

Chapter 5 Mitigation

This chapter describes WSDOT's mitigation commitments for the proposed SR 520 Pontoon Construction Project and minimization, avoidance, and mitigation measures WSDOT will take to reduce the project's potential environmental effects if either build alternative is selected. In this chapter, the word "will" is used to describe mitigation measures to which WSDOT is committed if either build alternative is selected, and "could" indicates a suite of specific best management practices from which WSDOT could choose to achieve its mitigation commitments. If the No Build Alternative is selected, then mitigation will not be necessary and the mitigation measures discussed here will not be implemented.

What are mitigation commitments?

Mitigation commitments are project actions and performance standards usually established by regulation to address project effects. To meet these commitments, WSDOT will implement best management practices during construction and carry out specific compensatory mitigation. Commitments for compensatory mitigation include the actions WSDOT will take to offset unavoidable effects to natural resources, such as loss of wetland function or area. Within this chapter, using the term "will" indicates a mitigation commitment. Using the term "could" indicates a suite of specific best management practices from which WSDOT could choose to achieve its mitigation commitments.

WSDOT has completed the *Conceptual Wetland and Aquatic Resources Mitigation Report, Grass Creek* (WSDOT 2010a) to guide its compensatory mitigation for effects on wetlands and fish and aquatic resources (see the sections *How will WSDOT mitigate for direct effects on wetlands?* and *How will WSDOT mitigate for direct effects on fish and aquatic resources?* later in this chapter). This plan is subject to regulatory review and will be finalized as part of the Clean Water Act Section 404 permit and other applicable permits. WSDOT has ensured that this plan compiles with federal, state, and local requirements for effects on natural resources subject to regulation. Although the option of using the CTC facility in Tacoma is not part of either build alternative, WSDOT identifies potential mitigation for the CTC facility option in this chapter.

WSDOT will monitor the proposed mitigation site for 10 years. Monitoring, contingency, and management plans will be developed and then used to adaptively manage the mitigation site.

Ecosystems: Wetlands

What measures does WSDOT propose to reduce direct effects on wetlands?

Federal and state laws require that mitigation efforts follow this prescribed sequence:

1. Avoid the effect altogether by not taking a certain action or parts of an action.
2. Minimize the effect by limiting the degree or magnitude of the action and its implementation by using appropriate technology or by taking affirmative steps to avoid or reduce effects.
3. Rectify the effect by repairing, rehabilitating, or restoring the affected environment.
4. Reduce or eliminate the effect over time by preservation and maintenance operations during the life of the action.
5. Compensate for the effect by replacing, enhancing, or providing substitute resources or environments.
6. Monitor the effect and take appropriate corrective measures.

Avoidance and Minimization

Avoiding effects, to the greatest extent practical, is an essential part of WSDOT's early project planning. For example, WSDOT initially identified a site (IDD #1) adjacent to and directly east of the Anderson & Middleton site for consideration in the Draft EIS as a pontoon construction site alternative. Following wetland delineation at the IDD #1 site, WSDOT estimated that approximately 30 acres of wetland existed onsite. As a result, WSDOT removed IDD #1 from the alternatives considered in this EIS because building a casting basin facility there would require eliminating all 30 acres of onsite wetlands. Constructing the pontoon casting basin at either the Aberdeen Log Yard or Anderson & Middleton site will entail much less wetland acreage loss than would have occurred had the IDD #1 site been pursued. However, due to the size of the proposed casting basin facility, avoiding all effects on wetlands at either build alternative site will not be possible.

The Aberdeen Log Yard site is 55 acres compared to the 105-acre Anderson & Middleton site, all of which will be used for the new casting basin facility. The smaller size of the Aberdeen Log Yard site

severely constrains the casting basin design and layout, and the entire area above the shoreline will be needed to accommodate the facility. Therefore, the 1.04 acres of low-quality palustrine wetlands on the Aberdeen Log Yard site must be removed to build the project there. Effects on the estuarine wetlands along the shoreline will be limited to those within the launch channel.

At the Anderson & Middleton site, only the central area with 4.8 acres of ditched and drainage swale wetlands will be directly affected. WSDOT will avoid effects on wetlands on the site's west side by not extending the facility boundaries that far west. Thus, WSDOT will avoid direct effects on 4.1 acres of palustrine wetlands on the Anderson & Middleton site; these wetlands are densely vegetated and provide some wildlife habitat. By placing the casting basin facility on the central portion of the Anderson & Middleton site, WSDOT will also avoid the Category I estuarine wetland located along the site's southwestern shoreline.

WSDOT will use best management practices to avoid and minimize unintentional effects on remaining wetland areas including, but not limited to, the following:

- Implementing temporary erosion and sediment control measures
- Developing and following a stormwater management and pollution prevention plan
- Prohibiting servicing and refueling of vehicles within 100 feet of aquatic habitats to reduce potential petroleum and hydraulic fluid spills in sensitive areas

In addition, as project design progresses, WSDOT will evaluate other measures to reduce effects. WSDOT could also design additional best management practices to minimize effects on wetlands during pontoon launching and towing. To reduce the possibility that tugboat propeller wash is directed toward the nearshore emergent wetlands, WSDOT could work with boat operators to develop operating recommendations for boats at each site.

