

**DRAFT ENVIRONMENTAL IMPACT STATEMENT
SR 520 BRIDGE REPLACEMENT AND HOV PROGRAM**

MAY 2010

SR 520 Pontoon Construction Project

Social Elements Technical Memorandum



THE INFORMATION IN THIS REPORT IS ACCURATE; HOWEVER, THE PONTOON CONSTRUCTION PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT IS THE SOURCE OF THE MOST CURRENT PROJECT INFORMATION AND ANALYSIS.

SR 520 Pontoon Construction Project Draft Environmental Impact Statement

Social Elements Technical Memorandum

Prepared for

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Federal Highway Administration**

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Abbreviations and Acronyms

ADA	Americans with Disabilities Act
CTC	Concrete Technology Corporation, Inc.
EIS	Environmental Impact Statement
GIS	geographic information system
IDD #1	Industrial Development District #1
LEP	limited-English proficient
SR	State Route
USDOT	U.S. Department of Transportation
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation

1. Introduction

Why are social elements considered in an EIS?

The National Environmental Policy Act (42 United States Code 432) requires a systematic, interdisciplinary approach in considering environmental and community factors in decision-making because the social effects of transportation projects can be substantial and often play an important role in the quality of life for those who live in the communities that they travel through. To evaluate the costs and benefits associated with a transportation improvement, the Washington State Department of Transportation (WSDOT) analyzes how a project could affect the surrounding communities to ensure full compliance with relevant laws and regulations. This analysis takes into consideration laws and regulations that apply to minority, low-income, limited-English proficient (LEP), disabled, and elderly populations. Community factors include the cohesiveness of the neighborhoods; social, recreational, and civic elements; and established travel behaviors.

What are the laws and regulations that apply to the social elements analysis?

Applicable laws and regulations include the National Environmental Policy Act; Title VI of the Civil Rights Act of 1964; the Civil Rights Restoration Act of 1987; Executive Order 12898 Environmental Justice; Executive Order 13166 Limited English Proficiency; the Americans with Disabilities Act (ADA); the Age Discrimination Act of 1975; and the Transportation Equity Act.

This technical memorandum provides the information, as identified in Chapter 458 of the WSDOT *Environmental Procedures Manual* (WSDOT 2008), to analyze the project social effects, including those relating to environmental justice. Expected effects on public services and utilities are described in the Public Services and Utilities Technical Memorandum (WSDOT 2009a).

What are the key points of this technical memorandum?

WSDOT proposes building a casting basin facility at one of two alternative sites in the Grays Harbor area to manufacture large concrete floating bridge pontoons. These pontoons would be built to replace the floating portion of the Evergreen Point Bridge in the event of a catastrophic failure or to support the planned replacement of the bridge. The Concrete Technology Corporation, Inc. (CTC) casting basin in Tacoma may also be used primarily to build smaller pontoons while the Grays Harbor casting basin is being built. The completed pontoons would be moored at approved locations in Grays Harbor and/or in Puget Sound until needed.

The project would have the following effects on social elements:

- The project would not change social patterns or negatively affect community cohesion. In fact, the project would benefit the Grays Harbor County area by providing a new source of employment.

What are social elements?

As identified in Chapter 458 of the WSDOT EPM Social Elements to be analyzed can include Community Cohesion; Recreation; Regional and Community Growth; Services (education facilities, religious institutions, and government institutions); and Pedestrian, Bicyclist, and Transit Facilities.

- The project would not result in any adverse effects on regional and community growth, community resources, recreational facilities, or pedestrian, bicyclist, or transit facilities.
- The project would increase noise levels above the maximum allowable levels set by the Washington Administrative Code (WAC) for sensitive receptors north of the proposed Anderson & Middleton Alternative site. Construction activities, however, would be exempt. During operation, if appropriate mitigation measures were implemented, noise levels would fall beneath the maximum allowable level set by the WAC.
- Although the project would not exceed level of service or air quality thresholds, residents, transit riders, pedestrians, and bicyclists adjacent to the haul routes or walking, could be inconvenienced by noise, dust, and traffic associated with truck traffic along the potential haul routes.

The project would not result in any adverse effects that would cause disproportionately high and adverse effects on minority and/or low-income populations.

What are project alternatives?

The Pontoon Construction Project Draft Environmental Impact Statement (Draft EIS) evaluates two build alternatives that would involve constructing a new casting basin in Grays Harbor and one No Build Alternative. Two waterfront sites in the Grays Harbor area are being evaluated for the new casting basin facility:

- Anderson & Middleton property in Hoquiam
- Aberdeen Log Yard property in Aberdeen

The new Grays Harbor casting basin facility could produce all 33 pontoons needed for this project: 21 longitudinal pontoons (360 feet long by 75 feet wide), 10 supplemental stability pontoons (98 feet long by 60 feet wide), and 2 cross pontoons (240 feet long by 75 feet wide). To expedite pontoon construction, however, each build alternative could include using the existing Concrete Technology Corporation, Inc. (CTC) casting basin facility in Tacoma to build pontoons while the new casting basin facility at Grays Harbor is being constructed. If used, the CTC facility, which has a limited operations area, could build up to three longitudinal pontoons and up to ten supplemental stability pontoons.

WSDOT would float most of the completed pontoons built at the new casting basin facility out of the casting basin and tow them to a moorage location in the Grays Harbor area. The last pontoons built would be stored in the casting basin until needed. Any pontoons constructed at the CTC facility would be moored at existing marine berths in Puget Sound.

After the project is completed, the new casting basin would be available to produce additional pontoons needed for the planned Evergreen Point Bridge replacement, a component of the I-5

What is a casting basin facility?

Pontoons for this project would be built at a casting basin facility. The facility would consist of a casting basin (a large chamber in which pontoons are constructed, see the next text box for a more thorough description) and several supporting facilities, such as a batch plant to produce concrete, access roads, storage and laydown areas, office space for workers, and water treatment facilities.

to Medina: Bridge Replacement and High-Occupancy Vehicle (HOV) Project. Pontoons for other WSDOT bridge replacement projects in the future could also be produced at this facility. Each alternative is described below. For more details, see the Description of Alternatives and Construction Techniques Discipline Report (WSDOT 2009b), included as Appendix B to the Draft EIS.

Site Descriptions

Anderson & Middleton Alternative

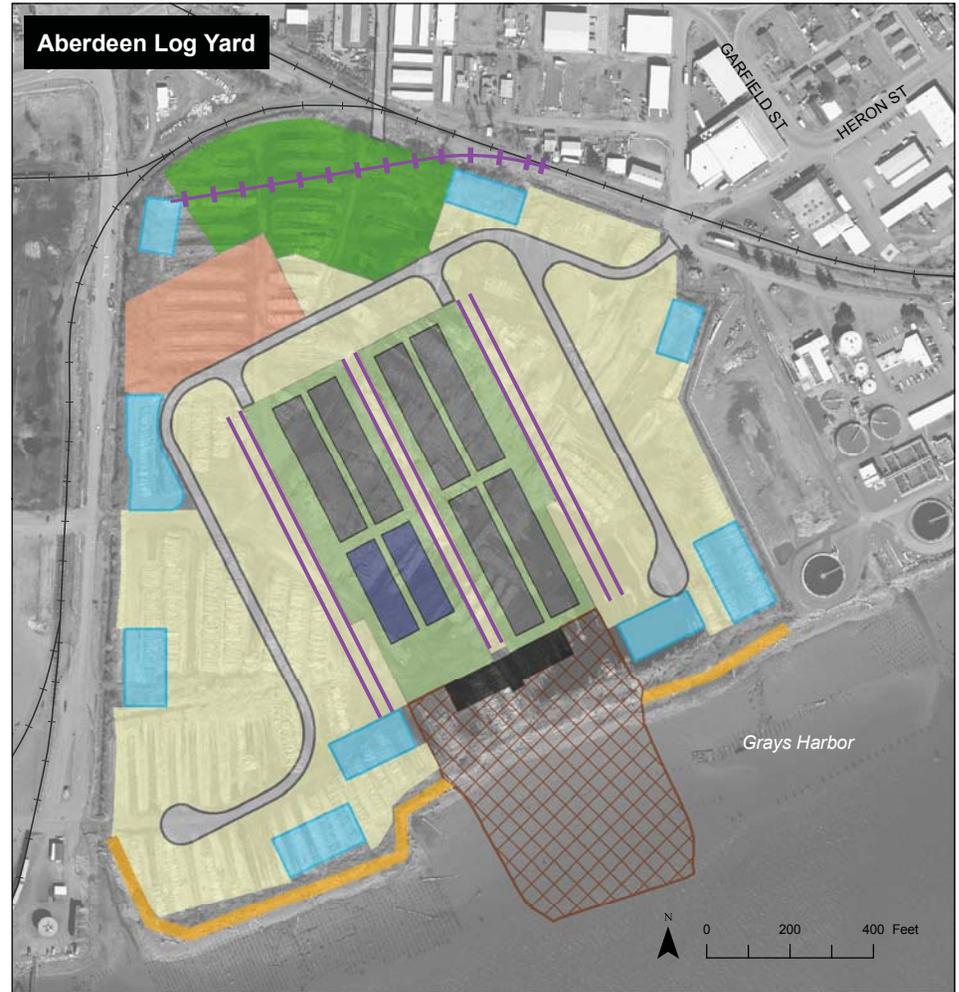
The 105-acre Anderson & Middleton Alternative site is on the north shore of Grays Harbor in Hoquiam, Washington (Exhibit 1). This generally flat property is privately owned and is zoned for industrial use. The site is surrounded by industrial maintenance shop buildings to the west, railroad tracks to the north, and vacant industrial property to the east; a rock berm borders the shoreline. The Anderson & Middleton site has no structures on it except for an existing small office building on the northern edge of the property. The site also has some gravel roads and an asphalt pad remaining from its former use as a log sorting yard. WSDOT would purchase 95 acres of this site for the project, and the casting basin and support facilities would occupy the eastern half of the site, amounting to approximately 55 acres.

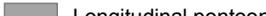
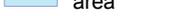
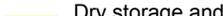
Historically this site has been used for lumber industry activities. In the early twentieth century there was a sawmill and other related facilities, such as machine shops and burners, west of what was then an extension of 8th Street. Over the next several decades, fill from harbor dredging and refuse accumulation increased the land area of the site. By the late 1960s, the former mill structures were all gone. Since then, the site has been used for timber storage.

