwater structures in marine environments and in a 2005 NOAA Fisheries report entitled "Non-Fishing Impacts to Essential Fish Habitat and Recommended Conservation Measures."

General recommended features include:

- Steel piles of appropriate diameter and placements that would yield a minimum number of piles while allowing for wide spacing (generally greater than 40 feet between pile support points; actual pier design is 100 feet)
- Open grated walkways
- Open steel girder construction



Central Conveyor and Pier
Jefferson County, Washington

Single Conveyor Cut and Drainage System

Figure 2-7
December 2006

FIGURE 2-7: A cut and drainage system preceding the bluff would be installed to stabilize landslide deposit areas for the six-foot wide conveyor.

Source: Shannon & Wilson Inc. 2003

- Minimum height standards above mean low water
- Minimizing widths
- Shielded and directed lighting
- Placement in deep water

The proposed pier would be built on the Class II tidelands of a 14.7-acre waterfront parcel and extend onto state sub-tidelands managed by the WDNR. The parcel, owned by Hood Canal Sand and Gravel, LLC (with common



The Single Conveyor would cross Thorndyke Road (see right) and commercial forest lands before reaching the corner of the marked property (right) controlled by the applicant. The conveyor would span this shoreline bluff (above) to the pier beach site shown (above right) looking to the south.



owners of Fred Hill Materials, Inc.), is designated under the Comp Plan as Rural Lands. Under the Jefferson County Shoreline Master Plan (1981), the parcel's tidelands and 200 feet upland are designated as Conservancy; the state's sub-tidelands Aquatic.

The nearest residences to the pier are approximately 2,100 feet to the north, and over 1,000 feet to the south. The latter residences are oriented to the south and would not be part of the conveyor/pier viewshed.

The near-shore areas of the pier site on Hood Canal would be adjacent to a designated quarter-mile navigational channel west of a Naval Exercise Area (navigation is permitted within the area, except during times of Naval exercises). That 15-square-mile charted area, which is undergoing an expanded use EIS, is located north of Bangor's Naval Operations Area, which is approximately three miles south of the proposed pier site.

The waters, shores and uplands of upper Hood Canal are considered within the usual and accustomed hunting, fishing, and shellfish gathering general areas for the Lower Elwha, Jamestown S'Klallam, Port Gamble S'Klallam, and Skokomish nations (Point No Point Treaty). The Suquamish nation (Port Madison Treaty) also lays claim. No improved access to the shoreline parcel exists, limiting recreational use to people on foot and in small boats.

2.4.1

Pier Description and Specifications. The pier is a load-out only facility designed for barges and ships to transport sand and gravel.

The proposed pier design consists of a stationary and retractable load-out conveyor supported on pilings spaced at 100-foot intervals and two support structures. Approximately perpendicular to the pier in deep water are eight 20-foot by 20-foot dolphins (six breasting and two mooring) connected by a grated catwalk. The pier would be painted to blend into the existing environment and constructed in a manner minimizing visual intrusion and glare. The pier begins at approximately the Ordinary High Water (OHW) mark. Pilings would support the pier trusses (and enclosed conveyor), support structures, and breasting and mooring dolphins.

Two open steel structures would support the conveyor near the end of the pier. The first structure, located approximately 650 feet from the beginning of the pier, supports the conveyor and has an overall height of 91 feet above Mean Low Low Water (MLLW). The second structure supports both the conveyor and the retractable (load-out) conveyor, which will have an overall height of 76 feet above MLLW.

Two maintenance/storage buildings would be located on dolphins. An enclosed control room with access stairways, storage area, restroom, and

holding tank would be located within the second support structure. These facilities will not increase the area of over-water coverage.

Lighting of the intertidal and subtidal portions of the conveyor and pier would be kept to the minimum required for safe operation. Lighting of the water surface would be minimized with location, color, shielded and/or directional fixtures. During non-operation hours, lights would be turned off except as needed for maritime safety requirements.

An employee parking area (10-vehicle capacity) would be built east of Thorndyke Road. Workers would access the pier through a walkway adjacent to the Single Conveyor.