How will WSDOT mitigate for direct effects on wetlands?

Constructing either build alternative will require compensatory mitigation to offset unavoidable and permanent loss of existing wetland functions. The goal of compensatory mitigation is to achieve no net loss of wetland functions. WSDOT will follow federal, state, and local requirements for wetland mitigation to determine appropriate compensatory mitigation for project effects.

As part of project design, WSDOT has avoided and minimized effects on wetlands to the greatest extent practicable. WSDOT, working in collaboration with regulatory agencies, selected the Grass Creek mitigation site (see Exhibit 5-1) as the location where compensatory mitigation will be constructed if one of the build alternatives is selected. As part of the mitigation site selection criteria, WSDOT has also conducted analyses to ensure that the selected mitigation site will avoid exposure to toxic materials or effects on culturally significant resources to the greatest degree practicable.

The 66-acre Grass Creek mitigation site is bounded on the east by Grass Creek, a freshwater system tributary to Grays Harbor. The site is currently diked off from Grass Creek to prevent overland flow at the site, although a breach in the dike allows limited saltwater intrusion onto the site. Wetland mitigation will reestablish a range of estuarine wetland habitats along an increasing elevation gradient, from mudflat to upper intertidal salt marsh, and restore natural tidal influence on the site. Specific actions will include removing long sections of the dike, filling drainage ditches, and allowing natural recolonization of the formerly grazed pasture with estuarine and palustrine native plant species. A portion of the site will also be rehabilitated to improve wetland buffer functions to the site. Specific acreages for rehabilitated areas associated with the selected alternative will be quantified in the final mitigation plan that will accompany the Clean Water Act Section 404 permit.

Only Practicable Alternative Finding

The proposed SR 520 Pontoon Construction Project complies with Protection of Wetlands, Executive Order 11990 of 1977, which requires federal agencies to minimize the loss or degradation of wetlands and enhance their natural state. WSDOT has avoided effects on wetlands through development of the project alternatives and the preliminary design process. For example, while refining alternatives during the environmental process, an alternative (Port of Grays Harbor Industrial Development District #1) was eliminated from further consideration because WSDOT determined that wetlands occupied much of the site. Where effects on wetlands could not be avoided with the project alternatives analyzed in this Final EIS, the alternatives were designed to minimize effects on wetlands.

There are no practicable alternatives that would fully avoid wetlands; all practicable project alternative sites contain wetlands. The project's Preferred Alternative is the alternative that would result in the least effects on wetlands because there are fewer wetlands on and adjacent to the Aberdeen Log Yard site that would be affected by the project.



 Mitigation site boundary

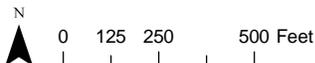


Exhibit 5-1 Grass Creek Mitigation Site

SR 520 Pontoon Construction Project



With avoidance and minimization measures in place, the Preferred Alternative is expected to eliminate approximately 1.1 total acres of wetlands. Measures proposed to mitigate for effects on wetlands are described above in the *Wetlands Mitigation* section. All wetlands that are eliminated will be mitigated in accordance with the Clean Water Act and other applicable permits and requirements.

Based on the above considerations, FHWA and WSDOT determined that there is no practicable alternative to the proposed alternatives that would eliminate effects on wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands that could result from such use.

How will WSDOT mitigate for indirect effects on wetlands?

CTC Facility

With no direct or indirect wetland effects on wetlands as a result of the project at the CTC facility, WSDOT does not propose any mitigation measures for use of the CTC facility to build pontoons.

Grays Harbor Build Alternatives

Indirect effects on wetlands not affected by casting basin facility construction at the Anderson & Middleton property could occur as a result of dewatering, although based on existing data, this would be unlikely. Should this site be selected for casting basin construction, then the unaffected wetlands on the western portion of the Anderson & Middleton property could be more carefully analyzed and monitored for potential dewatering effects. WSDOT would use adaptive management (monitoring for potential effects and changing management practices in response to avoid, minimize, or mitigate effects) to address unanticipated consequences of dewatering. If offsite wetlands are identified within the dewatering zone of influence at the Aberdeen Log Yard site, then a similar approach could be implemented to determine whether wetlands were being adversely affected by dewatering.

How could cumulative effects on wetlands be mitigated?

The federal wetland regulatory goal of no net loss and recently updated state and local regulations for protecting and managing critical areas under the Growth Management Act are intended to slow the cumulative decline of wetlands. Beyond these measures, the cumulative effect of converting and losing wetlands could be mitigated by more stringent regulations, greater regulatory consistency and coordination among jurisdictions, improved planning at both regional and local levels, and increased participation of nongovernmental organizations and other

stakeholders in restoration efforts. Long-term programs, such as watershed-based mitigation and mitigation banking, could also aid in protecting wetland resources.

Ecology has prepared two guidance documents to facilitate more effective compensatory wetland mitigation: *Wetland Mitigation in Washington State, Part 1: Agency Policies and Guidance* (Ecology et al. 2006a), and *Wetland Mitigation in Washington State, Part 2: Developing Mitigation Plans* (Ecology et al. 2006b). Both of these documents were prepared as part of a collaborative effort among Ecology, the U.S. Army Corps of Engineers, and the EPA. More effective compensatory wetland mitigation can help counter the cumulative effects that have occurred over the last century by providing mitigation that considers historical conditions and prioritizing the restoration of ecological processes within the watershed.

