

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

MAY 2010

SR 520 Pontoon Construction Project

Economics 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

Economics Technical Memorandum

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Abbreviations and Acronyms

BLS	Bureau of Labor Statistics
CTC	Concrete Technology Corporation, Inc.
EIS	environmental impact statement
GHEDC	Grays Harbor Economic Development Council
OFM	State of Washington Office of Financial Management
SR	state route
WSDOT	Washington State Department of Transportation

1. Introduction

Why are economics considered in an EIS?

New, large industrial facilities can affect aspects of the regional or local economy, such as development patterns, employment opportunities, income levels, and retail sales. Prior to construction, some businesses might have to be relocated and employees displaced to accommodate a new facility. A new industrial facility might also have financial effects on the budgets of cities and counties in its vicinity.

What are the key points of this technical memorandum?

Washington State Department of Transportation (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 could 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 in Puget Sound until needed.

Neither of the project alternatives would relocate businesses, reroute business traffic away from existing drive-by dependent businesses, change development patterns, or substantially change employment opportunities, income levels, or retail sales in the area.

Because they are located in the same general vicinity and would be designed, built, and operated in similar ways, the two build alternatives would have the following similar effects on the local and regional economies:

- Construction and operation of a pontoon manufacturing facility in the Grays Harbor area would create jobs related to building both the new facility and the pontoons. It is possible that some local firms and workers could be directly involved in the construction of the facility. Other local firms and their employees could also supply construction materials, such as cement, asphalt, wood, steel, gravel, and electrical equipment. Ultimately, it will be up to the selected contractor to secure vendors, subcontractors, and assemble their workforce.
- During construction of the pontoon manufacturing facility, traffic congestion would increase during construction, temporarily affecting access for businesses, the Port of Grays Harbor, and residents near the project site or along a haul route.
- During project operation—while the pontoons are being built—truck traffic associated with hauling manufacturing materials could affect access for businesses, the Port of Grays Harbor, and residents near the project site or along a haul route through Hoquiam, Aberdeen, the Port of Grays Harbor, or other cities and towns along the haul route.

- Construction and operation of the project would likely result in a small, short-term improvement in the economic condition of businesses in the Grays Harbor study area. Some local businesses could experience increased revenues from spending by project workers during construction and operation. The extent that spending during construction and operation of the casting basin has beneficial effects to the local economy will largely depend on where the labor force resides.
- In the long term, the degree to which the Grays Harbor regional economy would be affected would depend on whether a private or public entity found a long-term use for the site once the project is completed.

What are the 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.

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.

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 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 2009a), included as Appendix B to the Draft EIS.

Site Descriptions

Anderson & Middleton Alternative

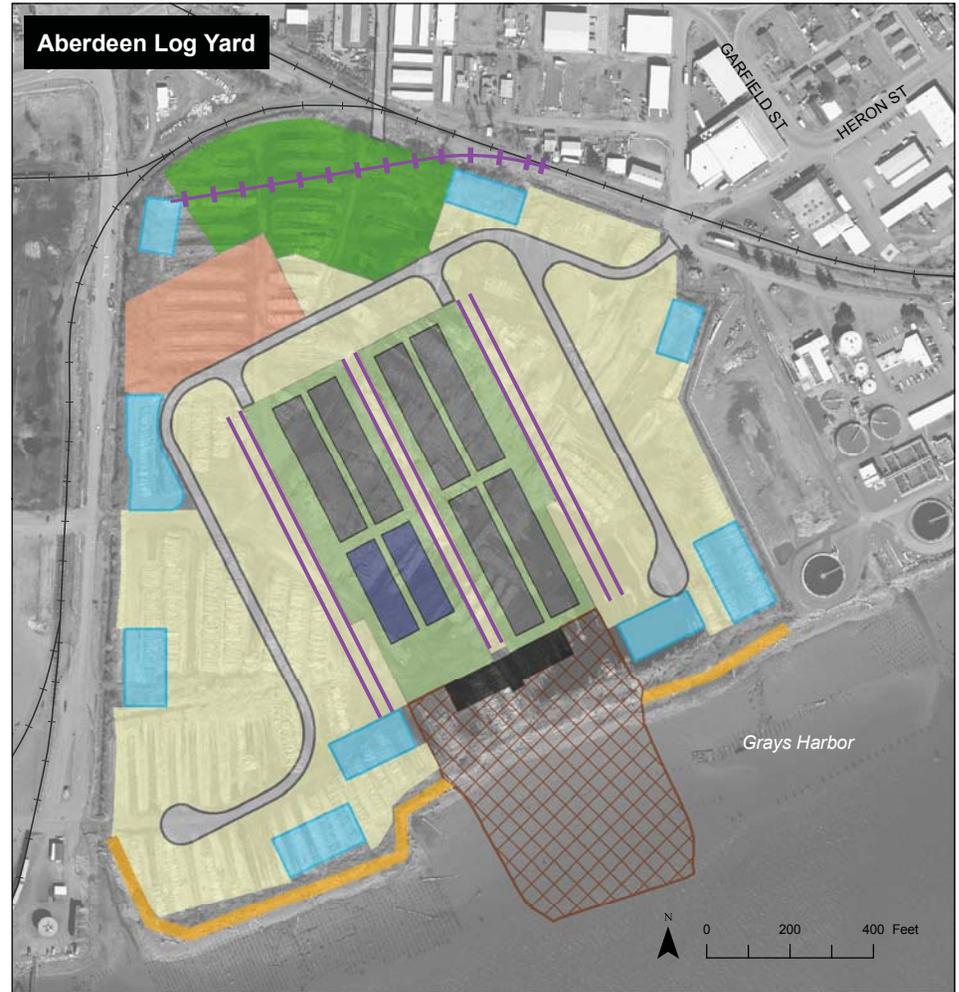
The 105-acre Anderson & Middleton Alternative site is on the north shore of Grays Harbor in Hoquiam, Washington (Exhibit 1). This generally flat property is privately owned and is zoned for industrial use. The site is surrounded by industrial maintenance shop buildings to the west, railroad tracks to 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.