Aberdeen Log Yard Alternative

The 51-acre Aberdeen Log Yard Alternative site lies on the north shore of Grays Harbor in Aberdeen, Washington, near the mouth of the Chehalis River (Exhibit 1). This generally flat site is zoned industrial and is currently owned and used for log storage by Weyerhaeuser Corporation. There are no structures on the site now but there is a system of unpaved access roads connecting to East Terminal Road to the west and State Street to the northeast. Immediately west of the site is paved Port of Grays Harbor industrially zoned property, the City of Aberdeen wastewater treatment plant borders the eastern boundary, and the Puget Sound & Pacific Railroad mainline and siding run along the northern boundary of the site. WSDOT would purchase all 51 acres, and the casting basin and support facilities would occupy the entire site.

Two sawmills operated on the site in the last century, but since 1971, the site has been used mostly for log storage. All former sawmill-related structures have been demolished. Between 1971 and 1981, the shoreline was extended to the south through backfilling with sediments dredged from the Chehalis River, accumulated wood waste, and other fill material.



-  Crane rail
-  Proposed rail spur
-  Existing railroad
-  CTC facility limits
-  Cross pontoon
-  Longitudinal pontoon
-  Water treatment area
-  Access road
-  Batch plant
-  Berm
-  Casting basin
-  Dry storage and laydown area
-  Gate
-  Launch channel
-  Office and parking

Source: WSDOT (2005, 2006) Aerial Photo, USDA-FSA (2006) Aerial Photo, Grays Harbor County (2006) GIS Data (Roads), Horizontal datum for all layers is State Plane Washington South NAD 83; vertical datum for layers is NAVD88.

Exhibit 1. Locations and Conceptual Layouts for Build Alternative Sites

Pontoon Construction Project



No Build Alternative

For the Pontoon Construction Project, the No Build Alternative is continued existing conditions and uses at all proposed alternative sites. Specifically, this means that WSDOT would not construct or store any pontoons—either at a new Grays Harbor facility or at the existing Tacoma CTC facility—needed to respond to a catastrophic failure of the Evergreen Point Bridge. As a result, any environmental effects resulting from the proposed project activities would not occur.

For this Draft EIS, WSDOT assumes that, if unused by this project, the alternative site properties would continue to be used as they are today: the Aberdeen Log Yard would remain an active log yard, the Anderson & Middleton site would remain largely inactive, and the CTC site would be used as a casting basin for other projects and clients. While either Grays Harbor site could be developed for new uses should this project not occur, the use of these properties has remained unchanged since the 1990s. Potential future uses for these two properties, other than our proposed project, are speculative and therefore not considered under the No Build Alternative.

Key Components of Both Build Alternatives

Both build alternatives would carry out the proposed action by constructing a casting basin in the Grays Harbor area. Use of the existing CTC facility in Tacoma to produce pontoons while the new casting basin is constructed could also occur.

Potential Use of the Existing CTC Casting Basin Facility

The existing CTC facility is adjacent to the Blair Waterway on the eastern edge of Commencement Bay in Tacoma (Exhibit 1). This casting basin is too small to accommodate the timely construction of the pontoons required for the Pontoon Construction Project, but WSDOT could use this facility to supplement pontoon construction at the larger casting basin proposed in the Grays Harbor area. The pontoons manufactured at the CTC facility would most likely be the smaller supplemental stability pontoons.

WSDOT would moor the pontoons built at the CTC facility at existing marine berths in Puget Sound, subject to availability.

What is a casting basin?

A casting basin is a construction facility built next to a navigable waterway that consists of a concrete slab built deep below ground level and surrounded by high concrete walls. The interior area of the casting basin provides a flat dry space where several pontoons can be constructed side by side at the same time. After the pontoons are completed, the basin is flooded. The basin walls contain the flood water, allowing the pontoons to float. When the pontoons are floating, a gate is opened and the pontoons are towed from the casting basin into navigable waters.

Proposed Grays Harbor Casting Basin

The design of the proposed Grays Harbor casting basin would be basically the same at both build alternative sites, with variations depending on site-specific features. (See the Description of Alternatives and Construction Techniques Discipline Report [WSDOT 2009b] for information on the casting basin conceptual design.) The casting basin would be positioned a few hundred feet from the shoreline and partitioned into two separate work

areas—called chambers—connected to the water by a single launch channel. The launch channel would consist of an onshore portion excavated between the casting basin and shoreline, a breach in the shoreline berm, and a dredged channel extending offshore to the federal navigation channel in Grays Harbor.

Up to four concrete pontoons could be cast and cured in each of the two chambers of the partitioned casting basin, allowing pontoon construction to be phased for efficiency. That is, while the second chamber is under construction, pontoon construction could be initiated in the first partitioned chamber as soon it was completed. Two reinforced floating concrete gates leading to each chamber would allow each to be independently flooded and drained, as well as control access to the launch channel.

Constructing a casting basin facility at either Grays Harbor build alternative site would require heavy construction activities to transform the vacant land into an industrial facility. Such activities include, but would not be limited to, the following:

- Grading (leveling) the site and excavating the casting basin
- Pile-driving to install support piles for the casting basin floor
- Paving onsite access roads
- Making multiple truck trips for hauling materials to and from the site
- Dewatering the soils during casting basin construction

All stormwater, process water, and groundwater collected onsite would be handled and treated in accordance with state water quality requirements and discharged to Grays Harbor. Project engineers are designing a water supply, distribution, and treatment system for each site to meet state standards.

Dewatering

WSDOT would install two different dewatering systems to remove groundwater from the casting basin work area at either build alternative site. Before and during casting basin construction, a temporary construction dewatering system would operate at the site. During pontoon-building operations and after the Pontoon Construction Project is completed (but while the site is still maintained by WSDOT), a permanent operation dewatering system would operate.

Operational Support Facilities

To support the use of the casting basin, each build alternative would include onsite operational support facilities such as an access road, a concrete batch plant, large laydown areas, water handling and treatment areas, office space, a rail spur, and a designated parking area for workers.

Pontoon Towing and Moorage

If WSDOT uses the existing CTC facility in Tacoma, it would moor the pontoons built there at existing marine berths in Puget Sound. Using these berths would be subject to availability, but there are several locations in the Puget Sound region that could accommodate this

project's needs. The first two cycles of eight pontoons manufactured at the new Grays Harbor casting basin facility would be towed from the casting basin and moored in the Grays Harbor area outside of navigation channels. The last construction cycle of pontoons could be stored in the dry casting basin behind the closed gate.

For the pontoons to be moored in the Grays Harbor area, there are several existing berths that WSDOT could lease for pontoon moorage, if available when needed. In addition, WSDOT has identified another potential moorage location—open water moorage in Grays Harbor. Please see the Description of Alternatives and Construction Techniques Discipline Report (WSDOT 2009b) for more information on these potential moorage locations.

The constructed pontoons would be stored together until they are needed to replace the Evergreen Point Bridge in the event of a catastrophic failure, and they would be identified with navigation lighting in compliance with U.S. Coast Guard requirements.

Construction Schedule

If WSDOT uses the existing CTC facility, pontoon construction would take 2 years there to complete. WSDOT would start site development for the new Grays Harbor casting basin facility about the same time pontoon construction begins at the CTC facility. For the Grays Harbor facility, casting basin construction would take 2 years, as would pontoon construction. In total, overall pontoon project construction would span 4 years.

WSDOT anticipates that it would take approximately 6 to 9 months to complete a pontoon construction cycle at either the existing Tacoma facility or at the new Grays Harbor facility. The new Grays Harbor facility could produce eight pontoons during one cycle; as a result, two and a half pontoon construction cycles would be required to produce 20 pontoons. At the existing CTC facility, five supplemental stability pontoons could be constructed during each pontoon construction cycle, and one longitudinal pontoon could be constructed during a cycle. As a result, three construction cycles would be needed to produce ten supplemental stability pontoons and one longitudinal pontoon.

How would use of the CTC site affect the social elements?

The CTC site is located within approximately 3 square miles of land zoned as an industrial center on the Blair Waterway in the City of Tacoma, Pierce County, Washington. The area is associated with the Port of Tacoma, one of the largest container port in North America, covering more than 2,400 acres. The CTC site is a fully constructed facility that is routinely used for industrial activities, including building pontoons. Exhibit 1 shows the CTC site location. The analyst applied a one-quarter-mile radius around the site as well and considered the uses immediately adjacent to the haul route at the study area because this area is most likely to be affected by project operation. The closest residential properties are approximately one-third mile to the north and across the Hylebos Waterway, and this study area contains no social elements.

No construction, operation, or long-term effects of the project on social elements or minority or low-income populations would be associated with the CTC site because it is already a fully operational facility located in an industrial setting, the haul route to and from the site is already characterized by heavy truck traffic, and social elements are not present within the study area. WSDOT's proposed use of this site to build pontoons would be consistent with the current industrial purpose of the site; therefore, it would not produce significant, unavoidable effects on any social element or minority or low-income population. The pontoons built at the CTC casting basin would be moored at existing marine berths in Puget Sound, where social elements are not present and, therefore, negative effects on social elements are not anticipated. Because the CTC site is a fully operational facility in an industrial location, no social mitigation is proposed or required in association with WSDOT's use of the CTC casting basin facility to build pontoons.

What types of outreach were used to engage the public?

WSDOT developed the Coordination Plan for Agency, Tribal, and Public Involvement (WSDOT 2009c) to define the process by which WSDOT communicates information about the proposed project to the targeted audiences. The plan also identifies how input from targeted audiences is solicited and considered. WSDOT has used and will continue to use the following methods to reach the targeted audiences and provide information on the proposed project:

Who are the targeted audiences for this project?

The targeted audiences include lead agencies, cooperating and participating agencies, the tribes, and the public.