Both Grays Harbor build alternative sites are within an area that is subject to Grays Harbor County's *Estuary Management Plan* (Grays Harbor County 1986), which provides management goals, guidelines, policies, and conditions on proposed actions within the plan area. This plan also helps to avoid piecemeal decision-making and serves as a tool for estuarywide management. Some areas of the estuary plan are devoted to managing fish, wildlife, and plant resources, while others allow for certain types of economic development. Estuarywide management can also help to counter the cumulative effects that have occurred in Grays Harbor by supporting more meaningful larger-scale preservation efforts and context-sensitive development.

Ecosystems: Fish and Aquatic Resources

What mitigation measures does WSDOT propose to reduce direct effects on fish and aquatic resources?

Avoidance and Minimization

CTC Facility

Because the CTC facility is already in place and WSDOT anticipates no effects on fish and aquatic resources outside of the normal, already-permitted operation of the existing facility, WSDOT does not anticipate that any mitigation will be required, other than fish-handling protocols to minimize effects on fish that enter the basin while the gate is open and pontoons are being towed out. WSDOT will develop and implement fish handling protocols for removing fish that might enter the casting basin, with input from the WDFW, USFWS, and NOAA Fisheries.

Grays Harbor Build Alternatives

Avoiding effects, to the greatest extent practical, is an essential part of WSDOT's early project planning. WSDOT will apply best management practices to help minimize direct effects on fish from casting basin facility construction and operation. WSDOT will handle and treat all stormwater runoff in accordance with state water quality requirements using WSDOT's *Highway Runoff Manual* (WSDOT 2008a), and use features such as sediment ponds and wet ponds (constructed basins that have a permanent pool of water throughout the year) for stormwater retention to prevent water quality degradation.

WSDOT will implement some or all of the following best management practices at either build alternative site:

- Perform in-water work only during published work windows, as directed by the appropriate agencies, to minimize the likelihood that fish are present during the in-water construction activities
- Implement measures to minimize the loss of sediment or debris from the dredging footprint
- Design and implement a fish-handling system at the casting basin to minimize or eliminate fish stranding or entrapment within the facility
- Implement best management practices, such as using bubble curtains, for sound attenuation during in-water pile-driving, thus minimizing underwater noise levels that could injure fish
- Develop a spill prevention, control, and countermeasures plan and maintain the necessary materials for containing accidental spills onsite before and during construction
- Prepare and implement a temporary erosion and sediment control plan to minimize and control pollution and erosion from stormwater

WSDOT proposes locating the pontoon moorage in deep water away from the shoreline where the pontoons would have minimal effects on tidal exchange, currents, or substrate distribution in Grays Harbor, all of which might affect fish. (Exhibit 2-7 in Chapter 2, Project Alternatives, shows the proposed moorage locations). To ensure that no invasive aquatic species, such as green crab, are transported out of Grays Harbor on the pontoons, WSDOT will monitor the pontoons for aquatic species growth and clean the pontoons, as needed, before they leave the harbor. For pontoon moorage, WSDOT has also selected the least environmentally damaging anchor system available, which will cause the least disturbance on harbor sediments and add the least amount of underwater structure.

WSDOT will minimize potential effects on tribal fishing, including crab harvesting, by coordinating directly with the Quinault Indian Nation and tribal managers to limit project activities that would interfere with fishing during periods of active treaty fishing.

How will WSDOT mitigation for direct effects on fish and aquatic resources?

In cooperation with regulatory agencies and tribes and as part of the required permit applications, WSDOT will mitigate for project effects on fish and aquatic resources and their habitat by rehabilitating a portion of the shoreline of the Grass Creek estuary and existing tidal channels at Grass Creek to provide aquatic habitat and functions to the estuarine food chain.

The greater level of design of the launch channel for the Aberdeen Log Yard Alternative allowed WSDOT to account more specifically for how much of the Grass Creek mitigation is required to compensate for the SR520 Pontoon Construction Project's effects, and to quantify that 46.02 acres of the mitigation at Grass Creek is not specifically needed for the SR 520 Pontoon Construction Project but may be used as mitigation for future projects in the area. For example, the mitigation at the Grass Creek site is designed to at least offset the specific reduction in aquatic habitat function at the Aberdeen Log Yard site (and the pontoon moorage site). WSDOT was able to determine by examining elements of the Preferred Alternative design that the overall aquatic impact of the project would be 2.51 acres, including intertidal and subtidal habitat at the Aberdeen Log Yard site launch channel.

Aquatic resources mitigation at the Grass Creek mitigation site will include removing portions of the dike along the eastern boundary to restore and enhance the natural hydrology and tidal exchange in five existing tidal channels. WSDOT will use material excavated from the dike to fill an existing built ditch located around the inner perimeter of the existing dike. This action will improve floodplain connectivity in the existing tidal channels and create backwater channels (also called blind sloughs). The conceptual mitigation plan (WSDOT 2010a) also calls for creating open mudflat habitat at the junction of a blind tidal channel and Grass Creek.