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.



- 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



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 4proposed 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 2009a] 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 2009a) 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.

2. Affected Environment

How did WSDOT collect the information about economics?

The economics analyst reviewed the following information for this technical memorandum:

- Population and housing data – State of Washington Office of Financial Management (OFM) (OFM 2009)
- Historic employment data – Washington State Employment Security Department (2009a)
- Unemployment data – U.S. Bureau of Labor Statistics (BLS) (BLS 2008a, b)
- Local economy data – Grays Harbor Economic Development Council (GHEDC) (GHEDC 2008)

The analyst reviewed county-level data if local data were unavailable.

What are the existing economic conditions of the study area?

The economics study area for the CTC facility site consisted of the existing casting basin facility and the greater Tacoma area. For the build alternative sites in the Grays Harbor area, the economics study area included the cities of Hoquiam and Aberdeen and Grays Harbor

County. The county was included because the project would have economic effects outside the immediate project vicinity.

CTC Facility

The CTC facility is located within an approximately 3-square-mile area of land zoned as an industrial center on the Blair Waterway in Tacoma. Up until the recent economic downturn felt throughout the nation, the Tacoma area has experienced strong economic growth over the past 5 years because of an influx of new residents taking advantage of the strong economic conditions, relatively lower housing costs, and proximity to Seattle. In addition, Tacoma's downtown core has recently undergone a revitalization effort that has increased investment in public and private ventures in the area. As a whole, the City of Tacoma's September 2008 Economic Status Report indicates that employment growth within the Tacoma area has remained relatively unchanged during the past year and continues to outperform the nation (City of Tacoma 2008).

The CTC casting basin is a fully constructed facility and is routinely used for industrial activities, including the building of pontoons. Therefore, WSDOT's proposed use of this facility to build pontoons would not alter the existing economic conditions in the study area.

Grays Harbor Build Alternatives

Grays Harbor County's economic base historically has consisted of resource-based industries like timber and fishing. In recent years, the county's economy has come to rely less on resources and more on the government sector and other services, although timber remains an important economic resource. As a result of this diversification, the county's economy is somewhat less likely to be affected by downturns in a single industry, such as timber or wood products.

Beginning in 2008, however, the county, and nation as a whole, began to experience the affects of a downturn in most industries. In January 2009, the Weyerhaeuser sawmill and Pacific Veneer mill laid off a combined 221 employees as a result of the downturn in the national and local economies (The Daily World 2009). Because of the difficult economic conditions, many were unable to find new jobs locally in other industries. On the other hand, a few cities in the county, including Hoquiam, plan to begin or continue a revitalization effort to improve their downtown core, attract new business, and improve employment opportunities.

Population and Housing

Exhibit 2 presents historical population data for the cities of Hoquiam and Aberdeen and for Grays Harbor County, and Exhibit 3 presents historical housing data for the cities of Hoquiam and Aberdeen and for Grays Harbor County. The OFM estimates show that between 2000 and 2009, the number of households in these areas was growing at a higher average annual rate than population. This means that the number of persons per household has been declining.