- Community briefings to interested community groups
- Public hearings and open houses at key milestones throughout the project
- Fact sheets, including translated versions, distributed at public outreach events and also made accessible on the project Web site
- Advertisements, flyers, and postcards to advertise meetings and other project events
- A project Web site with information and a link to allow comments to be emailed to WSDOT
- A mailing list and comment database that will be maintained throughout the project
- Coordination with local Grays Harbor media to notify the public about opportunities for involvement

All public meetings have been and will be held in facilities that comply with Americans with Disabilities Act (ADA) and have adequate parking. At each of the public meetings, WSDOT personnel are available to answer questions and present information either in formal presentations or at individual stations with informational displays.

WSDOT has held two project scoping meetings, one in early 2008 and another in early 2009. WSDOT has used numerous methods to notify interested parties, including mailing flyers to

area residents, providing posters in English and Spanish, publishing display advertisements in various newspapers, sending email messages, and mentioning the project during radio interviews. Overall, the public has expressed its support for the project because of the job opportunities that would be provided. WSDOT held another scoping period from mid-March to mid-April 2009, seeking public comment on a proposal to narrow the list of potential pontoon construction sites in Grays Harbor from the three sites that were under consideration to the two sites being analyzed in the EIS.

What is low-income?

A person whose median household income is at or below the Department of Health and Human Services poverty guidelines (for that size of household) (U.S. Department of Transportation [USDOT] Order 5610.2, Appendix 1.b).

What specific public involvement activities have been targeted to reach minority and low-income populations?

Project public outreach included all populations and methods to engage the minority and low-income populations in the public involvement process. WSDOT analyzed 2000 U.S. Census data to determine which under-represented communities are in or near the project area.

Specific outreach to minority and low-income populations has included the following approaches:

- Involved and worked with trusted community leaders of existing community, minority, and low-income organizations.
- Translated project materials and provided translators at meetings, as needed.
- Provided project information to and coordinated information sharing with local job resources, community service organizations, and low-income populations.
- Provided project information to and worked with social institutions located near proposed haul routes, such as community centers, food banks, and transitional housing facilities.

Acting on community leader suggestions, posters announcing the public scoping meetings were translated into Spanish and distributed at community locations including City Hall at Aberdeen and Hoquiam, area elementary and high schools, area restaurants, libraries, and the Grays Harbor YMCA.

The posters also provide information to enable interested individuals to request language interpretation services. To

What is the threshold for LEP populations?

If demographics indicate that 5% or 1,000 persons or more in an area (generally by census block group) are limited-English proficient, project materials should be translated into that language.

What is a minority?

A minority is a person who meets the following criteria:

- Black (a person having origins in any of the black racial groups of Africa)
- Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or the Spanish culture or origin, regardless of race)
- Asian (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands)
- American Indian or Alaskan Native (a person having origins in any of the original peoples of North America and who maintains cultural identification through tribal affiliation or community recognition)

(U.S. Department of Transportation [USDOT] Order 5610.2, Appendix 1.c)

date, requests for interpreters have not been made. An environmental fact sheet has also been translated into Spanish and distributed at various public outreach events.

Because Native Americans are a minority population, tribal coordination is part of the project's targeted outreach. WSDOT Executive Order E 1025.00, signed in 2003, directs WSDOT employees to consult with tribes that have ancestral homelands within Washington state boundaries, including those with reservations located outside of the state, on all decisions that may affect tribal rights and interests. Because the proposed project may affect natural and cultural resources that are of interest to the tribes, WSDOT will consult with the tribes to mitigate any effects and address tribal concerns.

WSDOT formally invited the following tribes to participate in the project environmental review: the Confederated Tribes of the Chehalis Reservation, the Hoh Tribe, the Quileute Tribe, the Quinault Indian Nation, the Shoalwater Bay Tribe, the Skokomish Tribal Nation, and the Squaxin Island Tribe. The Quinault Indian Nation formally accepted participating agency status in January 2008. Other tribes did not provide formal correspondence declining or accepting participation. WSDOT encouraged tribes to participate in the monthly meetings held with other participating and cooperating agencies and provided them with all meeting materials.

Detailed summaries of feedback from scoping, public outreach, and tribal coordination can be found in the Coordination Plan for Agency, Tribal, and Public Involvement, Pontoon Construction Project (WSDOT 2009c). Key messages from public outreach include:

- Strong public support for the pontoon project
- Ensure pontoon compatibility with all bridge configurations
- Monitor the possibility of negative effects on the natural environment
- Consider traffic and noise effects

Tribes expressed particular interest in potential cultural resources discoveries, fisheries and habitat effects, wetland loss, moorage effects, and mitigation opportunities. In addition, tribes provided the following guidance and comments::

- Engage in a government-to-government process
- Conduct a thorough environmental assessment
- Explore potential opportunities to employ tribal members
- Explore sweetgrass restoration opportunities

2. Affected Environment

This section describes the social elements in the study area associated with the Anderson & Middleton site and the Aberdeen Log Yard site (Exhibit 2) and the haul routes to both sites. Social elements include community cohesion; population characteristics (including LEP populations); environmental justice populations (minority and low-income populations); regional and community growth; community resources; recreational resources; and

pedestrian, bicyclist, and transit resources. The study area for the project was defined as the area within a one-quarter-mile radius of each alternative site and the area directly adjacent to the potential haul routes. This area was designated for investigating social and environmental effects because it is the area that would most likely be affected by proposed project construction and operation.

How did WSDOT collect the information about social elements?

The analyst collected information from federal, state, and local sources, including demographic data from the U.S. Census Bureau, the Washington State Office of Financial Management, and the National Center for Education Statistics. The analyst used comprehensive plans, relevant Web sites, a site visit, and geographic information system (GIS) and other maps to identify community resources; recreation facilities; and pedestrian, bicyclist, and transit facilities in the study area and adjacent to the haul routes. The analyst also reviewed the project's public involvement plan to identify the outreach strategies for keeping the public informed about the project.

The analyst assessed the study area's demographic characteristics and social elements, including LEP populations, within a one-quarter-mile radius around the project sites, as shown on Exhibit 2, and the area adjacent to the potential haul routes. To analyze the population characteristics relevant to environmental justice (minority and low-income populations), the analyst identified Census Tract Block Groups and Census Blocks within the one-quarter-mile radius of the sites and adjacent to the potential haul routes and collected census data.

Because a number of truck trips are currently projected for constructing and operating the Anderson & Middleton and Aberdeen Log Yard alternatives, the analyst identified the social elements directly adjacent to the potential truck haul routes. The project's potential haul routes (Exhibit 2) would primarily be highways and streets within industrial and commercial areas of Hoquiam and Aberdeen. The haul routes are already used by trucks going to the industrial areas of both cities and include state highways that are major transportation routes serving the Grays Harbor County area. The haul route for either alternative site would use either sections of West State Street or sections of State Route (SR) 101 and SR 12 in Aberdeen, known locally as West Wishkah Street and West Heron Street. These sections of the potential haul routes are associated primarily with commercial and industrial land uses.

The Aberdeen Log Yard haul route would continue straight along West Wishkah Street to access the site. To exit the site, trucks would use West Heron Street to connect back to West State Street or to the SR 101 and SR 12 corridor, depending on the haul route and destination.

The potential haul route for the Anderson & Middleton site would follow the same haul route for the Aberdeen Log Yard, then travel along Port Industrial Road and connect to SR 101, then use portions of SR 109, locally known as Emerson Avenue, and then proceed from SR 109 to the Anderson & Middleton Alternative site along industrial area roadways.



Source: USFWS (2004) GIS Data (Grays Harbor National Wildlife Refuge) Grays Harbor County (2007) GIS Data (Point of Interest, Park, and City Limit), Grays Harbor County (2006) GIS Data (Waterbody and Street). Horizontal datum for all layers is State Plane Washington South NAD 83; vertical datum for layers is NAVD88.



- Education facility
- Government institution
- Religious facility
- Social institution
- Proposed project haul route common to all project sites
- Proposed project haul route: Aberdeen Log Yard
- Proposed project haul route: Anderson & Middleton
- Grays Harbor National Wildlife Refuge
- Park
- Study area
- Build Alternative Site
- City limits

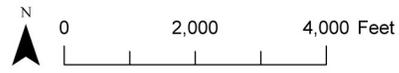


Exhibit 2. Social Elements
 Pontoon Construction Project

Washington State Department of Transportation

In addition to this route, another potential route would use the SR 101 corridor through Hoquiam. This corridor, locally referred to as West Sumner Avenue and West Simpson Avenue (a one-way couplet), is associated with commercial and residential land uses. Trucks would follow the same route described above upon reaching SR 109. Land uses around Emerson Avenue are primarily residential and public schools. The haul route would proceed from SR 109 to the Anderson & Middleton Alternative site along industrial area roadways.

What are the community cohesion characteristics of the study areas?

Anderson & Middleton Alternative

The Anderson & Middleton site is located in the City of Hoquiam in Grays Harbor County. Historically, the surrounding area was used for sawmills, canneries, and shipbuilding facilities. The site once included a sawmill and recently has been used for timber storage. Presently, the project vicinity is still industrial and provides employment. However, because the land is zoned industrial, no one lives in the immediate area. The Puget Sound & Pacific Railroad right-of-way



8th Street in Hoquiam, main gate of Anderson & Middleton property in the distance.

separates the industrial setting of the proposed project site from the downtown Hoquiam area, which provides services and includes housing. The right-of-way acts as a boundary between the two separate and distinct portions of the study area. The study area to the north consists of primarily commercial and residential development. The residential development consists primarily of older, single-family residential buildings. The downtown area has visible ties to Hoquiam's past, including the Seventh Street Theater, which is listed on the National Register of Historic Places. More information on the history and historic sites in the Hoquiam area is presented in the Cultural Resources Discipline Report (WSDOT 2009d). As described under the heading, *What are the community resources in the study area?*, many religious facilities, commercial services, and government resources (for example, the post office and the library) provide places for residents to gather and interact with one another. In addition, businesses such as coffee shops, provide residents with opportunities to interact. Sidewalks on many downtown Hoquiam streets and pocket parks and riverfront trails in and just beyond the study area limits are also easily accessed by area residents.