In addition to creating mudflat, WSDOT will rehabilitate portions of the existing degraded mudflat tidal channels by removing a nonfunctioning tide gate to help restore the natural hydrology and tidal exchange in an existing tidal channel. Habitat complexity on the floodplain will be created by installing habitat features (e.g., coarse woody debris) to increase organic material and nutrient input.

How will WSDOT mitigate for indirect effects on fish and aquatic resources?

CTC Facility

The CTC facility is currently in operation, and WSDOT does not anticipate any indirect effects to occur with ongoing use of the site to construct pontoons for their projects; as a result, no mitigation is proposed.

Grays Harbor Build Alternatives

As noted above, WSDOT will adopt best management practices during casting basin development and pontoon-building operations to avoid or minimize direct effects on fish and aquatic resources; these measures will also reduce indirect effects. WSDOT will also design mitigation to offset the anticipated direct and indirect effects at the Grass Creek mitigation site. Mitigation at Grass Creek will include creating nearshore or estuarine intertidal habitat that provides high-functioning resting, holding, and migration habitat for the affected aquatic resources.

How could cumulative effects on fish and aquatic resources be mitigated?

WSDOT anticipates that agencies, tribes, and nongovernmental organizations, such as the Friends of Grays Harbor, will continue to work together to develop both a regulatory framework, and a nonregulatory approach (such as volunteer habitat restoration events) that prioritizes habitat restoration actions for maximum benefit to the fish and aquatic resources within Grays Harbor. Cumulative effects on fish and aquatic resources could be minimized by several measures. To aid in recovering fish stocks, a regionwide cooperative interagency approach and/or public-private partnership could focus on substantially improving fish habitat conditions and water quality within WRIs 22 and 23, including Grays Harbor and its tributaries. Efforts to remove derelict fishing gear could be coordinated and enhanced. Derelict fishing gear is commonly understood to be unused or abandoned fishing gear, including lines, nets, hooks, and crab pots. These items can accumulate on the sea floor and continue to capture the species they target as well as other sea life. They can also entangle active fishing gear, thus creating more derelict gear. Derelict gear can also be a hazard to divers and recreational users of the harbor.

Ecosystems: Wildlife

What mitigation measures does WSDOT propose to reduce direct effects on wildlife?

Avoiding effects, to the greatest extent practical, is an essential part of WSDOT's early project planning. By proposing that the Grays Harbor casting basin facility be built at an existing industrial-zoned site, the

project will avoid high-quality wildlife habitats and minimize effects on wildlife and wildlife habitat. In addition, site design at the Anderson & Middleton site will allow WSDOT to avoid the most highly functioning wildlife habitats at that site. To reduce the potential for in-water pile-driving to injure or disturb marine mammals and foraging seabirds, WSDOT will use pile-installation practices and sound attenuation methods designed to minimize biological effects. Wildlife habitat functions related to wetland effects will be enhanced through the wetland regulatory process and compensatory mitigation at the Grass Creek mitigation site, as previously discussed. During pontoon moorage in Grays Harbor, WSDOT will inspect the pontoon anchor cables for ensnared fishing nets and gear once a year (likely in December) following the established commercial fishing seasons. WSDOT will remove any derelict fishing nets to avoid and minimize the risk of foraging marbled murrelets becoming entangled in them.

How will WSDOT mitigate for indirect effects on wildlife?

WSDOT does not anticipate that activities during casting basin construction, pontoon construction, pontoon towing, or pontoon moorage will have substantial indirect adverse effects on wildlife and does not propose to mitigate for indirect effects on wildlife.

How could cumulative effects on wildlife be mitigated?

Addressing cumulative effects of population growth and land development on wildlife and their habitat requires long-range planning that balances critical habitat preservation and economic development. As previously noted, the cities of Hoquiam and Aberdeen both have comprehensive plans and critical areas ordinances that guide future community development so that cumulative effects on natural resources, including wildlife, can be considered (City of Hoquiam 2008a, 2009b; City of Aberdeen 2001, 2009).

WSDOT does not mitigate for direct effects on wildlife, unless these effects occur to federal, state, or locally significant species (in accordance with the local Critical Areas Ordinance, for example). However, the wetland mitigation requirements to be undertaken at the Grass Creek mitigation site will result in improved habitat quality over existing conditions. Therefore, cumulative effects to wildlife will be addressed to the extent that the proposed compensatory mitigation will result in a net increase in habitat conditions within the region.

Geology and Soils

What mitigation measures does WSDOT propose to reduce direct effects on geology and soils?

Effects such as soft soil settlement, slope instability, and erosion will be limited or eliminated by using proper design and construction techniques as described below. If the project were to cause damage from ground settlement, WSDOT would work with property owners to find an acceptable solution to repair the damage.