2 2.4.2

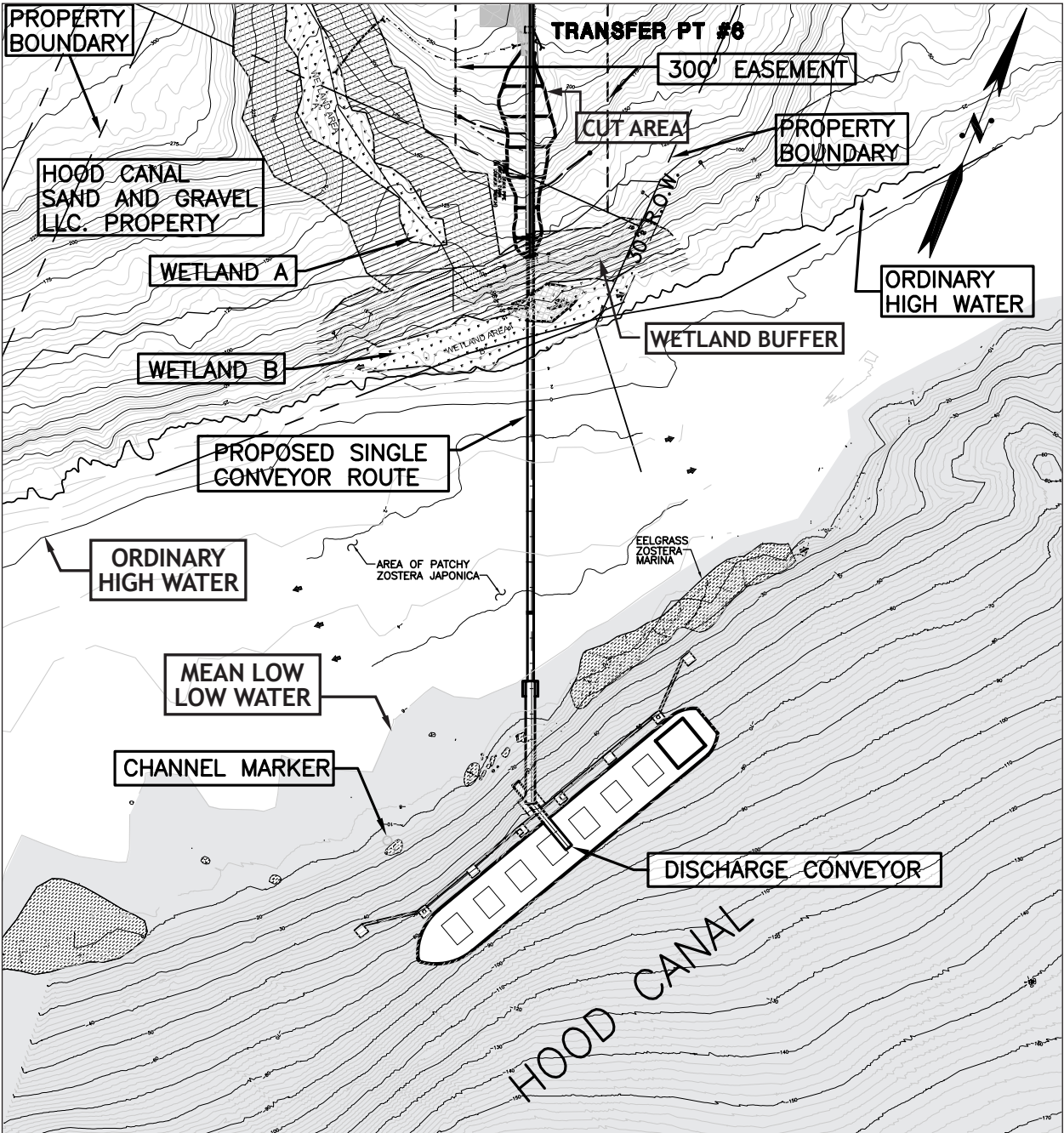
Pier Construction. The primary, over-water pier assembly would be constructed from barges. The largest barge would measure approximately 155 feet by 50 feet and draw approximately six feet of water when fully loaded. Pilings would be installed using a quieter vibratory method, rather than pile-driving. Prefabricated over-water conveyor trusses would then be hoisted into position using barge-mounted cranes.

The applicant proposes two alternatives in constructing the truss system supporting the conveyor from the shoreline bluff to the beach. Both would require the placement of varying amounts of construction equipment along the upper beach.

Alternative 1: Hoist the truss up from the beach or down from the top of the slope, using a cable. Construction would require two temporary hoists, one uphill and one downhill.

Alternative 2: Place the truss using a crane from the beach. A barge with a crawler (self-propelled) crane would be maneuvered at high tide alongside newly placed piling supports at an estimated elevation of six feet MLLW. Then, once the tide has receded, the crane (weighing approximately 165 tons) would be driven off the barge onto timber mats placed onto the beach to temporarily support the crane.