EXHIBIT 2

Historical Population Estimates in Grays Harbor County

Area	2000	2008	Average Annual Growth Rate
City of Hoquiam	9,097	8,795	-0.4%
City of Aberdeen	16,461	16,460	0.0%
Grays Harbor County	67,194	70,900	0.7%

Source: OFM (2009).

EXHIBIT 3

Historical Housing Estimates in Grays Harbor County

Area	2000	2008	Average Annual Growth Rate
City of Hoquiam	4,023	3,935	-0.3%
City of Aberdeen	7,536	7,653	0.2%
Grays Harbor County	32,489	35,472	1.1%

Source: OFM (2009).

Washington's OFM estimates show that the populations of Hoquiam and Aberdeen decreased at average annual rates of 0.4 percent and less than 0.1 percent, respectively, between 2000 and 2008. In comparison, the county's population grew at an average annual rate of 0.7 percent during the same time frame.

In 2000, the median housing values in Hoquiam and Aberdeen were \$75,500 and \$80,300, respectively (City-Data, 2009a, b). Both of these values were lower than the county median housing value of \$93,500. By 2007, median housing values in Hoquiam, Aberdeen, and Grays Harbor County had all increased by nearly 58 percent (City-data, 2009a, b).

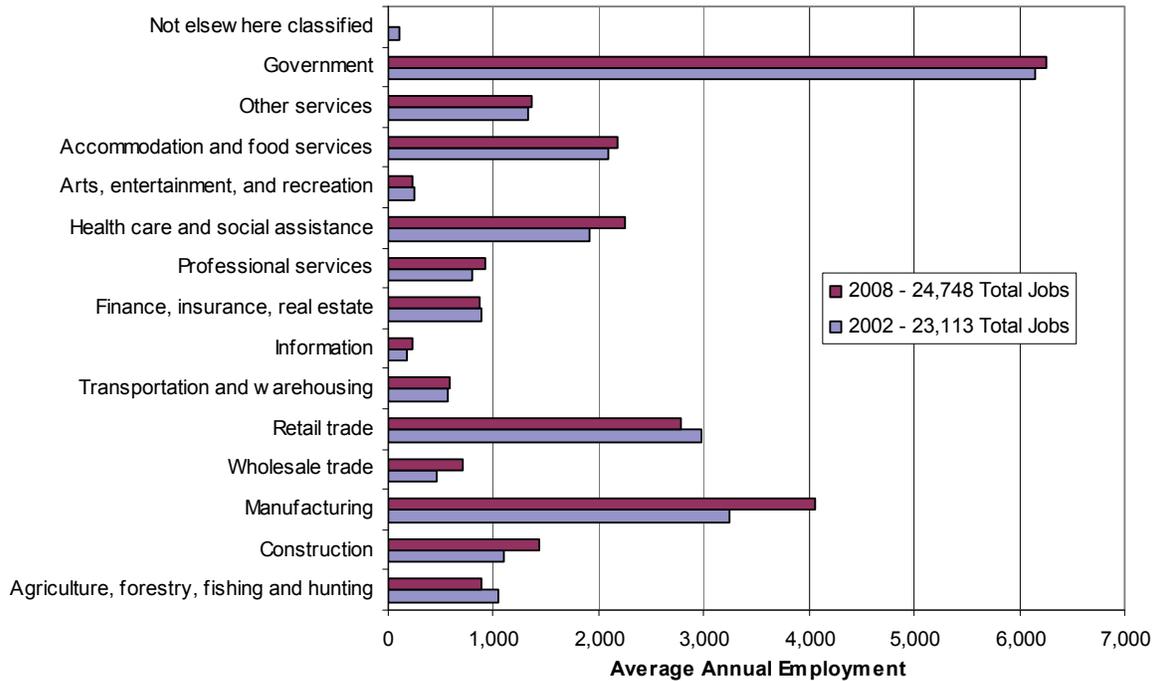
Household Income

Median household incomes in Hoquiam and Aberdeen are lower than the county and state medians. Hoquiam's and Aberdeen's median household incomes were approximately \$36,814 and \$38,086, respectively, in 2007 (City-Data 2009a, b). Median household income was \$42,049 in Grays Harbor County and \$59,119 statewide in 2007. Incomes in Hoquiam, Aberdeen, Grays Harbor County, and the state increased by 24.1, 24.1, 23.1, and 29.1 percent, respectively, since the 1999 Census (OFM 2007).

Employment

Exhibit 4 shows Grays Harbor County employment by job sector for 2002 and 2008. Total employment increased by approximately 1,500 jobs.