Erosion and Sedimentation Control

WSDOT will reduce erosion and sedimentation caused by project construction by limiting the period when soil is exposed to erosion or disturbed. During casting basin facility construction, WSDOT will implement erosion and sedimentation control practices to achieve water quality standards and apply, at a minimum, best management practices following Ecology and WSDOT guidelines. Listed below are some possible best management practices for erosion and sedimentation control:

- Install quarry spalls (crushed rock)
- Conduct regular sweeping and washing of adjacent roadways
- Install silt fences downslope of all exposed soil
- Construct quarry spall-lined temporary ditches, with arranged straw bales or other sediment catchment dams
- Install temporary covers over soil stockpiles and exposed soil
- Construct temporary sedimentation ponds to remove solids prone to settling before discharge
- Place limits on the area exposed to runoff at any given time

Ground Settlement

WSDOT will refine settlement estimates as the project design continues. Potential settlements caused by project construction and operation could damage pipes, structures, or rail lines. WSDOT is committed to implementing best management practices to avoid or reduce potential dewatering effects, such as ground settlement. Best management practices to minimize potential dewatering effects related to settlement could include the following:

- Underpinning sensitive structures
- Reinjecting or reinfiltrating groundwater locally near susceptible facilities so that compressible soils are not dewatered (the project design described in Chapter 2 does include reinfiltrating groundwater from dewatering activities into infiltration trenches.)

Ground settlement could occur due to stockpiling excavated materials or the storage of imported materials. Potential measures to prevent ground settlement effects related to stockpiling are listed below:

- Stockpile materials at a specified distance from the perimeter of the proposed casting basin and from the buried utilities to avoid inducing settlement that could damage the basin or utilities.
- Stockpile materials at a sufficient distance from the site boundaries to avoid affecting adjacent structures or the stability of the slopes along the water bodies.

If ground settlement occurs that results in damage to pipes, or structures, WSDOT would be prepare plans for repair or reconstruction, mobilize repair or reconstruction materials to the site, monitor settlement, and be prepared to repair damage.

Slope Stability

WSDOT will mitigate the potential for destabilizing slopes and earth-retaining structures with proper design and construction. The design of slopes and earth-retaining structures (both temporary and permanent) will include standard factors of safety against movement during construction, long-term static conditions, and long-term seismic conditions. Berms and slopes that have no effect on structures or critical or costly utilities are not designed to resist seismic conditions unless a life safety concern exists. WSDOT might implement stabilization measures, such as installing quarry rock riprap to stabilize the sides of the launch channel at either site, if further study indicates that it would be necessary to prevent degradation. If the Anderson & Middleton Alternative were to be selected, WSDOT will implement stabilization measures, such as using quarry rock riprap to repair the berm's existing slope degradation, if it appears that stabilizing the berm would prevent further slope degradation.

Stabilization in Liquefaction Hazard Areas

WSDOT will implement ground improvements if further study indicates it would be needed to mitigate the effects of liquefaction and lateral spreading. The improvement zone would extend vertically from the ground surface to the limits of liquefiable soil. Groundwater flow direction would likely be diverted around such ground improvements, if installed. Improvements for liquefaction mitigation may only be necessary around structures and expensive or life-safety-critical utilities.

How will WSDOT mitigate for indirect effects on geology and soils?

WSDOT will mitigate the potential release of sediments and high pH water during pontoon-building operations at either Grays Harbor build

alternative site by properly implementing erosion and sediment control measures at the site. Long-term settlement will be mitigated by using proper design and construction techniques. If the project were to cause damage to nearby pipes, structures, or rail lines, then WSDOT would work with property owners to find an acceptable solution to repair the damage.

How could cumulative effects on geology and soils be mitigated?

Because the SR 520 Pontoon Construction Project's contribution to cumulative effects will be very small, potential mitigation measures to address them are not proposed.

Hazardous Materials

What mitigation measures does WSDOT propose to reduce direct effects related to hazardous materials?

CTC Facility

WSDOT will prepare a project-specific spill prevention, control, and countermeasures plan before any construction activities begin. This plan will describe steps needed to mitigate effects on soil, surface water, and groundwater. This plan will also address procedures, equipment, and materials to be used if a spill of contaminated soil, petroleum products, contaminated water, or other hazardous substances occurs.

Grays Harbor Build Alternatives

Because Grays Harbor is adjacent to the build alternative sites and the harbor requires special protection from spills or releases of hazardous materials, WSDOT will prepare a project-specific spill prevention, control, and countermeasures plan before any construction activities begin. This plan will describe steps needed to mitigate effects on soil, surface water, and groundwater. This plan will also address procedures, equipment, and materials to be used if a spill of contaminated soil, petroleum products, contaminated water, or other hazardous substances occurs. During proposed project construction, including launch channel maintenance dredging, WSDOT will use standard best management practices to avoid and reduce potential effects from the project. WSDOT will manage and dispose of contaminated soil and/or groundwater in accordance with applicable permits and regulations and will implement construction techniques that minimize disturbance to the subsurface and disturbance or release of contaminants into the aquatic environment.

WSDOT will use standard best management practices to avoid and reduce potential effects from the project related to hazardous materials.

These best management practices will be designed in accordance with WSDOT's *Environmental Procedures Manual* (WSDOT 2008b) and *Highway Runoff Manual* (WSDOT 2008a).