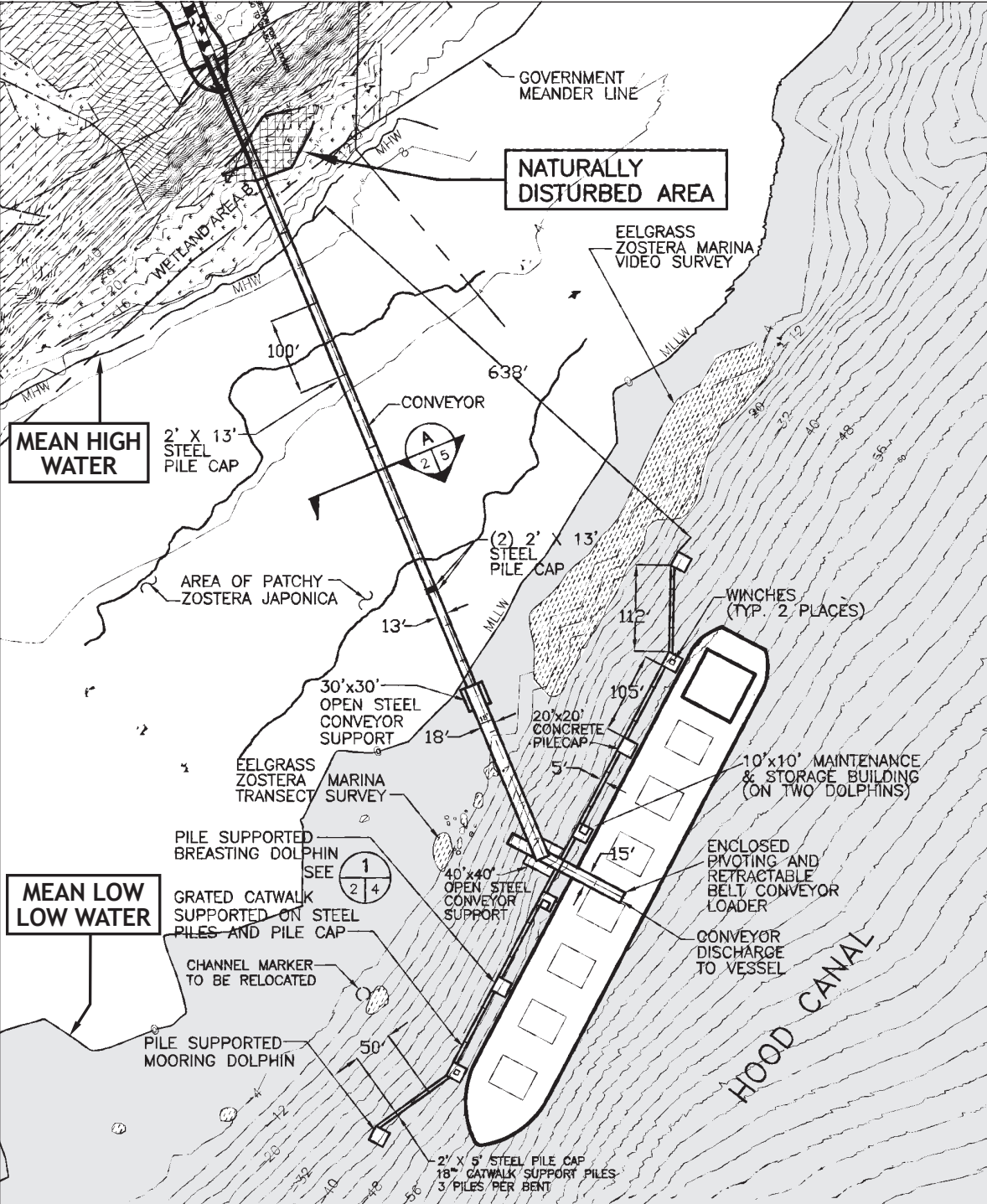
Due to seasonal restrictions to protect salmon and nesting bald eagles, construction of the pier would likely take place in late summer and early fall. In-water construction work would likely occur within the WDFW construction window for Hood Canal from July 16 to Feb. 15. The minimum construction window of Aug. 15 through Oct. 30 could be extended through consultation with the WDFW and USFWS. Construction would require approximately two months.



*Note: For illustration only. Preliminary designs prepared by Reid Middleton.
 The original drawing was modified to promote clarity and readability and is provided in Appendix F.
 Source: Reid Middleton, Everett, WA, 2/11/03*

Shoreline, Conveyor and Pier (at low tide) Central Conveyor and Pier
 Jefferson County, Washington
 December 2006
Figure 2-8a