EXHIBIT 4
Average Annual Employment in Grays Harbor County, 2002 and 2008



Source: Washington State Employment Security Department (2009a).

The largest percentage of jobs is in government and services. By 2008, the biggest decrease in jobs was in the retail trade and agriculture, forestry, fishing, and mining. Manufacturing and wholesale trade both slightly increased their share of total jobs in the county. The top two employers in Grays Harbor County are Grays Harbor Community Hospital and Westport Shipyard (GHEDC 2008). Other major employers show the county’s economic diversity: Stafford Creek Prison, Grays Harbor County, Aberdeen and Hoquiam school districts, Quinault Beach Resort, Quinault Indian Nation, Wal-Mart, Grays Harbor College, Simpson Door Plant, and Grays Harbor Paper.

Exhibit 5 lists the major employers in Grays Harbor County. This list represents businesses from a variety of sectors and illustrates the county’s economic diversity.

Unemployment

Exhibit 6 shows that Grays Harbor County’s unemployment rate has trended higher than state or national rates since 2000. Since 2008, the County’s, the state’s and the nation’s unemployment rate has trended higher because of the global economic recession. As of June 2009, the unemployment rate in the county had climbed to 12.4 percent, while the unemployment rate in the state and the nation exceeded 9 percent (Washington State Employment Security, 2009b).

EXHIBIT 5
 Grays Harbor County Largest Employers

Employer	Employees
Grays Harbor Community Hospital	691
Westport Shipyard	594
Weyerhaeuser	540
Stafford Creek Prison	530
Aberdeen School District	490
Grays Harbor County	468
Quinault Beach Resort	421
Simpson Door Plant	376
Quinault Indian Nation	320
Grays Harbor College	305
Hoquiam School District	271
Sierra Pacific Industries	255
Wal-Mart	242
Grays Harbor Paper	220
Bank of the Pacific	192

Source: GHEDC (2008).

Note: These employee numbers are from 2008 and do not reflect the recent 221 layoffs by Weyerhaeuser at its sawmill and Pacific Veneer mill in Aberdeen, WA.

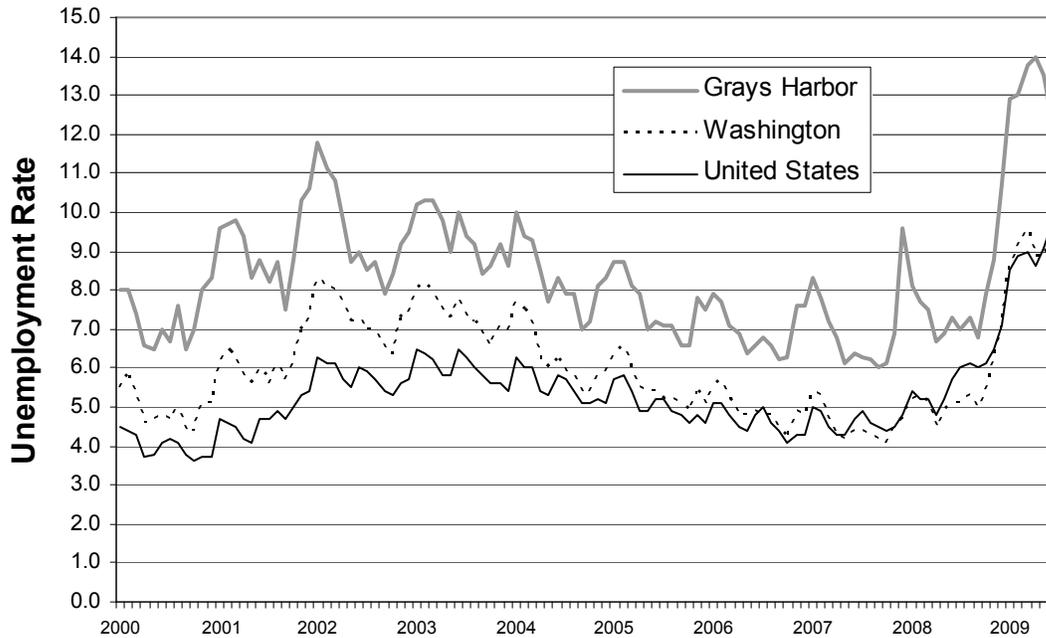
Retail Sales

Historical retail sales in Aberdeen, Hoquiam, and Grays Harbor County are presented in Exhibit 7. Between 2000 and 2008, retail sales in Aberdeen and Hoquiam increased overall at average annual growth rates that were slightly higher than Grays Harbor County. These growth rates were 2.7 percent for Aberdeen, 2.8 percent for Hoquiam, and 2.1 percent for the county (Washington State Department of Revenue 2009).