Because both sites contain buried wood waste, workers could encounter hydrogen sulfide and methane gas during excavation; therefore, WSDOT will develop a comprehensive health and safety plan. This plan will include procedures for monitoring vapor releases and preventing fires caused by potential methane ignition. In addition, procedures will be established to provide adequate ventilation, particularly during activities involving confined spaces or trenching work. To address the potential presence of methane gas during operation, specific design measures might be required to limit methane gas from migrating on the site and to provide appropriate ventilation to keep methane gas buildup to levels below the explosive limit.

Because the project will not produce long-term, unavoidable, negative effects related to hazardous materials, no compensatory mitigation will be necessary.

How will WSDOT mitigate for indirect effects related to hazardous materials?

CTC Facility

WSDOT has not identified any indirect effects related to hazardous materials as part of the existing CTC facility. As a result, no mitigation measures are proposed.

Grays Harbor Build Alternatives

WSDOT will minimize or mitigate any long-term cleanup liability as a result of acquiring either Grays Harbor build alternative site by thoroughly investigating the site and/or requiring that the current property owner conduct site cleanup before the site is acquired. The negative indirect effect of becoming liable in the future for the cleanup of contaminated media disposed of offsite will be mitigated or reduced by conducting appropriate waste characterization and maintaining proper disposal records in accordance with applicable rules and regulations.

How could cumulative effects related to hazardous materials be mitigated?

Because SR 520 Pontoon Construction Project is expected to have an incrementally positive cumulative effect on hazardous materials no mitigation is proposed. Hazardous materials from other projects could, however, enter the air and water and eventually affect human health and ecosystems. Hazardous materials can be associated with contaminated soils and groundwater, building materials encountered through

demolition, accidental spills at construction sites, and leaking underground storage tanks. Depending on the type of contamination, there could be risks to worker safety and public health as well as environmental damage. Redevelopment and transportation improvement projects improve hazardous materials conditions because contaminated soil or water encountered during construction must be removed and disposed of, thereby leaving the site cleaner than it was before.

Implementing best management practices, adhering to standard operating procedures, and complying with health and safety procedures and regulations will minimize the potential contribution to the cumulative hazardous materials effects listed above and help to slow the rate at which hazardous materials are accumulating in the environment. WSDOT assumes that best management practices and regulatory compliance would be implemented by foreseeable projects and that the overall cumulative effect of this project, combined with other reasonably foreseeable projects on hazardous materials, would likely be beneficial.

Water Resources

What mitigation measures does WSDOT propose to reduce direct effects on water resources?

WSDOT will incorporate water quality treatment facilities and best management practices into the project design to ensure that the proposed project will comply with the applicable federal, state, and local regulations to protect water resources. Complying with the federal Clean Water Act (33 USC 1251 et seq.), the state NPDES permit program, and the state Pretreatment and General Permits programs will prevent unavoidable adverse effects on the water resources in the study area.

Stormwater at either build alternative site will be treated in compliance with the conditions identified in the NPDES general construction stormwater permit (Ecology 2005b) obtained for the project. This permit has a number of monitoring and discharge conditions that will be implemented to prevent effects on surface water. At either build alternative site, stormwater treatment will include such measures as wet ponds and infiltration trenches in areas with impervious surface (though the current design does not include infiltration of stormwater). Both build alternatives will directly discharge treated stormwater to Grays Harbor, a flow control exempt water body (Ecology 2005b), or the City of Aberdeen wastewater treatment system (on a contingent basis), thereby avoiding flow effects on any local streams or rivers.

Construction at either build alternative site will also require that a temporary erosion and sediment control plan be developed (as a part of

the overall stormwater pollution prevention plan), as well as a spill prevention, control, and countermeasures plan.

If total suspended solid levels exceed the permit requirements, then WSDOT will apply Ecology-approved best management practices—such as chitosan treatment—to lower the suspended solid levels to permitted levels prior to discharge. Chitosan (a substance produced from chitin, a structural element in crab and shrimp shells) removes suspended sediments in water by causing fine sediment particles to bind together and drop out of suspension. WSDOT will implement neutralization measures such as carbon dioxide sparging (bubbling) in the water to neutralize the pH levels in the water if pH levels exceed discharge criteria. WSDOT will take steps, if necessary, to prevent the discharge of water above permitted turbidity levels, such as diverting some process water from the Aberdeen Log Yard site to the adjacent wastewater treatment plant for treatment before being discharged into Grays Harbor, or reinfiltrating groundwater pumped from the dewatering system into the ground using infiltration trenches.

A process water treatment facility will treat process water generated during pontoon construction. At the Aberdeen Log Yard site, this treatment facility might also include a system to allow discharge of acceptable water to the City of Aberdeen wastewater treatment plant for additional treatment, as needed.

Launch channel dredging at either Grays Harbor build alternative site will conform to the conditions specified in the *Dredged Material Evaluation and Disposal Procedures Users' Manual* (DMMO 2009) developed according to the guidance from the Dredge Material Management Office. This plan will contain best management practices to limit sediment resuspension and contain and prevent the transport of resuspended sediments. Wherever possible, dredging will be conducted using an environmental clamshell bucket that is closed, vented, and sealed to minimize dredged material from being released and redistributed into the water column during dredging. Dredging will be carried out in a carefully controlled manner to reduce the sediment suspension in the water column. Specific control procedures may include deploying and retrieving the dredge bucket slowly, and bringing the bucket to the surface each time it is deployed. Material will not be stockpiled within the mudflat area.