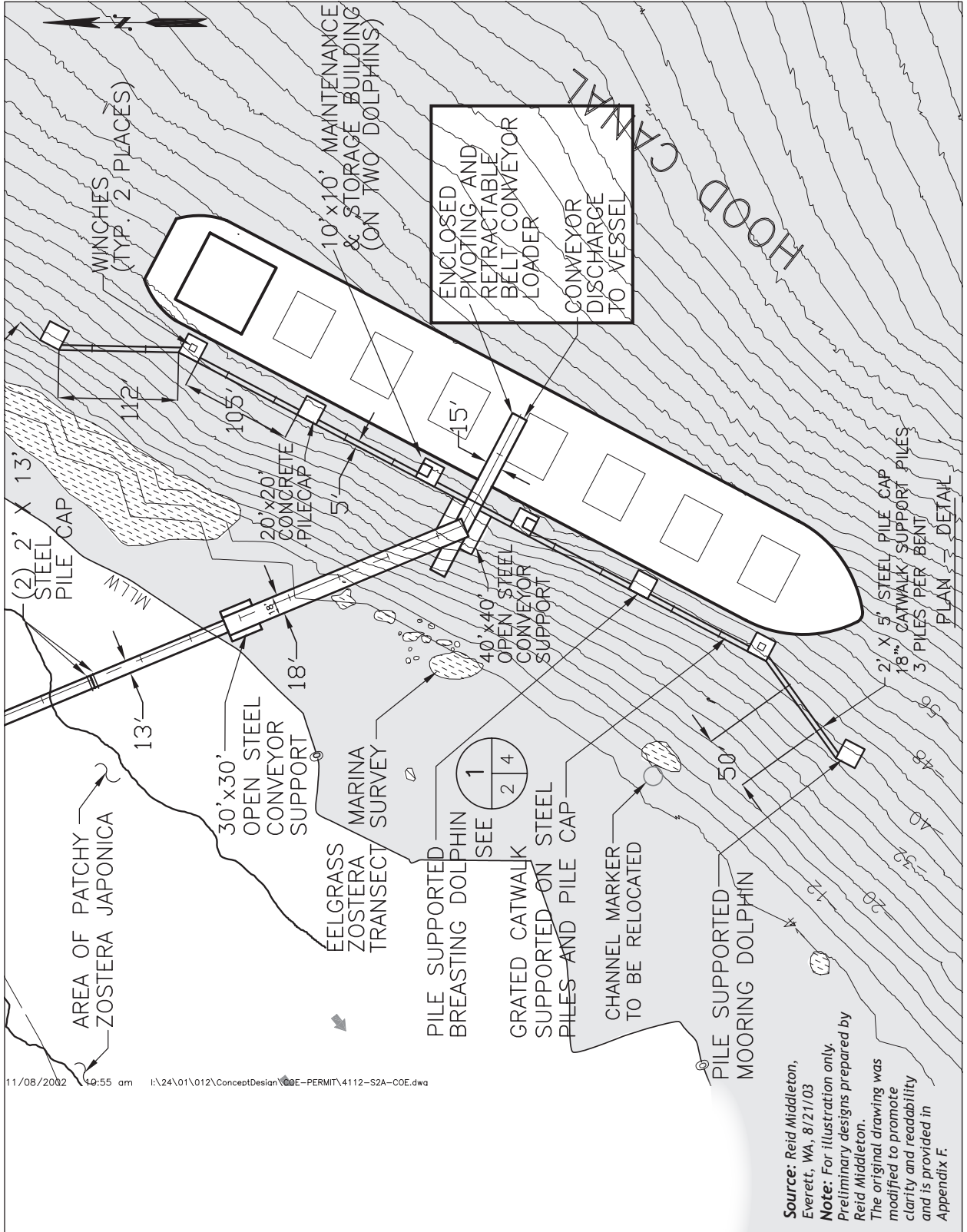
FIGURE 2-8a: The Central Conveyor crosses a 14.7-acre parcel of waterfront property, avoiding Wetland A and spanning over Wetland B. The conveyor terminates at the end of the proposed pier where deep water (50-75 feet) can accommodate barges and ships.



Source: Reid Middleton, Everett, WA, 2/11/03
 Note: For illustration only. Preliminary designs prepared by Reid Middleton.
 The original drawing was modified to promote clarity and readability and is provided in Appendix F.

Shoreline, Conveyor and Pier (at low tide) Central Conveyor and Pier
 Jefferson County, Washington
 December 2006
Figure 2-8b