Hoquiam is well connected to the surrounding area and beyond by SR 101, SR 109, and SR 12. These state routes provide the primary linkages to and from the study area and

communities beyond, both within Grays Harbor County and the Puget Sound region. SR 101, the area's primary travel corridor, may be used as a haul route. The local street layout in the downtown area and next to SR 101 is a grid system, which provides a network for drivers to bypass the main arterial and access the many community resources in the area. As previously mentioned, the potential haul route along Port Industrial Road would travel through primarily industrial land uses, which would transition to residential land uses in the portions along SR 101 and SR 109 through Hoquiam.

Aberdeen Log Yard Alternative

The Aberdeen Log Yard Alternative is located in the City of Aberdeen in Grays Harbor County. Aberdeen is directly east of Hoquiam and shares the same history as described in the discussion of the Anderson & Middleton site. Like the Anderson & Middleton site, Aberdeen Log Yard was associated with the timber industry in the past and has been used more recently for timber storage. The Puget Sound & Pacific Railroad also acts as a boundary between the industrial-related land uses and



Heron Street, looking north from Aberdeen Log Yard property.

the residential area to the north. Unlike the Anderson & Middleton site, the area north of the Aberdeen Log Yard mostly consists of single-family residences, with no community resources or gathering places, such as religious institutions, for the residents to interact with one another. This area also has a grid street system, providing local linkages and access to the facilities outside the study area. The potential haul route for this alternative is along West State, West Wishkah, and West Heron Streets and is much shorter than the route designated for the Anderson & Middleton Alternative, traversing only a portion of Aberdeen along the same arterials as the Anderson & Middleton route before continuing on local streets to the project site (Exhibit 2).

What are the population characteristics of the study area and how are they projected to grow?

The analyst used U.S. Census Tract Block Group data within the study area boundaries of the two alternatives and the areas adjacent to the potential haul routes (Exhibit 2). The analyst compared study area population characteristics with those of the larger geographic areas surrounding the proposed alternatives (Hoquiam, Aberdeen, and Grays Harbor County).

Anderson & Middleton Alternative

As indicated in Exhibit 3, residents in this study area tend to have a higher median age, are more likely to be over the age of 65, and have smaller household sizes than the larger geographic areas of Hoquiam and Grays Harbor County. The study area also contains a greater percentage of residents who rent their homes, have a lower median household income, and have no vehicle. These factors may indicate that the study area's residents depend on transit and other community resources (for example, food banks and thrift stores). As described under the heading,

What are the community resources in the study area?, many community resources in the study area, including along the Hoquiam portion of the potential Anderson & Middleton haul route, provide services to low-income residents. Combined with the higher proportion of lower median income, renter-occupied housing, and households at or below the poverty level, this may indicate that much of the disabled population cannot work and is, therefore, low-income and more dependent. The minority and LEP populations in the study area are similar to those in Hoquiam and Grays Harbor County.

As shown in Exhibit 4, Hoquiam's population has decreased by 3.3 percent (302 residents) since 2000. This decrease is probably a result of declines in the resource-based industries of forestry and fishing. In 2000, Hoquiam represented approximately 13.5 percent of the population of Grays Harbor County, but in 2008, it represented only 12.4 percent. Although the population of Grays Harbor County has increased, the growth has been small. Over the last 8 years, the population increased by 3,706 residents, an average annual growth rate of less than 1 percent.

Anderson & Middleton Alternative Haul Routes

The information in Exhibit 3 reflects the populations that may live anywhere within the Census Block Groups that the haul routes travel through and not the populations residing adjacent to the haul route where any effects would occur. Because of the limitations with the census data it is difficult to understand what specific local population characteristics are along the haul route. Although, a windshield survey indicates that the populations are similar to the general population characteristics Hoquiam and Grays Harbor County. Like the site study area, it appears that a slightly higher population of residents over 65, renters, possibly lower-income, live in the homes directly on the haul route. The Land Use Technical Memorandum (WSDOT 2009e) states that homes along the haul route are legal, non-conforming residences in a commercial area and are not generally allowed to make improvements, and that could also be the reason for the appearance of those areas.

Information under the heading, *What are the minority and low-income population characteristics of the study areas?*, includes population statistics because minority data are available at the Census Block level.

What is a Census Tract Block Group?

A subdivision of a Census Tract, a Block Group consists of all the blocks within a Census Tract with the same beginning number. In urban areas, a Block Group typically encompasses two to four city blocks.

EXHIBIT 3
Population Characteristics

Characteristic	Anderson & Middleton Study Area	Anderson & Middleton Haul Routes	Hoquiam	Aberdeen Log Yard Study Area	Aberdeen Log Yard Haul Routes	Aberdeen	Grays Harbor County
Population	1,303	14,013	9,097	2,490	3,603	16,461	67,194
Median age	39.9	33.8	36.1	31.6	31.6	34.9	38.8
People over 65 years of age	331 (25.4%)	2,013 (14.4%)	1,393 (15.3%)	333 (13.4%)	455 (12.6%)	2,300 (14.0%)	10,321 (15.4%)
Owner-occupied housing	28.4%	56%	57.3%	55.8%	45%	58.4%	69.0%
Renter-occupied housing	71.6%	44%	42.7%	44.2%	55%	41.6%	31.0%
Median household income	\$21,250	\$28,750	\$29,658	\$24,702	\$19,250	\$30,683	\$34,160
Households at or below poverty level	154 (23.7%)	1,073 (19.2%)	652 (18.0%)	250 (27.0%)	412 (28.2%)	1,321 (20.0%)	4,052 (15.1%)
Individuals at or below poverty level (population for whom poverty status is determined)	253 (19.5%)	2,849 (20.5%)	1,695 (19.0%)	823 (33.4%)	1,202 (32%)	3,589 (22.2%)	10,668 (16.1%)
Average household size	2.01	2.48	2.47	2.54	2.38	2.49	2.48
Households with no vehicle	244 (36.9%)	1,025 (18.2%)	595 (16.4%)	173 (18.3%)	425 (28%)	1,029 (15.8%)	2,563 (9.6%)
Persons with disability (population 5 years and over)	492 (40.4%)	3,453 (26.7%)	2,439 (29.2%)	548 (24.7%)	905 (26.4%)	3,659 (24.3%)	15,053 (24.1%)
LEP populations (population 5 years and over)	25 (2.0%)	395 (3.0%)	140 (1.7%)	173 (7.8%)	257 (7.5%)	555 (3.6%)	1,061 (1.7%)
Minority Population	108 (10.2%) ^a	1,118 (16%) ^a	1,233 (13.5%)	140 (15.7%) ^a	246 (21.4%) ^a	2,931 (17.8%)	9,082 (13.5%)

Source: U.S. Census Bureau (2000).

^aMinority population is based on Census Block information

EXHIBIT 4
Population Forecast

Area	2000 Census	2008	Percent Change (2000 to 2008)
Hoquiam	9,097	8,795	-3.3%
Aberdeen	16,461	16,460	0%
Grays Harbor County	67,194	70,900	5.2%

Sources: U.S. Census Bureau (2000); Washington State Office of Financial Management (2009).

Aberdeen Log Yard Alternative

As indicated by the information in Exhibit 3, the Aberdeen Log Yard study area population has a lower median age, a lower median household income, a higher percentage of households and individuals at or below the poverty level, and a higher percentage of households with no vehicles when compared to the larger geographic areas of Aberdeen and Grays Harbor County. This may indicate a higher percentage of households with residents who depend more on transit and community resources. The average household size and percentage of the population that includes persons with a disability is about the same as in the larger areas. This area has a greater percentage of renter-occupied housing and a smaller percentage of owner-occupied housing than the surrounding larger areas. A higher percentage of the study area population is considered minority and LEP than in the larger areas. The LEP population primarily comprises Spanish-speaking residents who reside in the residential areas north of the Aberdeen Log Yard.

Aberdeen is the largest city in Grays Harbor County. As shown in Exhibit 4, the population has remained constant since 2000, in contrast to Hoquiam's slight decline of 3.3 percent. In 2000, Aberdeen represented approximately 24.5 percent of the population of Grays Harbor County, and in 2008 it represented 23.2 percent.

Anderson Log Yard Alternative Haul Routes

The information in Exhibit 3 reflects the populations that may live anywhere within the Census Block Groups that the potential haul routes travel through and not the populations residing adjacent to the haul route where any effects would occur. Because of Census data limitations, it can be difficult to identify who would be affected along the haul route. However, information under the heading, *What are the minority and low-income population characteristics of the study areas?*, includes population statistics because minority population data are available at the Census Block level.

What are the minority and low-income population characteristics of the study areas?

The analyst reviewed 2000 Census data to identify minority and low-income populations. The analyst used GIS software to map the Census Block data for minority population concentrations and Census Block Group data for low-income population concentrations. The

exhibits show four different percentage ranges used to identify the distribution of minority and low-income population concentrations in the study area. The analyst overlaid the minority and low-income population concentrations with Census Blocks that contain zero population to identify the areas next to the project sites with no residents. Exhibits 5 and 6 illustrate the locations and population concentrations of the Census Blocks and Census Block Groups.

What is a minority population?

Any readily identifiable group of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed USDOT program, policy, or activity (USDOT Order 5610.2, Appendix 1.e)

Because the 2000 Census data are almost 10 years old, population characteristics could have changed. Therefore, the analyst also reviewed recent public elementary school data for schools in the Hoquiam School District and Aberdeen School District, which have attendance boundaries that overlap the study areas. Although the students could live anywhere within a school's attendance boundary, the information is more recent than 2000 Census data and could indicate changing population characteristics.