How will WSDOT mitigate for indirect effects on water resources?

Since WSDOT does not expect any adverse indirect effects on water resources near the CTC facility or either Grays Harbor build alternative site, no mitigation measures is proposed.

How could cumulative effects on water resources be mitigated?

The overall cumulative effect of the SR 520 Pontoon Construction Project in combination with other planned projects would be a gradual increase in surface water quality from new development and redevelopment projects; there is no need to mitigate for positive cumulative effects.

Air Quality

What mitigation measures does WSDOT propose to reduce direct effects on air quality?

CTC Facility

The CTC facility is currently operating; therefore, there will be no additional air quality effects beyond existing conditions. No mitigation measures, beyond using best management practices to control emissions, are proposed.

Grays Harbor Build Alternatives

State law requires construction site owners and/or operators to take reasonable precautions to prevent fugitive dust from becoming airborne. WSDOT will use standard mitigation measures, such as planting vegetation in areas that will not handle vehicle traffic on either site, to control dust. Exhaust emissions will be reduced whenever possible by keeping machinery engines and exhaust systems in good mechanical condition. In addition, odors will be minimized by using techniques such as covering loads of hot asphalt. Emissions from operating concrete batch plants at the proposed facility will be regulated by the applicable clean air agency for the project.

Federal regulations require using ultra-low-sulfur diesel fuel in on-road trucks and construction equipment. WSDOT will encourage reducing equipment and vehicle idling time and using newer construction equipment or equipment with add-on emission controls.

For the onsite concrete batch plant, the operator will have to obtain an air permit from the local air agency and install any required air pollution control equipment, to control dust, for instance. The concrete batch plant will operate according to permit conditions, which will minimize air quality effects.

How will WSDOT mitigate for indirect effects on air quality?

WSDOT will consider incorporating several measures to avoid traffic delays and congestion during casting basin and pontoon construction,

such as signal timing adjustments, revised channelization, added lane capacity, or restricted turning movements. These measures are also discussed later in this chapter under *Transportation*.

How could cumulative effects on air quality be mitigated?

The proposed project would be relatively short in duration, and its contribution to cumulative air quality effects from trucks hauling materials and employee vehicles would be correspondingly small. Although emissions generated during the project could result in effects lasting beyond the life of the project, continuing advancements in automobile technology, fuel content regulations, and the increased availability of alternative fuels beyond the life of the project are likely to mitigate for the project's short-term contribution over the long-term future. Also, most government agencies implementing public projects include contractual requirements for contractors to use well-maintained vehicles, which reduce emissions.

Energy

What mitigation measures does WSDOT propose to reduce direct effects on energy use?

Building the casting basin at Grays Harbor, fabricating the pontoons, and transporting the pontoons to their moorage locations will consume energy that would no longer be available for other purposes. WSDOT will implement the following measures to minimize the unintended negative effects of energy consumption:

- Use construction practices that encourage efficient energy use, such as avoiding double-handling excavated soil, limiting idling equipment, and locating staging areas near work sites.
- Encourage construction workers to carpool.
- Purchase construction materials from local suppliers to limit transportation fuel consumption.
- Encourage using efficient lighting systems in the casting basin facility.
- Coordinate with the local utilities to minimize the impact on energy demand and supply.
- Use solar-powered, light-emitting diode lights to illuminate the moored pontoons.

How will WSDOT mitigate for indirect effects on energy use?

No indirect effects related to energy are expected as a result of the project.

How could cumulative effects on energy use be mitigated?

The State of Washington and its transportation partners are working to reduce energy use and greenhouse gas emissions from the transportation sector throughout the state. Examples of these activities include supporting increased vehicle fuel efficiency; providing alternatives to driving alone (such as vanpooling and transit); developing transportation facilities that encourage transit, HOV, bicycle, and pedestrian travel; supporting land use planning and development that encourage such travel modes (such as concentrating growth within urban growth areas); and optimizing system efficiency.

How will WSDOT minimize project emissions?

Total greenhouse gas emissions from each project alternative will depend on several variables:

- Energy used to construct the site
- Energy used to build the pontoons
- Distance of truck trips transporting materials
- Fuel used to transport the finished pontoons to the moorage site
- Efforts to reduce energy use will also reduce greenhouse gas emissions.

WSDOT will seek to set up active construction areas, staging areas, and material transfer sites in ways that reduce equipment and vehicle idling. WSDOT will, for example, encourage contractors to reduce equipment and vehicle idling time and to use newer construction equipment or equipment with add-on emission controls. WSDOT will also work with our partners to promote ridesharing and other commute trip reduction efforts for project employees. Because fuel use is directly related to greenhouse gas emissions, any steps taken to minimize fuel use will reduce greenhouse gas emissions as well.

Cultural Resources

What mitigation measures does WSDOT propose to reduce direct effects on cultural resources?