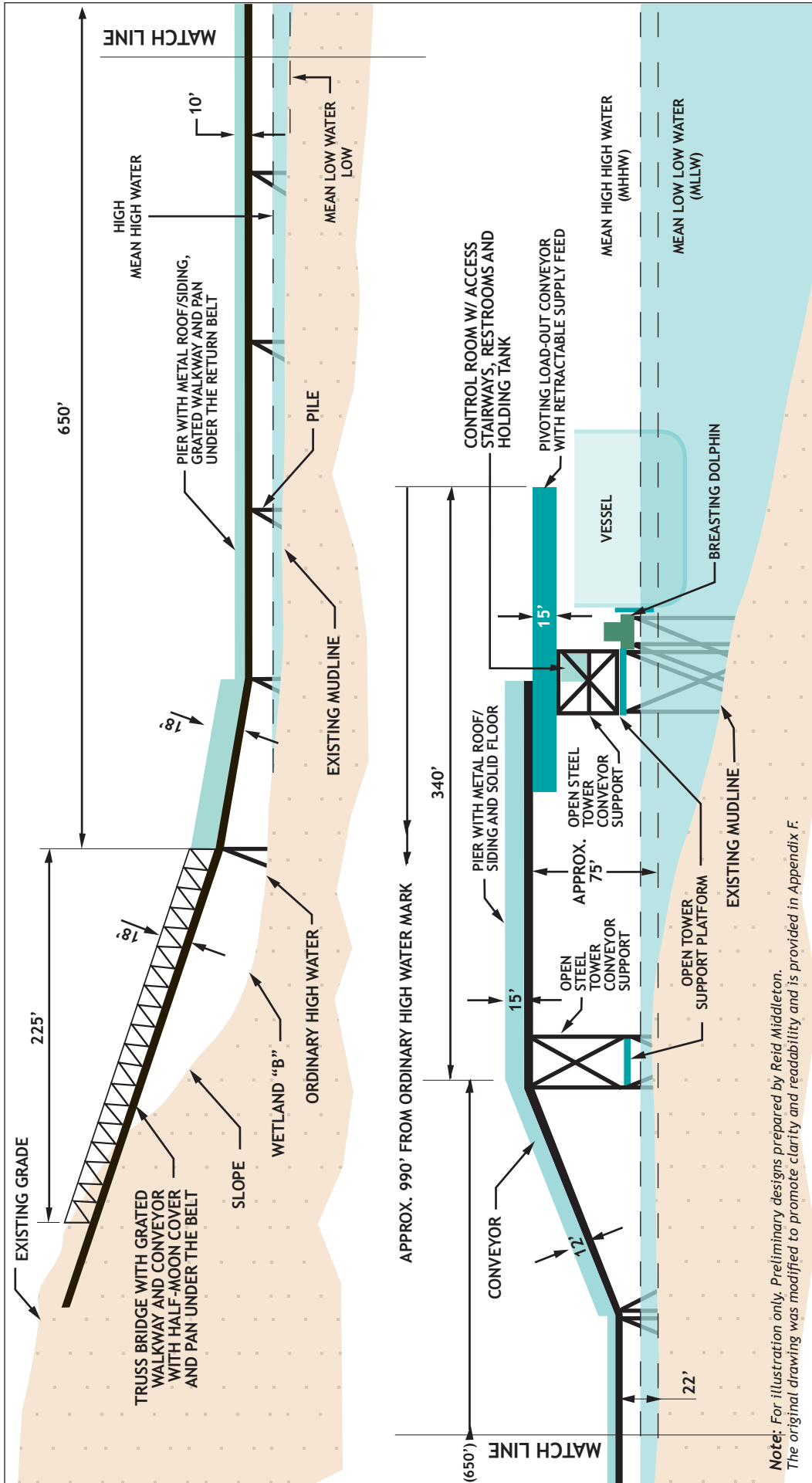
FIGURE 2-8b: The conveyor spans a bluff and naturally disturbed areas to the beach (high tide), where it crosses tide flats (low tide) to the pier. The enclosed conveyor would be 13 to 18 feet wide and avoid native eelgrass beds to the north and south.



Shoreline, Conveyor and Pier
 Figure 2-8c

Central
 Jefferson County,
 Washington
 December 2006

FIGURE 2-8c: An enclosed pivoting and retractable loader would load sand and gravel onto barges and ships. Typical barges would be 60 feet wide by 240 feet; largest barges 100 by 400. The largest ships – when available on the West Coast – would be a maximum 110 feet wide by 745 feet in length (shown).



Central Conveyor and Pier
Jefferson County, Washington

Pier Profile

Figure 2-9
December 2006

FIGURE 2-9: The proposed pier consists of a stationary and retractable load-out conveyor supported on pilings spaced at 100-foot intervals and two support platforms. The pier maintains a low profile and then rises gradually to its highest point (91 feet) for loading sand and gravel onto barges and ships. (See *Pier under Proposed Action*.)



Note: Schematic block depiction for illustration only. Design specifications are included in the Project Fact Sheets (Appendix I)

Figure 2-10
December 2006

Pier Illustration

Central Conveyor and Pier
Jefferson County, Washington

FIGURE 2-10: The pier includes eight dolphins (six breasting and two mooring) connected by a 5-foot wide catwalk. Maintenance/storage buildings would be located on the two innermost breasting dolphins. An enclosed control room with access stairways, storage area, restroom and holding tank is located within the second support structure. A pivoting, load-out conveyor with a retractable supply feed would lower and adjust during the delivery process.

2 2.5 MARINE TRANSPORTATION

For barging and shipping to local, regional and interstate markets, see Figure 2-11 Marine Transportation Routes on page 89.

FHM would load barges and ships up to 24 hours a day, up to 7 days a week and up to 300 days a year, allowing 65 days annually for holidays, tribal fishing, inclement weather and other periods of non-use. The number of barges and ships calling at the pier would vary with market conditions. By applicant contract, all barges would go under the eastern span of the Hood Canal Bridge. Only ships would require a bridge opening at mid-span. Such openings would be conducted during off-peak vehicle traffic times.



All barges would go under the eastern span (Kitsap end) of the Hood Canal Bridge. A tug and typical-sized, 60-foot-wide barge (left and above) navigate the 230-foot opening.