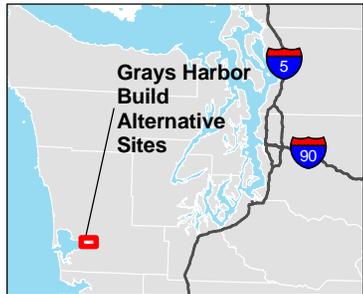
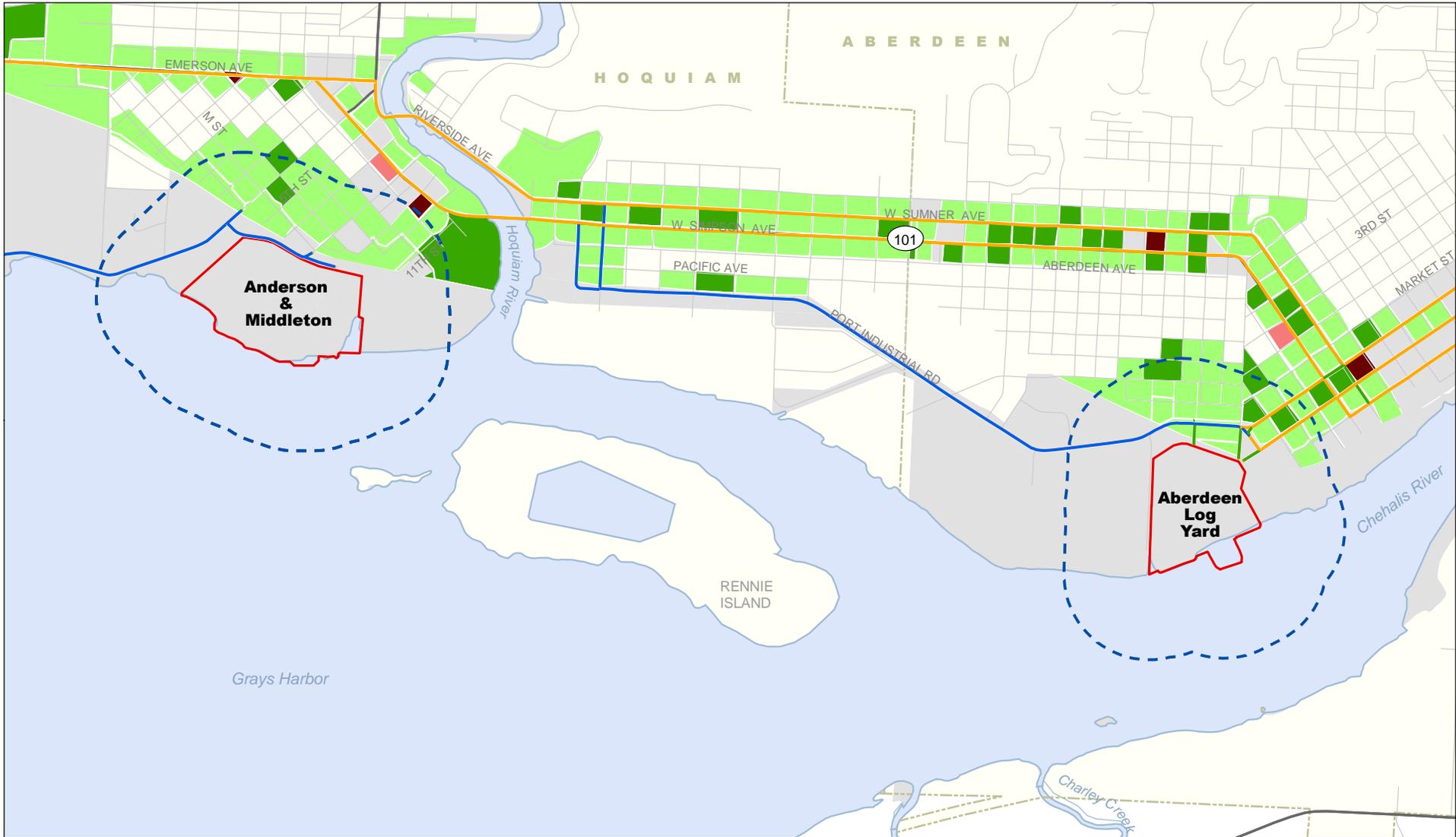
Anderson & Middleton Alternative

The Census Block data for the area within one-quarter mile of the site indicate that the majority of the 27 Census Blocks contain minority concentrations of less than 10 percent. One Census Block Group in the study area has a total population of five residents, all reported as minority members. Overall, the minority population within the Census Blocks in the study area represents 10.2 percent (108 residents) of the total population, which is lower than the concentrations in Hoquiam (13.6 percent) and Grays Harbor County (13.6 percent). As illustrated in Exhibit 5, the area surrounding the project site contains a number of Census Blocks with zero population. The low-income population concentration of the Census Block Group in the study area is 19.5 percent (253 residents), similar to Hoquiam (19.0 percent) and higher than for Grays Harbor County (16.1 percent).

What is a low-income population?

Any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed USDOT program, policy, or activity. (USDOT Order 5610.2, Appendix 1.d).

As described under the heading, *What are the physical characteristics of the study areas?*, the potential haul routes for the Anderson & Middleton alternative would use state highways or a route following Port Industrial Road. As illustrated in Exhibit 5, the majority of the Census Blocks contain minority populations below 25 percent of the total, and the haul route that would use Port Industrial Road contains many Census Blocks with zero population. Overall, the minority population of the Census Blocks adjacent to the haul routes represents 16 percent (1,117 residents) of the total population. Exhibit 6 identifies the Census Block Groups adjacent to the haul routes. Most of the block groups contain low-income populations below 25 percent of total. The Census Block Groups that the haul route travels through contain low-income populations of 20.5 percent (2,849 residents). However, the Census Block Groups extend beyond the haul routes, and the numbers may not reflect those who live adjacent to the haul route who might be affected by project construction and operation.



Minority population

- 0% to 25%
- 25% to 50%
- 50% to 75%
- 75% to 100%
- Block group with no population

- Proposed project haul route common to all project sites
- Proposed project haul route: Aberdeen Log Yard
- Proposed project haul route: Anderson & Middleton
- 1/4-mile buffer of build alternative site location
- Build Alternative Site
- City limits



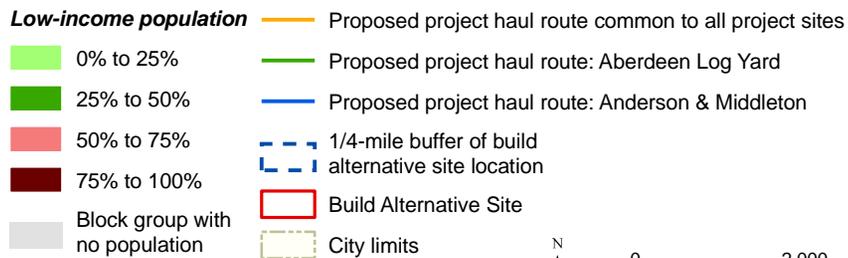
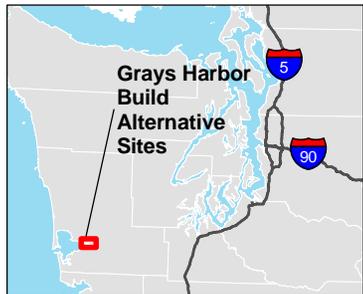
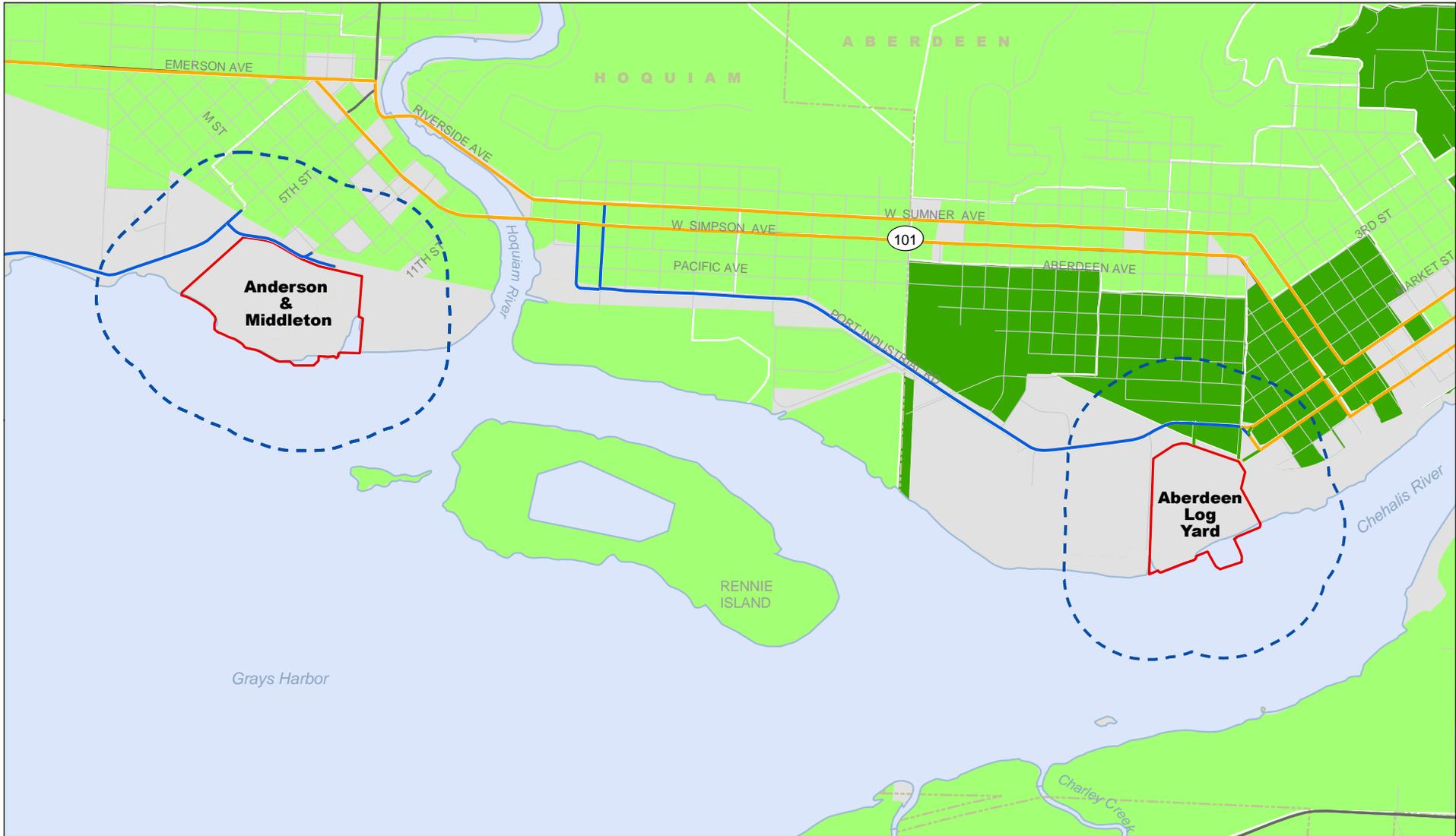
Source: U.S. Census (2000) Demographic Data, Grays Harbor County (2006) GIS Data (Waterbody and Street), Grays Harbor County (2007) GIS Data (City Limits). Horizontal datum for all layers is State Plane Washington South NAD 83; vertical datum for layers is NAVD88.