Revenue Sources

Exhibit 8 shows Grays Harbor County General Fund revenues for 2007 and 2008. Property and sales taxes accounted for approximately 45 percent of the general fund revenues. Additional taxes accounted for 19 percent of the 2008 proposed budget and include license, permit, and forest taxes. Non-tax-revenue sources accounted for the remaining 36 percent of total revenue.

EXHIBIT 6
Unemployment Rates, 2000 to 2009



Source: Washington State Employment Security Department (2009b).

EXHIBIT 7
Historical Retail Sales (Millions \$)

Area	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average Annual Growth Rate
Aberdeen	\$344	\$328	\$347	\$352	\$359	\$395	\$426	\$439	\$395	2.7%
Hoquiam	\$58	\$52	\$60	\$57	\$60	\$66	\$72	\$75	\$78	2.8%
Grays Harbor County	\$712	\$654	\$809	\$669	\$704	\$808	\$839	\$959	\$886	2.1%

Source: Washington State Department of Revenue (2009).

3. Potential Effects of the Project

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

The analyst used the data sources and summaries listed in the previous section as a qualitative framework as well as conducted windshield surveys in Hoquiam and Aberdeen to gauge the potential effects of the project on local businesses. The analyst also evaluated the findings of the transportation, noise, and visual quality and aesthetics technical memoranda prepared for

EXHIBIT 8

Grays Harbor County General Fund Tax Revenues (Thousands \$)

Source	2007 Budget	2008 Budget	2008 % of Total
Property tax	\$7,805	\$8,225	34.5%
Sales tax and equalization	\$2,310	\$2,400	10.1%
Interest and penalties on taxes	\$1,274	\$1,363	5.7%
Federal, state, and local grants	\$4,370	\$1,757	7.4%
Court fines and fees	\$2,743	\$2,794	11.7%
Investment earnings	\$1,334	\$1,480	6.2%
License, permits, fees, and taxes	\$3,067	\$2,840	11.9%
Miscellaneous and other	\$200	\$200	0.8%
Criminal justice	\$917	\$911	3.8%
Forest taxes and yield	\$1,511	\$1,753	7.3%
Fund transfers in	\$201	\$131	0.5%
Total	\$25,732	\$23,854	100.0%

Source: Grays Harbor County (2008).

this EIS (WSDOT 2009b, c, d), along with published economic and demographic data, to assess the economic effects of the project on congestion, mobility, and access.

Expenditures on construction result in demand for construction materials and jobs. These expenditures are referred to as direct impacts. For direct employment, the analyst used previous pontoon-building and floating bridge project experience, like the Hood Canal Project, to estimate the number of employees needed for this project. Methods WSDOT more regularly uses to estimate employment for highway construction and operation did not apply to this project. The analyst then conducted a qualitative assessment of the potential for a temporary increase in jobs and income in the Grays Harbor study area that would result from spending during project construction and operation.

The analyst also estimated indirect and induced employment that would result from pontoon construction and operation using results from the 2002 Washington State Input-Output model (OFM 2008). Direct impacts lead to indirect impacts such as the output of firms in other industries increases to supply the demand for inputs to the construction industry. Wages paid to workers in construction trades or supporting industries are spent on other goods and services; these are referred to as induced impacts. The sum of the direct, indirect, and induced impacts represents the total economic impact of a project to a region. Exhibit 9 summarizes the direct, indirect, and induced employment resulting from casting basin construction and pontoon-building operations.

EXHIBIT 9
 Estimated Direct, Indirect, and Induced Employment

Project Phase	Direct	Indirect and Induced	Total
Jobs estimate during construction	250	340	590
Jobs estimate during operation	800	1,075	1,875

How would construction of the casting basin affect economic conditions?

CTC Facility

The CTC facility in Tacoma is part of an established manufacturing business located in a large industrial park. WSDOT’s proposed use of this facility to build pontoons would be consistent with its current industrial purpose and use. The proposed project would have no construction effects on the economy because the CTC facility is already built and functioning.

Grays Harbor Build Alternatives

Anderson & Middleton Alternative

Because the Anderson & Middleton Alternative and Aberdeen Log Yard Alternative sites are near each other, the economic effects of project construction at either site would be similar as discussed below.