Initially, only barges will call at the pier. Typical barge capacity is 5,000 dead-weight U.S. short tons (dwt). In Year 1 of pier operations, it is anticipated that the volume of sand and gravel transported by barge would be 2 million U.S. short tons (tons). By Year 10, the volume of sand and gravel transported by barge is expected to reach 4 million tons annually.

Only U.S. flagged ships would call at the pier. At this time, the particular ships required for transport of sand and gravel at the proposed pier are not available on the West Coast. It is anticipated that these ships would become available in approximately eight to 12 years after the pier's construction and would be used subject to market demand.

In the first year that U.S. flagged ships become available, it is anticipated that 600,000 tons of sand and gravel would be transported by ship. By Year 25, the volume of sand and gravel transported by ship is expected to reach 2.75 million tons annually.

By Year 25, it is anticipated that the combined volume of sand and gravel transported by ship and barge would reach 6.75 million tons annually (4 million tons via barge and 2.75 million tons via ship), subject to market demand.

Barge loading times would range between one and eight hours, depending on barge capacities that range from 2,500 to 20,000 tons (dwt). Typical barges with a capacity of 5,000 to 7,000 tons (dwt) of sand and/or gravel could be loaded in about two to three hours. Up to two barges could be berthed at the pier at one time; up to six barges per day.

Ship loading times would range between eight and 24 hours, depending on ship capacity. Ship volumes range from 20,000 and 65,000 tons (dwt). Up to six ship loadings would occur each month.

2.5.1

Marine Operations Plan. A barge and ship operations plan would be developed in coordination with the Army Corps, Navy, Coast Guard, WDOT, Ecology, WDFW and Puget Sound Harbor Safety and Security Committee. The plan would include required tug operations and procedures for the safe handling of barges and ships as well as emergency response. Barges and ships would be required to report arrivals and departures under the Washington State Vessel Traffic Service (VTS) operated by the Coast Guard. Marine operators calling on the pier would also be required to follow an Environmental Management System (EMS) and plan for all operations within Hood Canal, including approach, loading and departure. Elements of the plan would be developed based on the mitigation measures identified in the EIS, such as those defined to minimize the risk of introducing invasive species.

Ships would be operated by a licensed, professional pilot familiar with the inland waters of Puget Sound, including Hood Canal. The pilot would maintain overall command and supervise the work of all officers and crew, setting the course, speed and navigational maneuvering to avoid hazards.



When available on the West Coast, U.S. flagged and crewed Panamax-class ships (left) up to 110 feet wide and 745 feet long would each transport the equivalent of 2,000 truck-and-trailer loads of sand and gravel.



Marine Transportation Routes
Figure 2-11
 Central Conveyor and Pier
 Jefferson County, Washington
 December 2006

FIGURE 2-11: The pier would be located five miles south of the Hood Canal bridge near the mouth of the 60-mile-long Hood Canal. Destinations include barging to Washington’s major urban areas and to Port Angeles; shipping and barging to Oregon, California and Hawaii.

NO ACTION ALTERNATIVE

Both SEPA and NEPA require an EIS to consider what would happen if the proposed action were not taken. The No Action alternative forms the baseline by which adverse environmental impacts of the Proposed Action are compared and measured.

For the Central Conveyor and Pier project, the No Action alternative would include these primary results:

- Construction and operation of the Central Conveyor and Pier would not occur
- Continued growth of existing operations
- FHM trucking versus barging to select local markets
- Increased mining from other sources

2 3.1

PROPOSED ACTION WOULD NOT OCCUR

Should the Proposed Action not be approved, construction and operation of the Central Conveyor and Pier would not occur.

2 3.2

CONTINUED GROWTH OF EXISTING OPERATIONS

With or without the Central Conveyor and Pier project, the applicant has stated that it plans to continue to grow existing operations into the indeterminate future. Under the No Action alternative, sand and gravel would be extracted using the same methods as the Proposed Action but at a slower rate of extraction. FHM estimates that the Wahl Extraction Area could supply sand and gravel to local markets via trucks for approximately 20 years, depending on market conditions.

2 3.3

TRUCKING VERSUS BARGING TO SELECT LOCAL MARKETS

Should the project not be developed, FHM would truck sand and gravel to select local areas that it would have barged to under the Proposed Action, such as Port Angeles.

2 3.4

INCREASED MINING AND TRANSPORTATION FROM OTHER SOURCES

Sand and gravel is a basic commodity. Demand will be met. It is not a volatile market; increased demand has historically paralleled population growth and is likely to continue to do so.

Should the project not be developed, the sand and gravel that would have been delivered by ships and barges from the Central Conveyor and Pier

would instead come from other existing and new mines via barges, ships, rail and/or trucking. The volumes would grow from 2 million tons during the first year of operation to 4 million tons by year 10, and 6.75 million tons by year 25. Extracting these amounts from other sources would speed depletion of existing mines and development of new mines.