Exhibit 5. Minority Population

Pontoon Construction Project



Washington State Department of Transportation



Source: U.S. Census (2000) Demographic Data, Grays Harbor County (2006) GIS Data (Waterbody and Street), Grays Harbor County (2007) GIS Data (City Limits). Horizontal datum for all layers is State Plane Washington South NAD 83; vertical datum for layers is NAVD88.

Exhibit 6. Low-Income Population

Pontoon Construction Project



**Washington State
Department of Transportation**

Where the haul route uses local roadways to access the Anderson & Middleton Alternative, the adjacent areas are associated with industrial uses and have no residents.

Two Hoquiam elementary schools have attendance boundaries within the study area. According to school year 2006-2007 information, 524 students attended the two schools during that year. Of these 524 students, approximately 24 percent were minority and approximately 66 percent were eligible for the free/reduced-price lunch programs, which indicates low-income households. In addition, approximately 15 percent of the students were Hispanic, possibly indicating a need to translate project materials into Spanish. The school information indicates that minority and low-income populations have increased since the 2000 Census.

Aberdeen Log Yard Alternative

According to the Census Block data, the majority of the 32 Census Blocks in the Aberdeen Log Yard study area contain minority population concentrations of less than 25 percent. Overall, the minority population of the Census Blocks in study area represents 15.7 percent (140 residents) of the total population, which is lower than the minority population percentage for Aberdeen (17.6 percent) and higher than that for Grays Harbor County (13.6 percent). As shown on Exhibit 6, the area surrounding the project site consists of Census Blocks with zero population. The low-income population of the study area is 33.4 percent (823 residents), which is higher than for both Aberdeen (22.2 percent) and Grays Harbor County (16.1 percent).

As described under the heading, *What are the physical characteristics of the study areas?*, the Aberdeen Log Yard haul routes would use local or state highways that travel through areas primarily associated with commercial and industrial related land uses. As illustrated in Exhibit 5, the majority of the Census Blocks contain minority populations below 25 percent of the total population. Overall, the minority population of the Census Blocks adjacent to the haul routes represents 21.4 percent (246 residents) of the total population. Exhibit 6 identifies the Census Block Groups adjacent to the haul routes, and the majority of the block groups contain low-income population concentrations between 25 to 50 percent of total. The Census Block Groups that the potential haul route travels through contain low-income population concentrations of 32 percent (1,202 residents). However, the Census Block Groups extend beyond the haul routes, and the numbers may not reflect those who live adjacent to the haul route who may be affected by project construction and operation.

One Aberdeen School District elementary school has attendance boundaries that overlap the Aberdeen Log Yard Alternative study area. According to school year 2006-2007 information, 417 students attended the school during that year. About 39 percent were minority, and approximately 75 percent are eligible for the free/reduced-price lunch programs. In addition, about 29 percent of the students were Hispanic, possibly indicating a need to translate project materials into Spanish. According to the school information, the minority and low-income segments of the populations increased since the 2000 Census.

What are the community resources in the study areas?

Community resources include educational facilities and social, religious, and government institutions. No cemeteries, hospitals, or defense installations are located in either alternative’s study area or next to the potential haul routes.

Anderson & Middleton Alternative

Diverse community resources occupy the study area and along the haul route designated for the Anderson & Middleton Alternative, as discussed in the following sections.

Education Facilities

No schools (public, post-secondary, or private) are located within the Anderson & Middleton study area. However, three schools operated by the Hoquiam School District are adjacent to the potential haul routes. These schools are shown on Exhibit 2 and listed in Exhibit 7. In addition to the schools, the Hoquiam School District administrative facilities are located adjacent to the potential haul routes at 305 Simpson Avenue.

EXHIBIT 7

Education Facilities in the Anderson & Middleton Study Area or Next to Haul Route

Name	Location	Grades	Next to Haul Route
Emerson Grade School	101 West Emerson Avenue	PK and 1	Yes
Central Elementary School	310 Simpson Avenue	2 through 6	Yes
Hoquiam High School	501 West Emerson Avenue	9 through 12	Yes

PK = prekindergarten

Source: Hoquiam School District 2009.

Social Institutions

Social institutions include facilities such as food banks, community centers, and transitional housing. Social institutions located in the Anderson & Middleton study area or adjacent to a potential haul route are shown on Exhibit 2 and listed in Exhibit 8.

EXHIBIT 8

Social Institutions in the Anderson & Middleton Study Area or Next to Haul Route

Name	Location	Services	Next to Haul Route
Channel Point Village	907 K Street	Assisted living facilities	No
Hoquiam Food and Clothing Bank	720 K Street	Food bank and clothing bank	No
Harbor Manor Apartments	411 10th Street	Low-income housing for senior and disabled residents	No
Emerson Manor	703 Simpson Avenue	Low-income housing for senior and disabled residents; also the location of the Hoquiam Senior Center	Yes

EXHIBIT 8

Social Institutions in the Anderson & Middleton Study Area or Next to Haul Route

Name	Location	Services	Next to Haul Route
YMCA of Grays Harbor	2500 Simpson Avenue	Programs for residents, including health and fitness, child care, and senior-companion programs	Yes
Grays Harbor Public Health and Social Service Department	2109 Sumner Avenue	Information and access to a number of services, including women’s health and mothers and children health care and nutrition programs	Yes
Grays Harbor Emergency Medical Services	2421 Sumner Avenue	Classes to train and coordinate all pre-hospital providers, coordinate public first aid classes as needed, and provide community outreach including distributing car seats to low-income families	Yes
Salvation Army Family Store	118 West Wishkah Street	Thrift store and donation center	Yes
Aberdeen Community Services Office	415 West Wishkah Street	Services, including child support, food programs, and medical assistance	Yes
Union Gospel Mission	405 East Heron Street	Services, including a men’s shelter, food program, showers, and a clothing store	Yes

Source: Grays Harbor County GIS 2007, Aptfinder.org 2009, and Union Gospel Mission of Grays Harbor 2009.

Religious Institutions

The eleven identified religious institutions in the Anderson & Middleton study area or next to a potential haul route are shown on Exhibit 2 and listed in Exhibit 9. Religious institutions tend to be gathering places where neighborhood residents have the opportunity to interact with one another.



Saron Lutheran Church, Hoquiam

Government Institutions

Government institutions are facilities that federal, state, county, or city governments own and operate, and can include city halls, courthouses, post offices, and libraries. Government institutions in the Anderson & Middleton study area, which are illustrated on Exhibit 2, include Hoquiam City Hall (located at 609 Eighth Street), the U.S. Post Office (located at 620 Eighth Street), and the Hoquiam Timberland Library (located at 420 Seventh Street). Post offices and libraries are places where residents have the opportunity to see and interact with one another.



Hoquiam City Hall

EXHIBIT 9

Religious Institutions in the Anderson & Middleton Study Area or Next to Haul Route

Name	Location	Next to Haul Route
Jehovah’s Witness Kingdom Hall	1000 K Street	No
Church of the Nazarene	427 7th Street	No
Saron Lutheran Church	708 8th Street	No
Harbor Assembly of God	716 M Street	No
Light & Life Community Church	2740 Simpson Avenue	Yes
Calvary Lutheran Church	2515 Sumner Avenue	Yes
First Church of Christ	2201 Simpson Avenue	Yes
Cornerstone Community Church	2008 Sumner Avenue	Yes
Harbor Praise Center	801 West Wishkah Street	Yes
Christian Cable Ministries	601 West Heron Street	Yes
Heritage Family Church	111 West Wishkah Street	Yes

Source: Grays Harbor County GIS 2007.

Aberdeen Log Yard Alternative

The Aberdeen Log Yard study area contains no community resources. Six community resources are located next to the haul route designated for this alternative site, as shown on Exhibit 2. These community resources are three social institutions (Salvation Army Family Store, Aberdeen Community Services Office, and Union Gospel Mission, listed in Exhibit 6) and three religious institutions (Harbor Praise Center, Christian Cable Ministries, and Heritage Family Church, listed in Exhibit 9).

What public services and utilities are located in the study areas?

The City of Hoquiam provides fire, emergency medical, and police protection to the Anderson & Middleton study area and along the potential haul routes within the city limits of Hoquiam. The City of Aberdeen provides the same services to the Aberdeen Log Yard study area and the potential haul routes within the city limits of Aberdeen. Several private and public companies provide utilities to the two sites. Public services and utilities are described in the Public Services and Utilities Technical Memorandum (WSDOT 2009a).

Where are the recreational facilities in the study areas?

Anderson & Middleton Alternative

No recreational facilities are located within the Anderson & Middleton study area; however, several are located along the potential haul route, as shown on Exhibit 2 and listed in Exhibit 8. In addition to these facilities, schools along the Anderson & Middleton haul route in the

Hoquiam School District provide fields and playground equipment for public use. The project would not require the acquisition or temporary use of any land from recreational facilities. The project also would not result in any negative effects on such facilities. As a result, Section 4(f) of the U.S. Department of Transportation Act of 1966 does not pertain to the project with regard to use of any public park, recreation area, or wildlife refuge.

In addition to the recreational facilities listed in Exhibit 8, the Grays Harbor National Wildlife Refuge is located near the Anderson & Middleton proposed haul route, as shown on Exhibit 2. Established in 1990, the refuge is managed by the U.S. Fish and Wildlife Service as part of the National Wildlife Refuge System. Encompassing approximately 1,800 acres of intertidal mudflats, salt marsh, and uplands, it is one of four major staging areas for up to 1 million shorebirds that gather in the spring and fall to feed and rest. The refuge includes an ADA-accessible boardwalk and marked trails that provide opportunities for visitor education programs. The Grays Harbor National Wildlife Refuge is discussed further in the Section 4(f) Technical Memorandum (WSDOT 2009f).

What is Section 4(f)?

Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 USC Section 303) prohibits the Federal Highway Administration from approving a project or program that uses land from a significant public park, recreation area, wildlife refuge, or historic site unless:

1. There is no feasible and prudent alternative to the use of the land.
2. The project includes all possible planning to minimize harm to the property.

Aberdeen Log Yard Alternative

No recreation facilities are located in the Aberdeen Log Yard study area. Finch Playfield, shown on Exhibit 2 and listed in Exhibit 10, is located next to one of the potential haul routes.

What pedestrian, bicyclist, and transit facilities are in the study area?

Pedestrian, bicyclist, and transit facilities within the study areas provide additional transportation options for non-motorist and transit-dependent users.

Anderson & Middleton Alternative

No pedestrian, bicyclist, or transit facilities are located next to the Anderson & Middleton Alternative. All streets in the Hoquiam city center have sidewalks. There are no bicycle paths or lanes in the study area, and bicyclists must ride next to vehicles on the roadways, including the potential haul route for this alternative site. Grays Harbor Transit provides daily bus service in Hoquiam, and bus route 20 makes four stops between Hoquiam and Aberdeen. In addition, four regional Grays Harbor Transit buses stop in Hoquiam on their way west to the Washington coast and east as far as Olympia. The Downtown Hoquiam Station, located at Seventh Avenue and J Street in downtown Hoquiam, provides connections to most of the Grays Harbor Transit routes. All of the bus routes use portions of the Anderson & Middleton potential haul route. Local plans did not identify any proposed pedestrian, bicycle, or transit facilities that would conflict with the project.

EXHIBIT 10
Parks and Recreational Facilities along the Designated Haul Routes

Park (Owner)	Size (Acres)	Description and Amenities	Haul Route
Emerson Triangles (City of Hoquiam)	0.12	Three landscaped urban squares next to Emerson Avenue	Anderson & Middleton
Chevron Veterans Memorial Park (City of Hoquiam)	0.1	Open space with a memorial honoring veterans from Hoquiam	Anderson & Middleton
Rayonier Point Park (City of Hoquiam)	N/A	One-quarter-mile paved walkway, picnic tables, and community garden	Anderson & Middleton
John Gable Community Park (City of Hoquiam)	23	Softball fields, basketball courts, horseshoe pits, playground equipment, and support facilities	Anderson & Middleton
Central Park (City of Hoquiam)	1.0	Open play area, playground equipment, wading pool, tennis court, and support facilities	Anderson & Middleton
Johnny Green Dike (City of Hoquiam)	N/A	Between Hoquiam River and Riverside Avenue park; includes a paved walkway and benches	Anderson & Middleton
Polson Park and Museum (City of Hoquiam)	2.5	Museum, rose garden, and walking paths	Anderson & Middleton
Finch Playfield (City of Aberdeen)	2	Covered picnic area, basketball court, sports field, playground, and restroom	Both

N/A = not available

Source: City of Hoquiam 2005 and City of Aberdeen 2009.

Aberdeen Log Yard Alternative

Pedestrian and bicyclist facilities in the Aberdeen Log Yard study area are similar to those for the Anderson & Middleton study area. Grays Harbor Transit provides service to the study area, and bus route 20 provides limited daily service along Port Industrial Road, which is next to the Aberdeen Log Yard site. Bus routes 10A, 10B, and 20 are located along the potential haul route. Local plans did not identify any proposed pedestrian, bicycle, or transit facilities that would conflict with the project.

3. Potential Effects of the Project

This section describes the expected effects of the build alternatives and No Build Alternative on social elements, including environmental justice, in the study areas and near the designated haul routes. Effects on cultural resources are described in the Cultural Resources Discipline Report (WSDOT 2009d).

How did WSDOT evaluate the project’s potential effects on social elements?

The analyst used the following methods to identify and evaluate the project’s potential positive and negative effects on social elements:

- Visiting the study area to assess the current neighborhood environments and how the project could affect them
- Using GIS, as needed, to map the areas where any potential effects could occur
- Reviewing the project design to determine where project elements would be constructed and where operation would occur in relation to the study area and haul routes
- Reviewing and analyzing other project reports, including noise, air quality, transportation, and land use, to identify the expected beneficial and adverse social effects of the project, as well as any mitigation measures needed to minimize adverse effects

How would construction of the casting basin affect social elements?

Construction activities in Grays Harbor County would take place over approximately 18 months. Because of the relatively urban character adjacent to the state highways (SR 109, SR 101, and SR 12) associated with portions of the potential haul routes, truck trips may affect the character of the communities and the adjacent social elements. Therefore, the analyst also considered potential effects of the haul routes on social elements.

Examples of typical construction effects include increases in noise and dust levels, negative visual quality effects, and increased traffic congestion and negative effects on access to adjacent uses. These could negatively affect area residents and businesses, as well as users of nearby social and recreational facilities. The level of construction noise, which would occur during the day, would depend on the type, amount, and location of activities. WSDOT would comply with all local and county policies regarding construction activities. Refer to the Noise, Air Quality, Visual Quality, and Transportation Technical Memoranda (WSDOT 2009g, WSDOT 2009h, WSDOT 2009i, and WSDOT 2009j, respectively) for additional information on noise effects, air quality effects, visual effects, and transportation effects during construction.

Anderson & Middleton Alternative

The Anderson & Middleton Alternative is located in an area zoned for and long characterized by industrial activities. Construction activities would have few effects on social elements in the study area because the Anderson & Middleton site is south of the residential and commercial parts of downtown Hoquiam, separated from them by the Puget Sound & Pacific Railroad, and the potential haul routes do not traverse the downtown area.

What are construction, operational, and long-term project effects and how are they measured?

Effects describe how the project would directly affect the built or natural environment.

Construction effects are effects that would occur while the new casting basin, ancillary and pontoon moorage facilities, and any mitigation features are built.

Operational effects are effects that would occur when the pontoons are being built at the new casting basin facility in Grays Harbor and at the CTC facility in Tacoma.

Long-term effects are effects that would remain after pontoon production is complete, effects of mooring pontoons over an indefinite period of time, and effects associated with mitigation features expected to remain after completion of the project.

Community Cohesion

Constructing the project would occur in an industrial area and would not bisect, disrupt, or isolate any established communities or change the existing community character. Construction would not require relocating any residences or businesses that would result in a negative effect on community cohesion. Project construction is consistent with the goals and policies identified in the City of Hoquiam

What is community cohesion?

Community cohesion is the ability of people to communicate and interact with each other in ways that lead to a sense of community, as reflected in the neighborhood's ability to function and be recognized as a singular unit.

Comprehensive Plan and would not result in converting any existing land uses. Refer to the Land Use Technical Memorandum (WSDOT 2009e) for additional information on land use. Noise levels would increase during construction at the project site and along the potential haul routes. For some sensitive receptors (such as residential buildings) to the north of the project site, noise levels would exceed the maximum allowable level set by the WAC. However, construction-related activities are exempt between the hours of 7 a.m. and 10 p.m. and do not need to meet the maximum allowable levels specified in the WAC. Any construction activities outside of those hours would either need to be within the allowable levels, or a noise variance from the local jurisdiction would be required. Refer to the Noise Technical Memorandum (WSDOT 2009g) for additional information on noise effects.

Disruptions to community cohesion as a result of haul route activity are not anticipated because the trucks would primarily travel on designated state routes or along roadways designated for industrial traffic. These routes are outside of the neighborhoods, resulting in fewer disruptions for neighborhood residents accessing any community resources or their ability to interact with one another. Portions of the haul routes would bypass residential areas. Noise levels would not increase over any threshold levels during construction, and any increases would be minimal because of the sporadic nature of the noise effects. However, those residents who live adjacent to the haul route or walk, ride bicycles, or wait for transit could be inconvenienced by noise and dust associated with truck traffic along the potential haul route. The Transportation Technical Memorandum (WSDOT 2009j) concluded that the project would not negatively affect transportation on any of the roadways or result in additional unacceptable levels of congestion. Although more trucks trips and activity would occur in the City, the transportation system is anticipated to operate at acceptable levels (Level of Service D or above), and crosswalks along the haul routes would be maintained to ensure safe pedestrian access across the potential haul routes. WSDOT does not anticipate effects to community cohesion near the site and along the haul routes.

Regional and Community Growth

The project would require workers during construction, and many would come from the greater Grays Harbor County region. Creating new jobs would be a beneficial effect for the area, but because the work would be short-term, the project would not alter regional and community growth. Refer to the Economics Technical Memorandum (WSDOT 2009k) for additional information on the expected economic effects of the project.

Community Resources

No effects from constructing the project are anticipated on any of the community resources described previously. Because the community resources would be located far enough away from the project site, it is anticipated that there would be no effects from noise or on air quality, no changes in access, and no relocations. Community resources adjacent to the potential haul route would not experience negative effects on transportation, noise, or air quality because construction activities would not impede access or increase noise or air quality levels above any allowable limits. Refer to the Noise, Air Quality, and Transportation Technical Memoranda (WSDOT 2009fe, WSDOT 2009g, and WSDOT 2009j) for additional information on construction effects. Crosswalks along the haul routes would be maintained to ensure safe pedestrian access across the potential haul routes to the community resources.

The project would not have adverse effects on any public services or utility providers. For information on construction-related effects on public services and utilities, refer to the Public Services and Utilities Technical Memorandum (WSDOT 2009a).

Recreation Facilities

Because no recreation facilities are in close proximity to the project site, there would be no effects on such facilities. In addition, recreation facilities adjacent to the haul route would not experience negative effects related to noise, air quality, traffic, or construction activities because noise levels and air quality levels would not exceed any allowable limits. Refer to the Noise, Air Quality, and Transportation Technical Memoranda (WSDOT 2009g, WSDOT 2009h, and WSDOT 2009j, respectively) for additional information on construction effects.

Pedestrian, Bicyclist, and Transit Facilities

Construction would not result in any adverse effects on pedestrian, bicyclist, or transit facilities associated with the project facilities because no such facilities are within the study area.