The development of a new and large industrial facility usually results in increased employment and spending in the project vicinity during construction. The extent of these effects depends on the source of project funding and the size and composition of work crews. Funds from local or regional sources are dollars that, if not collected from residents and businesses through taxes to fund local or regional projects, could be spent by residents and businesses on other economic activities. Federal or state funds for a project that are new to a region can have a measurable economic effect on employment and income during construction. For the proposed project, the State of Washington would provide the majority of funds, producing income and jobs that would not otherwise be created. Project construction is anticipated to start in the last quarter of 2010 and end in the second quarter of 2013; during this time, there would be a temporary beneficial effect on the local and regional economies.

WSDOT estimates that up to 250 workers would be needed to construct the casting basin (HDR Engineering 2007). The types of jobs required would include supervisors/foremen,

What are the 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 the project is complete.

clerical workers, equipment operators, mechanics, truck drivers, iron workers, carpenters, cement masons, electricians, plumbers, painters, and semi-skilled and unskilled laborers.

The extent that construction spending has beneficial effects to the local economy will largely depend on where the labor force resides. It is possible that some local firms and workers could be directly involved in the construction of the facility. Other local firms and their employees would supply construction materials, such as cement, asphalt, wood, steel, gravel, and electrical equipment. Ultimately, it will be up to the selected contractor to secure vendors, subcontractors, and assemble their workforce.

Project construction could temporarily increase congestion near the selected project site and along the designated haul route, shown in Exhibit 10. WSDOT estimates that approximately 191,400 total one-way truck trips (loaded and unloaded) would be required for excavation and construction of the casting basin facility (WSDOT 2009e). During the 2- to 3-month peak activity period, which is generally where project construction and material delivery for operations overlap, it is estimated that an approximate maximum of 1,100 total truck trips (loaded and unloaded) could occur daily, and an average of approximately 88 outbound and 89 inbound trips will occur daily during the peak hour (WSDOT 2009b). Most businesses near the Anderson & Middleton site are industrial and would be less likely than retail businesses to be affected by construction-related traffic congestion. Along the designated haul route, however, retail and other businesses that depend on unimpeded access could experience a small reduction in revenue from the increased volume of truck traffic to and from the project site.

Businesses located along US 101 within Hoquiam and Aberdeen would likely experience the greatest effect because of increased dust, congestion, and reduced access along the haul route and because of increased volume of truck traffic could cause business patrons to avoid the area altogether and go elsewhere for their purchases. As a result, some businesses along the designated haul route, especially those that rely heavily on good access and drive-by traffic, could experience a decrease in sales during project construction, which could also decrease local sales tax revenues. Conversely, some businesses located close to the project site and along the haul route could experience an increase in revenue from spending by construction workers, which would result in an increase in local sales tax revenues.

Direct economic effects of increased truck traffic would not be as notable along the haul route along US 101, State Route (SR) 12, and Highway 8 east of Aberdeen because these are highways designed to accommodate heavy traffic through less-developed towns. Material from as far as 40 miles away would be hauled to the project site during construction.

Segments of the designated haul route that are mainly residential neighborhoods or industrial facilities do not rely economically on drive-by traffic. They would not likely experience substantial economic effects related to traffic congestion during construction of the casting basin. The transportation technical memorandum (WSDOT 2009b) describes the haul route for each project site.



- Proposed project haul route common to all project sites
- Proposed project haul route: Aberdeen Log Yard
- Proposed project haul route: Anderson & Middleton
- Build Alternative Site
- CTC facility
- City limits

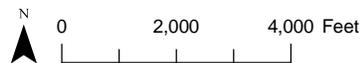


Exhibit 10. Proposed Project Haul Routes

Pontoon Construction Project



**Washington State
Department of Transportation**

On balance, the positive effects of construction-related jobs, spending (for example, project spending and spending by construction workers) and resulting sales tax revenue would be more widely dispersed through the local and regional economies than the location-specific negative effects of increased traffic congestion and noise. For this reason, project construction is expected to have a net beneficial economic effect. In addition, construction-related mitigation measure presented in the transportation technical memorandum (WSDOT 2009b) could be taken to mitigate and improve the level of service at intersections along the haul route and, in turn, fully or partially mitigate economics effects related to congestion and access.

Aberdeen Log Yard Alternative

The Aberdeen Log Yard Alternative is expected to have a similar site design to the other build alternatives, and the economic effects of construction would also be similar. The Aberdeen Log Yard Alternative would, however, have limited differences during construction that could have economic consequences, as discussed here.