2 4 | ALTERNATIVE SITES CONSIDERED

2 4.1 | REQUIREMENTS FOR CONSIDERING ALTERNATIVES

Under SEPA, Jefferson County is required to consider reasonable alternatives that could feasibly attain or approximate a proposal's objectives, but at a lower environmental cost (*WAC 197-11-440[5b]*).

For private projects where the only agency action is issuing a permit, the range of alternatives available to the permitting agencies is generally restricted to approving, approving with conditions or denying the permit. Under SEPA, "When a proposal is for a private project on a specific site, the lead agency shall be required to evaluate only the 'no action' alternative plus other reasonable alternatives for achieving the proposal's objective on the same site" (*WAC 197-11-440[5d]*).

For federal actions falling under the National Environmental Policy Act (NEPA), federal agencies must consider reasonable alternatives that can meet the purpose and need for action. When the only federal action is issuing a permit, the federal agency's role is to determine if the project is consistent with applicable federal regulations and to consider measures that could mitigate adverse environmental impacts. Therefore, during the EIS process, additional alternatives (e.g. additional mitigation measures) may be identified that could meet project objectives at the proposed site, but at a lower environmental cost.

While there is no requirement to consider alternative sites in the EIS, the applicant reported that it considered several sites prior to selecting the proposed pier location. These alternative sites were outlined in an applicant-prepared analysis submitted to the U.S. Army Corps of Engineers in 2003.

2 4.2 | ALTERNATIVES CONSIDERED BY APPLICANT

In considering options for developing a pier capable of loading sand and gravel onto barges and ships, FHM reported that it searched first for sites that already had piers and/or other suitable sites within a commercially viable distance from the source of sand and gravel.

Selection criteria included a relatively direct route for a conveyor from the Operations Hub to a shoreline site with suitable depth for barges and ships with a minimum of environmental and/or engineering challenges.

The following sites were considered but eliminated because they could not achieve project objectives at a lower environmental cost than the proposed site.

Port Gamble – The Port Gamble industrial waterfront area and its abandoned sawmill located on the Kitsap side of the Hood Canal featured existing docks. However, due to shallow waters, the site would have required dredging and/or an extended pier to cross an area of relatively high native eelgrass density.

Establishing a conveyor route across Hood Canal Bridge would have required extraordinary engineering and securing multiple public and private easements from Shine Pit to Port Gamble. Sand and gravel would have been trucked approximately six miles each way across the Hood Canal Bridge.

Trucking to a load-out facility is counter to one of the project’s primary economic and environmental benefits and would incur high transportation and environmental costs. Loading each 20,000-ton barge would be equivalent to 625 truck-and-trailers (or 1,250 trips across the bridge); a single bulk carrier ship more than 2,000 truck-and-trailers (or approximately 4,000 trips across the bridge).

For locations of alternative sites considered by applicant, see Figure 2-12 on page 94.

Port Townsend Mill – This site featured an active pulp mill and barge loading/unloading facility on Port Townsend Bay, approximately 20 miles from Shine Pit. A conveyor route would have involved obtaining numerous private and public easements and/or crossing of environmentally sensitive areas, including various creeks and streams. As an alternative to building a conveyor, trucking would have greatly increased traffic to/from Port Townsend and overwhelmed local and state roads.

Port Angeles – An active port close to West Coast shipping lanes, its distance from Shine Pit represented a prohibitive trucking-to-shipping operation along with the environmental costs of increased trucking.

Mats-Mats Bay – Located on the Olympic Peninsula side of Hood Canal and north of the Hood Canal Bridge, Mats-Mats Bay contained an active basalt quarry and a pier for loading quarried rock onto barges. However, water depths were adequate for only smaller barges and would have required dredging and/or expanded pier construction to achieve project objectives.

Transporting sand and gravel to Mats-Mats Bay would have required several miles of conveyor, and involved obtaining numerous private and public easements and/or crossings of environmentally sensitive areas, including

various creeks and streams. As an alternative to building a conveyor, trucking would have greatly increased area traffic and overwhelmed local and state roads, particularly in Mats-Mats' relatively high-density residential area.

Paradise Bay – This site was considered because of its location north of the Hood Canal Bridge. However, the area had a relatively high-density residential development, lacked deep-water access, and had a northern-facing, unprotected shoreline. The conveyor route would have involved obtaining numerous private and public easements and/or crossings of environmentally sensitive areas, including various creeks and streams.

North side of the Hood Canal Bridge and Shine “Tideflats” (also north of the bridge) – One alternative considered was constructing a conveyor route along SR 104 to a new pier north of and perpendicular to the Hood Canal Bridge western span. Numerous structural engineering issues were associated with attempting to incorporate a pier with the bridge, including the force requirements with loading a ship or barge at this location. Lack of adequate space for the pier, exposure to harsh weather, high currents, wave conditions, and the visual impact for people traveling over the bridge and/or living near the bridge would have been greater than those of the proposed pier site.