Negative effects on pedestrian, bicyclist, and transit facilities associated with the potential haul route are not anticipated. Many intersections have stoplights and pedestrian crossings, which would allow pedestrians and bicyclists to move safely across the haul route. In addition, pedestrians and bicyclists could use adjacent streets to avoid the haul route. Project construction would have no negative effects on bus schedules because construction would not delay traffic beyond acceptable levels along the haul routes (refer to the Transportation Technical Memorandum, WSDOT 2009j). Although the project would not exceed transportation facility levels-of-service or air quality thresholds, residents, transit riders, pedestrians, and bicyclists adjacent to the haul routes could be inconvenienced by noise, dust, and traffic congestion associated with truck traffic along the potential haul routes.

Aberdeen Log Yard Alternative

Construction effects of the Aberdeen Log Yard Alternative on social elements would be the same as those described for the Anderson & Middleton Alternative except for effects related

to construction noise. Construction noise at the Aberdeen Log Yard would not exceed the maximum noise levels set by the WAC because existing commercial and industrial structures would shield the majority of noise-sensitive receptors. This shielding would result in construction noise levels within the WAC maximum allowable noise level criteria.

No substantial adverse effects on social elements would be associated with the haul routes. The effects would be similar to those described under the Anderson & Middleton Alternative; however, the potential Aberdeen Log Yard Alternative haul routes are shorter in distance and do not travel past as many social elements, furthering minimizing any effects. Crosswalks along the haul routes would be maintained to ensure safe pedestrian access across the potential haul routes. Although the project would not exceed transportation facility levels-of-service or air quality thresholds, residents, transit riders, pedestrians, and bicyclists adjacent to the haul routes could be inconvenienced by noise, dust, and traffic congestion associated with truck traffic along the potential haul routes.

Environmental Justice

Anderson & Middleton Alternative

The analyst reviewed other discipline reports and technical memoranda prepared for the project to determine whether construction would result in any disproportional adverse affects on minority or low-income populations. Although construction would have temporary negative effects (such as increased dust and noise), WSDOT would use mitigation measures, including those described under the heading, *What would WSDOT do to avoid or minimize negative effects?*, to avoid or minimize them.

What is environmental justice?

Environmental justice is the process of identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects on minority or low-income populations.

Construction would affect all populations equally and does not require displacing any residences or businesses. Project construction would not have any effects on minority and low-income populations that would be appreciably more severe or greater in magnitude than those experienced by non-minority and higher-income populations. The project would result in short-term but beneficial economic effects by creating new jobs, and individuals from minority and low-income populations would have access to these new sources of employment. During construction, no disproportionate effects to the tribes are expected from a reduction in the net population of fish within the study area. The project is also not expected to alter access to tribal fishing grounds. WSDOT will continue to consult directly with the tribes throughout the environmental process. More information on the project's effects to fish species and habitat during construction is in the Ecosystems Discipline Report (WSDOT 2009I).

As discussed under the heading, *What types of outreach were used to engage the public?*, WSDOT has been communicating with the public about the project through newsletters, the project Web site, open houses, and community briefings. WSDOT will continue to ensure that communications with LEP populations are in the appropriate languages and that minority and low-income populations are included in the public involvement process throughout the

construction phase. The public in the Grays Harbor County area supports the project because it would provide new employment sources for area residents.

Aberdeen Log Yard Alternative

Environmental justice effects are the same as those described above under the Anderson & Middleton Alternative.

No Build Alternative

Under the No Build Alternative, there would be no construction-related effects on any social elements or minority and low-income populations in the study area because no action would be undertaken. The area would not benefit from creating new jobs.

How would pontoon-building operations affect social elements?

Operation effects would be those anticipated during pontoon building at either of the two alternative casting basin facility sites proposed in Grays Harbor County. It is expected that facility operation would last about 2 years.

Anderson & Middleton Alternative

Operation effects social elements associated with the Anderson & Middleton Alternative would be similar to those described previously for construction. However, the effects would be further minimized because fewer truck trips are associated with operation than with construction. Although there would be no new effects on any social elements, noise effects would be treated differently. As previously noted, facility construction, which would be relatively short-term, would be exempt from daytime noise restrictions. Project operation, however, would be subject to such restrictions. Operation would produce noise levels at residential properties and businesses north of the project site exceeding the limits set by the WAC. Noise levels would exceed the WAC limits at four locations north of the site. The Noise Technical Memorandum (WSDOT 2009g) identifies mitigation measures, including a noise wall or earth berm, that would reduce noise levels at those locations to below the WAC limits. With mitigation, therefore, operation noise levels away from the project site would be low enough to not adversely affect social elements in the surrounding area.

The analysis indicated that, during project operation, no negative effects would occur to any social elements along the potential haul routes associated with the Anderson & Middleton Alternative. During operation, the number of truck trips would decrease by as much as 70 to 80 percent relative to truck traffic during construction.

Aberdeen Log Yard Alternative

Operation effects on social elements associated with the Aberdeen Log Yard Alternative would be the same as those described for the Anderson & Middleton Alternative, except for noise effects on the surrounding area. Operation noise levels at the Aberdeen Log Yard would not exceed the maximum allowable noise levels set by the WAC.

Environmental Justice

Other discipline reports and technical memoranda prepared for the project, including Transportation, Noise, Air Quality, Visual Quality, and Cultural Resources, identified mitigation measures (such as constructing a noise wall). With proposed mitigation measures, project operation would not cause adverse effects (such as noise levels above WAC or negative effects on air quality, from property acquisition, or increased traffic congestion) to any populations, including minority and low-income populations..

Project operation would not affect any social or religious resources that are important to minority or low-income populations. During project operation, no disproportionate effects to the tribes are anticipated from a reduction in the net fish population within the study area. The project is also not expected to alter access to tribal fishing grounds. WSDOT will continue to consult directly with the tribes throughout the environmental review process. More information on the project's effects to fish species and habitat during operation is in the Ecosystems Discipline Report (WSDOT 2009l). Project operation would result in new jobs that individuals from minority and low-income populations in the surrounding area could possibly fill. These populations would also benefit because the jobs are expected to pay a living wage. However, these jobs would last only for the period of pontoon construction, which is expected to be about 2 years.

WSDOT will continue to ensure that communications with LEP populations are in the appropriate languages and that low-income populations are included in the public involvement process. Project operation does not result in any adverse effects that would be borne predominately by minority or low-income populations or that would be appreciably more severe or greater in magnitude than those experienced by non-minority and higher-income populations. Because there are no adverse effects, no additional analysis was required. The project complies with the provisions of Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, as it is supported by Title VI of the Civil Rights Act.

Aberdeen Log Yard Alternative

Environmental justice effects are the same as those describe above for the Anderson & Middleton Alternative.

No Build Alternative

Under the No Build Alternative, there would be no operation-related effects on any social elements or minority and low-income populations in the Grays Harbor study area because no action would be undertaken. The area would not benefit from the creating new jobs.

How would the project affect social elements in the long term?

Long-term effects of the new pontoon casting basin and ancillary facilities would be those remaining after pontoon production ended. These would include effects associated with

pontoon moorage over an indefinite period and effects related to mitigation measures, such as intersection improvements, remaining in effect after completing the project.

Anderson & Middleton Alternative

No long-term effects on social elements and minority or low-income populations would persist following use of the Anderson & Middleton site for pontoon construction. The site is located in an area zoned for industrial activities and could be used for other industrial purposes after the project has been completed. Pontoon moorage is not expected to result in social effects because the pontoons would be moored in Grays Harbor outside the federal navigation channel, and no social elements exist the vicinity, including established recreation areas.

Aberdeen Log Yard Alternative

For the same reasons explained for the Anderson & Middleton Alternative, no long-term effects on social elements, including minority and low-income populations, would result from using the Aberdeen Log Yard site for pontoon construction.

No Build Alternative

The No Build Alternative would result in no long-term effects on social elements or minority and low-income populations because no action would be undertaken.

How would the alternatives compare in their effects on social elements?

As discussed above under the headings, *How would project construction affect social elements?* and *How would project operation affect social elements?*, the Anderson & Middleton Alternative would result in noise effects during construction operation that would exceed the maximum allowable levels set by the WAC; during operation, these effects would require mitigation. In addition, compared with the Aberdeen Log Yard Alternative, the Anderson & Middleton Alternative would have a longer haul route through the Cities of Aberdeen and Hoquiam, which would result in truck traffic traveling through an additional community and next to additional social elements. However, as described previously, no negative effects on the social elements are anticipated as a result of the truck traffic.

4. Mitigation

What measures would WSDOT proposed to reduce negative project effects?

Because constructing and operating a casting basin facility at either Grays Harbor alternative site would require similar activities, mitigation measures would be similar for either site. However, noise effects associated with the Anderson & Middleton Alternative would require site-specific mitigation. It is not anticipated that construction and operation at either

alternative site would affect regional and community growth; community resources; recreational facilities; or pedestrian, bicyclist, or transit facilities. Therefore, mitigation is not proposed for these elements.

Following are mitigation measures that WSDOT could apply, but would not be limited to:

- Continuing to use the project Web site, mail newsletters providing information on the proposed project, and providing contact numbers where residents could voice their concerns about the project
- Maintaining equipment in good mechanical condition, equipping engines with mufflers to minimize exhaust emissions and noise, and encouraging the use of newer equipment or equipment with add-on emission controls
- Limiting construction and operation activities to the period between the hours of 7 a.m. and 10 p.m. to reduce noise levels during sensitive nighttime hours
- Reducing idling time of construction equipment by turning equipment off during prolonged periods of nonuse
- Requiring contractors to cover loads and spray exposed soils with water or other suppressant to reduce dust and wind-blown debris

The proposed project would include a number of measures to avoid or minimize negative effects on the surrounding area and along potential haul routes. Because the project would not result in any disproportionately high and adverse effects during construction and operation, no mitigation specific to environmental justice populations would be required.

For the Anderson & Middleton Alternative, operational noise levels are predicted to exceed the WAC criteria at four locations. Constructing an approximately 1,200-foot berm or noise wall between 12 to 14 feet high would effectively reduce noise levels to below the maximum allowable levels.

For potential mitigation measures related to public services and utilities, refer to the Public Services and Utilities Technical Memorandum (WSDOT 2009a).

How could the project compensate for unavoidable negative effects?

None of the project alternatives would have an unavoidable or substantial negative effect on any social element, including environmental justice populations. Therefore, no compensation is proposed or necessary for social elements of the environment.

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