Only businesses and residences located along the truck haul route within Aberdeen would be exposed to notable temporary traffic congestion effects during construction. WSDOT estimates that approximately 210,400 total one-way truck trips (loaded and unloaded) would be required during for excavation and construction of the casting basin facility (WSDOT 2009e). During the 2- to 3-month peak activity period, which is generally where project construction and material delivery for operations overlap, it is estimated that an approximate maximum of 1,100 total truck trips (loaded and unloaded) could occur daily, and an average of approximately 88 outbound and 89 inbound trips will occur daily during the peak hour (WSDOT 2009b). Direct economic effects of increased truck traffic would not be as notable along the haul routes of US 101, SR 12, and Highway 8 east of Aberdeen because these are highways designed to accommodate heavy traffic through less-developed towns. As a consequence, negative effects on sales revenues and resulting sales tax revenues resulting from increased truck traffic would be more limited geographically under the Aberdeen Log Yard Alternative than for Anderson & Middleton Alternative.

Except for these differences, construction-related economic effects from the Aberdeen Log Yard Alternative are expected to be similar to those for Anderson & Middleton Alternative and are expected to be predominately beneficial.

No Build Alternative

Economic effects of the No Build Alternative would be different from those of the build alternatives. Temporary adverse effects on the local economy related to congestion, noise, and visual quality reduction would not occur under the No Build Alternative. But under the No Build Alternative, the local and regional economies would not benefit from a temporary increase in employment and income from increased spending during project construction.

How would pontoon-building operations affect the local and regional economy?

CTC Facility

During project operation, WSDOT's use of the CTC facility would bring revenue to CTC through leasing of the facility and bring revenue to the contractors selected to manufacture the pontoons. This would also help each firm to sustain employment, which would be a beneficial effect.

Anderson & Middleton Alternative

Because the Anderson & Middleton Alternative and Aberdeen Log Yard Alternative sites are proximate to one another, the economic effects of operating the project at either site would be similar, as discussed below.

Pontoons would be built at the selected project site for about 18 months. In general, local businesses are far enough from either of the Hoquiam alternative sites to avoid noise and other direct effects of pontoon manufacture. Along the truck haul route, however, retail businesses that depend on drive-by traffic and unimpeded access could experience a small reduction in revenue from increased truck traffic traveling to and from the project site. During project operation, a maximum of approximately 27,600 total one-way truck trips (loaded and unloaded) will be needed to haul pontoon materials from as far as 40 miles away to the project site. Total trips will be fewer if a batch plant is constructed onsite. Businesses along the haul route would experience adverse effects from increased dust and congestion, and parking and access because of increased volume of truck traffic to these businesses, could temporarily become less convenient.

Businesses along US 101 in Hoquiam and Aberdeen would likely experience the greatest effect because of increased dust, congestion, and reduced access along the haul route. On one hand, some of these businesses, especially those that rely on easy access, reliable parking, and drive-by traffic, could experience a decrease in sales during project operation due to increased truck traffic, which could also decrease local sales tax revenues. On the other hand, businesses located close to the selected project site and along the haul route could experience increased revenues from spending by project workers, which could increase local sales tax revenues. Direct economic effects of increased truck traffic would not be as notable along the haul route of US 101, SR 12, and Highway 8 east of Aberdeen because these are highways designed to accommodate heavy traffic through less-developed towns. WSDOT selects the haul routes to confine the trucks as much as possible to major arterials that already have a history of industrial traffic.

Because residential and industrial sites along the truck haul route do not rely heavily on convenient access and drive-by traffic, they would not likely experience substantial adverse economic effects related to traffic congestion and reduced access during project operation. See the transportation technical memorandum (WSDOT 2009b) for a detailed description of each haul route.

Up to 800 workers will be needed during the manufacturing of the pontoons (HDR Engineering 2007). The types of jobs required during construction and operation of the pontoon construction facility would include managers, supervisors and foremen, clerical workers, equipment operators, mechanics, truck drivers, iron workers, carpenters, cement masons, electricians, plumbers, painters, and semi-skilled and unskilled laborers.

Some products and materials used during pontoon construction could be purchased locally in Aberdeen and Hoquiam, and local firms and workers could be involved. Workers and supplies would also likely come from the greater Grays Harbor region (as far as 40 miles away) and other neighboring counties. Economic benefits from the project would not be concentrated in Aberdeen and Hoquiam but could be dispersed throughout the Grays Harbor region and beyond. The extent that construction spending has beneficial effects to the local economy will largely depend on where the labor force resides. The more local workers and firms hired to construct and supply materials for the pontoons, the greater the impact to the local economy. Ultimately, it would be up to the selected contractor to secure vendors and subcontractors and to assemble their workforce.

During project operation of the casting basin facility, existing businesses would cater to the pontoon construction workers in the study area; however, any increase in sales revenues, and resulting sales tax revenues, would likely be small and short-term in duration. In addition, operational-related mitigation measures presented in the transportation technical memorandum (WSDOT 2009b) could be taken to mitigate and improve the level of service at intersections along the haul route, and in turn, fully or partially mitigate economics effects related to congestion and access.