Waters adjacent to the beach at Shine Tideflats typically had high currents (10 to 12 knots). The beach was particularly exposed during storm and high tide conditions. This site would have required displacement of several small-lot residences, was highly visible to a large number of people, and was adjacent to a state parkland.

South Point – This location would have required construction of a shorter conveyor system (two miles vs. four miles) than the selected proposed pier site, connecting Shine Pit processing through commercial forestlands to the old ferry dock in the South Point (Bridgehaven) community. A newly constructed tunnel would have been constructed under county roads to emerge at the existing ferry dock location. Due to the deep draft at this site, a pier of approximately 50 feet long would have been required.

However, preliminary geology reviews of the high-bank bluff revealed that any structure (i.e. tunnel underground, conveyor on top, even residences) would most likely have caused a significant landslide. Within the immediate area, four recent landslides were apparent. In addition, the conveyor route would have required crossing wetlands and/or tributaries that made up the upper portion of Shine Creek and/or Manhattan Beach Creek.

Besides numerous environmental factors including the proximity to a well-established residential community in Bridgehaven and Trails End, this alternative became moot when WDOT re-purchased the property for use



Alternative Sites Considered

Figure 2-12
December 2006

Central Conveyer and Pier
Jefferson County, Washington

FIGURE 2-12: The applicant reported several alternative pier locations that were considered but eliminated due to a variety of factors, including distance, required trucking fuel cost (vs. a conveyor), inefficiencies, traffic impacts, residential development, near-shore habitats, unsuitable slopes and/or other environmental constraints.

during reconstruction of the Hood Canal Bridge. (Prior to considering the site, FHM had signed a purchase-and-sell agreement for the ferry dock site.)

Manhattan Beach – This site featured a shoreline almost entirely reachable by commercial forest lands and without significant wetland or stream crossings. However, diving surveys discovered extensive native eelgrass beds on the two waterfront parcels and foremost potential pier sites.

Dabob Bay – Located on the west side of the Coyle Peninsula, Dabob Bay was remote, deep and allowed for shoreline pier development with relatively few land use conflicts. However, conveyor routes to the shoreline would have required crossing high bluffs and steep slopes. Marine transportation routes would have extended 10 to 15 miles further south into Hood Canal, requiring barging and shipping in front of Kitsap Naval Base-Bangor’s Naval Operations Area. (Conversely, the applicant’s proposed pier site is located five miles north of Bangor’s Delta Pier and three miles north of Bangor’s northernmost boundary).

Squamish Harbor – This location was economically favorable, significantly reducing the length of the conveyor from Shine Pit to the shoreline. However, the potential conveyor route would have required crossing the upper portion of Shine Creek and/or Manhattan Beach Creek as well as several tributaries and feeder wetlands. While the wetland and stream impacts may have been mitigable, to reach adequate water depths a pier would have extended a mile or more offshore through the middle of Squamish Harbor and its populated community, dramatically increasing the visual and operational impacts.



The Dabob Bay alternative pier site would have required barging and shipping further south into Hood Canal and past Kitsap Naval Base-Bangor operations (shown).

2 4.3 PROPOSED SITE SELECTION

During the site analysis, it was deemed that the area south of South Point was the environmentally preferred alternative. FHM began to study the area in detail, bringing a multi-disciplinary team of established consulting firms and persons with specialized expertise to evaluate the area from environmental and engineering perspectives. During the study and design process, the conveyor and pier alignments were modified to minimize environmental impacts and avoid streams, wetland buffers and eelgrass beds.

Specifically, FHM reports that its proposed site was selected for the following reasons:

- The conveyor route and pier location had little existing development and use.
- It allowed for a conveyor route to be sited almost entirely on recently harvested private commercial forest lands.
- The remaining (shoreline) route would cross only private lands.
- The route avoided wetlands, significant stream crossings or impacts to designated Fish and Wildlife Habitat areas.
- Given the dynamics of the beach, a pier design wouldn't significantly interfere with the beach's natural sediment transport regime (littoral drift).
- It allowed for a north-south alignment and pier location that wouldn't incur biologically significant shading to native eelgrass beds.
- No native eelgrass beds would need to be removed.
- The prevailing wind patterns and tidal currents were conducive to berthing operations.

APPENDICES

DRAFT PRE-SCOPING DOCUMENT

**CENTRAL CONVEYOR AND PIER
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APPENDIX
A

PRELIMINARY DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

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ENVIRONMENTAL STUDIES COMPLETED

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CONTRIBUTORS

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PRELIMINARY LIST OF INTERESTED PARTIES

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STATE, FEDERAL AND TRIBAL GOVERNMENTS (TABLE)

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PROJECT DESCRIPTION

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FACTS SHEET

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NOTES



