

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

MAY 2010

SR 520 Pontoon Construction Project

Water Resources Discipline Report



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

Water Resources Discipline Report

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Abbreviations and Acronyms

BMP	best management practice
cf	cubic feet
CFR	Code of Federal Regulations
CTC	Concrete Technology Corporation, Inc.
Ecology	Washington State Department of Ecology
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
EPM	Environmental Procedures Manual
FEMA	Federal Emergency Management Agency
GIS	geographic information system
HRM	Highway Runoff Manual
IDD #1	Industrial Development District number 1
MLLW	mean lower low water
lf	linear feet
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NTU	nephelometric turbidity unit
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PGIS	pollutant-generating impervious surface
RCW	Revised Code of Washington
SPCC	Spill Prevention Control and Countermeasure
SR	State Route
TESC	Temporary Erosion and Sedimentation Control
TMDL	Total Maximum Daily Load

TSS	total suspended solids
USC	United States Code
WAC	Washington Administrative Code
WRIA	water resource inventory area
WSDOT	Washington State Department of Transportation
WWTP	Wastewater Treatment Plant

1. Introduction

Why are water resources considered in an EIS?

This discipline report uses the phrase “water resources” to refer collectively to surface water bodies (e.g., marine waters, freshwater lakes, rivers, and streams), stormwater, and groundwater. Water resources are protected under federal, state, and local regulations.

The Clean Water Act (33 USC 1251 et seq.) is the cornerstone of legislation protecting water resources in the United States (EPA 2004b). Passed in 1972, the Clean Water Act responds to widespread public concern about controlling water pollution and protecting America’s water bodies (EPA 2004a). The goal of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of our nation’s waters (EPA 2004b).

The U.S. Environmental Protection Agency (EPA) is the primary federal agency responsible for implementing and enforcing the Clean Water Act. In many cases, however, EPA has delegated its authority and implementation duties to state agencies. In Washington, the Washington State Department of Ecology (Ecology) has been authorized by EPA to administer the National Pollutant Discharge Elimination System (NPDES) permit program and the Pretreatment and General Permits programs, which regulate point and nonpoint source (surface water flow not discharged from particular facilities, such as stormwater) discharges. Ecology is responsible for managing and protecting Washington State’s water resources. In doing so, Ecology has adopted laws that regulate the concentrations of toxic substances allowed in stormwater and surface water bodies, and they have developed manuals detailing approved stormwater treatment and detention procedures.

In addition to the state, the incorporated cities and counties in the area have jurisdiction over water resources, wetlands, and other critical areas in the project vicinity. The Washington Department of Fish and Wildlife, National Oceanic and Atmospheric Administration (NOAA) Fisheries, and U.S. Fish and Wildlife Service also have jurisdiction over water quality as

What are “water resources”?

As used in this report, the phrase “water resources” refers collectively to marine and freshwater surface water bodies (e.g., lakes and streams), stormwater, and groundwater. When the issue under consideration applies to only one element, the report uses “surface water bodies,” “stormwater,” or “groundwater” to identify the specific resource being discussed.

Surface water bodies include marine waters, lakes, streams, ponds, and wetlands.

Stormwater includes stormwater runoff, snow melt runoff, and surface runoff and drainage [40 CFR 122.26(b)(13)]. Drainage can flow across the ground in open ditches, in pipes, or below the surface as interflow.

Groundwater is water found underground in the saturated zone. The saturated zone is that layer of soil that is soaked, or loaded, to capacity with water.

it applies to protecting wetlands and fish and wildlife resources. Regulations related to wetlands and fish and wildlife resources are discussed in Appendix E, Ecosystems Discipline Report, of this Draft Environmental Impact Statement (EIS).

Exhibit 1 lists the agencies responsible for protecting surface water resources, describes the policies and regulations these agencies follow, and explains the purpose of the policies. Groundwater regulations are discussed in the Chapter 2 section titled *What are the groundwater resources in the study area?*

EXHIBIT 1

Summary of Applicable Surface Water Policies and Regulations in the Project Vicinity

Agency/ Organization	Policies and Regulations	Purpose and Intent
Ecology	Clean Water Act (33 USC 1251 et seq.)	Establishes the basic structure for regulating discharges of pollutants to receiving waters.
	Water Quality Standards for Surface Waters of the State of Washington (Washington Administrative Code [WAC] 173-201a)	Sets goals for a water body by designating beneficial uses and assigning water quality criteria to protect those uses.
	<i>Stormwater Management Manual for Western Washington</i> (Ecology 2005a)	Provides technical standards and guidance on stormwater management measures to control quantity and quality of stormwater produced by new development and redevelopment.
Washington State Department of Transportation (WSDOT)	Puget Sound Highway Runoff Program (WAC 173-270)	Establishes procedures and water quality criteria for WSDOT's highway runoff program.
	<i>Highway Runoff Manual</i> (WSDOT 2008a)	Directs the planning and design of stormwater management facilities for new and redeveloped Washington State highways and other facilities. Directs the planning and design of stormwater control measures during construction. WSDOT's Highway Runoff Manual is considered to be equivalent to Ecology's Stormwater Management Manual.
City of Tacoma, Pierce County, City of Hoquiam, City of Aberdeen, Grays Harbor County	<i>Environmental Procedures Manual (EPM)</i> (WSDOT 2008b)	Provides guidelines for complying with federal and state environmental laws and regulations for all phases of project delivery.
	City and county critical or sensitive areas ordinances that establish allowed uses, mitigation standards, and buffers for streams and lakes	Establishes policies and development guidelines to protect the functions and values of critical areas. All cities and counties in Washington are required by the Growth Management Act to adopt critical area regulations (RCW 36.70A.060).