Aberdeen Log Yard Alternative

With respect to facility design, construction, and operation, the Aberdeen Log Yard Alternative would be similar to the Anderson & Middleton Alternative, and its economic effects would be about the same. Although there would be minor differences, discussed below, economic benefits from manufacturing pontoons at the Aberdeen Log Yard site would be similar to those expected from the other build alternative. For both alternatives, there would be a net economic benefit from employment and spending dispersed throughout the Grays Harbor region.

While the number of truck trips during project operation is expected to be the same (an approximate maximum of 27,600 total one-way truck trips), the shorter truck haul route associated with the Aberdeen Log Yard Alternative would lessen traffic-related effects on local business revenues relative to the Anderson & Middleton Alternative site. Apart from this minor difference, economic effects from project operation at any of the build alternatives sites would be similar and would be largely beneficial.

No Build Alternative

Economic effects of the No Build Alternative would be different from those of the build alternatives. Temporary adverse effects on the local economy related to congestion, noise,

and visual quality reduction would not occur under the No Build Alternative. But under the No Build Alternative, the local and regional economies would not benefit from a temporary increase in employment and income from increased spending during project construction.

How would the project affect the economy in the long term?

CTC Facility

After the completion of WSDOT's proposed use, the facility would continue to manufacture other industrial products. The proposed project, therefore, would not perform activities or produce changes that would result in temporary or long-term adverse economic effects or alter local or regional economic conditions.

Grays Harbor Build Alternatives

The long-term effects associated with the project would vary depending on whether a private or public entity found a long-term use for the site after the project is completed. As stated previously, the Grays Harbor region and the cities of Hoquiam and Aberdeen would likely experience a short-term increase in economic output and decreases in unemployment during construction and operation of the casting basin facility. The increase in economic activity would likely be most pronounced during the manufacturing of the pontoons because this is when the employment levels are anticipated to be at their highest levels.

If another entity were to continue operation of the facility for a different use (for example, boat construction), the economic effects on the Grays Harbor region and the cities of Hoquiam and Aberdeen would depend on the number of employees and where they lived. In addition, materials and supplies used during the continued operation of the facility could generate positive economic activity in the study area if the materials are supplied by local businesses. Materials supplied from outside the region would have a less positive effect compared to materials from within the Grays Harbor region.

Overall, market forces, such as regional and national economic trends, would ultimately determine whether the facility is used for another purpose after completion of the proposed project.

How would the alternatives compare in their local and regional economic effects?

Because they are located in the same general vicinity and would be designed, built, and operated in similar ways, the two build alternatives would have similar effects on the local and regional economies, as discussed above. Exhibit 11 summarizes the effects of the build alternatives.

EXHIBIT 11
Economic Effects Matrix

Economic Impact	Proposed Project Site	
	Anderson & Middleton	Aberdeen Log Yard
Overall	Minimal positive and adverse economic effects during project construction and operation. Once the project is completed, the Grays Harbor region and the cities of Hoquiam and Aberdeen would likely experience an increase in unemployment and a decrease in economic output and stability similar to current levels.	Same as Anderson & Middleton.
Employment	Short-term increase in employment during construction and operation of the facility.	Same as Anderson & Middleton.
Business access and parking	Potential for reduced access and parking along the haul route. Longer haul route may impact businesses slightly more than Aberdeen Log Yard Alternative.	Similar to Anderson & Middleton. Shorter haul route may impact businesses slightly less.
Use of CTC facility site	Minimal to no positive and adverse economic effects during project construction and operation. Sustained employment similar to existing operating conditions.	Same as Anderson & Middleton.

4. Mitigation

What measures would WSDOT propose to reduce negative project effects?

To avoid or minimize negative economic effects on local businesses during construction and operation of the project, WSDOT would coordinate with business owners to ensure access for customers is maintained and to notify the public that businesses are open during the construction of the casting basin.

Other potential mitigation measures to reduce traffic congestion, noise, visual and aesthetic, and dust effects during construction and operation of the project, which could deter patrons from local businesses, are identified in the transportation, noise, visual and aesthetics, and air quality technical memoranda (WSDOT 2009b, c, d, f).

How could the project compensate for unavoidable negative effects?

The project would not result in any unavoidable adverse effect on the regional economy. Construction and operation activities could provide net economic benefits in the form of increased employment and income in the study area; therefore, no compensation for unavoidable negative effects will be required.

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