What are the key points of this discipline report?

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, located and currently operating in Tacoma, Washington, 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.

The No Build Alternative, with no change in construction, operation or maintenance, would likely maintain existing conditions because the stormwater discharged from these sites would be unchanged. Stormwater discharged from the Anderson & Middleton and Aberdeen Log Yard sites today is treated in vegetated ditches before being discharged into Grays Harbor. In addition, the Aberdeen Log Yard site has Best Management Practice (BMP) treatment features for total suspended solids (TSS) removal and spill control incorporated into these ditches. Stormwater would continue to be discharged under existing treatment conditions with the No Build Alternative.

The project would have the following effects on water resources at both of the Grays Harbor build alternative sites:

- Stormwater would be treated in accordance with current regulatory requirements for both of the Grays Harbor build alternatives (Anderson & Middleton and Aberdeen Log Yard Alternatives).
- The Grays Harbor build alternatives would increase the area of land covered by pollutant-generating impervious surfaces in the study area. However, both build alternatives would improve or not degrade water quality because stormwater would be treated prior to discharge. Both build alternatives would be designed to meet state and federal water quality regulations.
- Effects that would occur during construction of the build alternatives would be avoided or minimized through the development and implementation of various plans required by permits. These would include erosion control plans, spill control plans, and a concrete containment and disposal plan (CCDP) for handling and managing

concrete onsite, as well as other permit conditions. These plans and permits regulate construction activities on land and in the water to prevent or reduce temporary degradation of water quality from construction activities. 0

- Long-term effects on groundwater would result from dewatering during construction and operation at either site. Creation of the new casting basins would act as a sink and lower groundwater levels proximate to each site, creating a zone of dewatering influence around each site.
- The dewatering associated with the construction and operation of each site could result in some settlement at each site, but would not reduce groundwater flow to Grays Harbor in any detectable amount.
- Construction effects at either build alternative site would be avoided or minimized by implementing required erosion control plans and spill control plans, and by meeting established permit conditions.

What are the project alternatives?

The Pontoon Construction Project 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 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

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.

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.

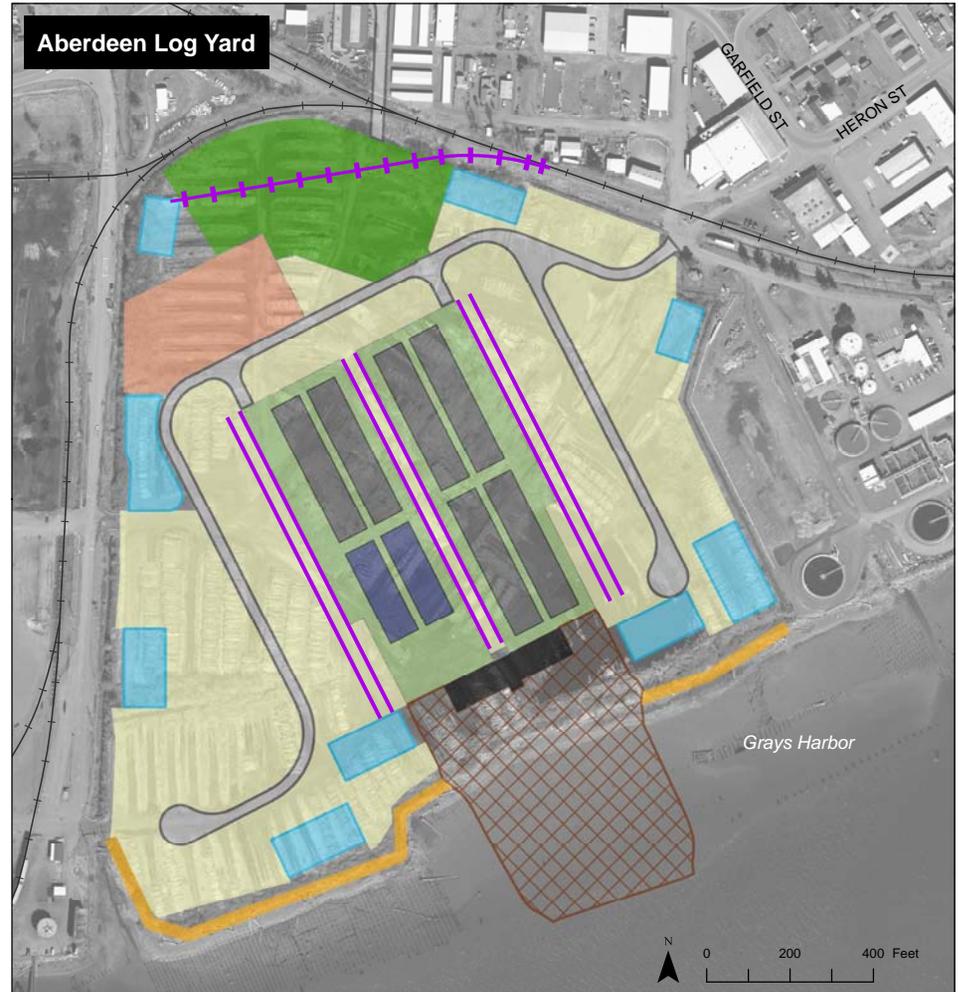
Site Descriptions

Anderson & Middleton Alternative

The 105-acre Anderson & Middleton Alternative site is on the north shore of Grays Harbor in Hoquiam, Washington (Exhibit 2). 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 2). 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



- 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 2. Locations and Conceptual Layouts for Build Alternative Sites

Pontoon Construction Project



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.

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.

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.

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 2). 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.

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.