Although WSDOT identified no direct effects on cultural resources as a result of the proposed SR 520 Pontoon Construction Project, WSDOT will develop and implement an archaeological monitoring plan and Unanticipated Discovery Protocol in consultation with the DAHP and interested and potentially affected tribes as an avoidance measure to reduce the risk of inadvertently affecting an unidentified resource. These plans will describe how and where construction activities will be monitored and what will be done if cultural resources are encountered including provisions for diverting construction activities away from those resources or stopping work.

CTC Facility

The project will not affect cultural resources at the CTC facility; therefore, WSDOT proposed no measures to avoid, minimize, or mitigate effects.

Aberdeen Log Yard Alternative (Preferred Alternative)

WSDOT received formal concurrence from DAHP in July 2010 that the project would not have an adverse effect on cultural resources if the Aberdeen Log Yard Alternative is selected. Therefore, mitigation for effects would not be necessary. As mentioned above, although WSDOT identified no direct effects on cultural resources from the proposed SR 520 Pontoon Construction Project, WSDOT will develop and implement an archaeological monitoring plan and Unanticipated Discovery Protocol in consultation with the DAHP and interested and potentially affected tribes. This will serve as an avoidance measure to reduce the risk of inadvertently affecting an unidentified resource.

Anderson & Middleton Alternative

Archaeological investigations identified the presence of one historic property on the Anderson & Middleton Alternative site that would be adversely affected by constructing the casting basin there; it is eligible for listing in the NRHP. If the Anderson & Middleton Alternative were selected, WSDOT will need to develop a Memorandum of Agreement with DAHP and tribes to resolve issues related to the NRHP-eligible resource. Also, WSDOT will mitigate effects to the resource by developing and implementing an archaeological treatment plan. Mitigation might include, but is not limited to, data recovery (scientific excavation and analysis) of the archaeological sites and archaeological monitoring during construction to ensure that no (previously unknown) cultural resources are affected.

How will WSDOT mitigate for indirect effects on cultural resources?

The project will not have indirect effects on cultural resources; therefore, WSDOT proposed no measures to avoid, minimize, or mitigate indirect effects.

How could cumulative effects on cultural resources be mitigated?

The National Historic Preservation Act requires that states maintain preservation plans and a review process to minimize potential harm and damage to historic properties. SEPA and NEPA require that impacts on cultural resources be considered during the public environmental review process. Meeting the requirements of Section 106 of the National Historic Preservation Act, NEPA, and Washington state regulations (as presented in Section 3.7 of Chapter 3 under the heading *What regulations apply to cultural resources?*) presumably has slowed the cumulative decline of cultural properties. Beyond these measures, cumulative effects on cultural properties could be mitigated by more stringent regulations; greater regulatory consistency and coordination among jurisdictions; improved planning at both regional and local levels; and increased participation of nongovernmental organizations, tribes, and other stakeholders.

Economics

What mitigation measures does WSDOT propose to reduce direct effects on the economy?

The economic effects of the project will be largely beneficial. To avoid or minimize negative economic effects on local businesses during project construction and operation, WSDOT will work with local businesses to ensure that customer access is maintained and to notify the public that businesses are open during casting basin construction.

Some potential mitigation measures to reduce traffic congestion, noise, and dust effects during project construction and operation include restriping for better traffic channelization and constructing a noise wall or earthen berm at the Anderson & Middleton site to reduce operation noise. Other potential measures are described in the Air Quality, Noise, and Transportation sections (Section 3.5, 3.10, and 3.14 in Chapter 3, respectively) of this Final EIS.

The project will not result in any unavoidable adverse effect on the regional economy. Project construction and operation will provide net economic benefits in the form of increased employment and income in

the study area; therefore, no mitigation for unavoidable negative effects is proposed.

How will WSDOT mitigate for indirect effects on the economy?

CTC Facility

The project will not result in any unavoidable adverse indirect effects on the CTC facility's regional economy. In the study area, construction and operation activities will provide net economic benefits in the form of increased employment and income; therefore, no mitigation for unavoidable negative effects will be required.

Grays Harbor Build Alternatives

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

How could cumulative effects on the economy be mitigated?

No mitigation would be necessary because any notable cumulative effects associated with economics would be positive.

Navigable Waterways

What mitigation measures does WSDOT propose to reduce direct effects on navigable waterways?

WSDOT will design mitigation measures to avoid or minimize adverse project construction and operation effects, including measures designed in accordance with appropriate U.S. Coast Guard regulations concerning nonpowered vessel movement (towing) and pontoon moorage for storage. These mitigation measures will include the following:

- Coordinating with the appropriate U.S. Coast Guard authorities when towing construction materials or completed pontoons to avoid conflicts with arriving or departing vessels
- Coordinating with port and pilotage districts to ensure pilot availability during pontoon movements in and out of these jurisdictions
- Providing appropriate lighting during storage at all moorage locations to limit effects on recreational vessel movement outside of the navigation channel
- Restricting towing activities based on the weather conditions

- Publishing Notices to Mariners concerning the movement and storage of pontoons at all locations

How will WSDOT mitigate indirect effects on navigation?

Because WSDOT has not identified any indirect effects on navigable waterways in the study area, no mitigation measures are proposed.

How could cumulative effects on navigable waterways be mitigated?

WSDOT does not expect that the project would contribute to cumulative effects on navigable waterways; therefore, no proposals to reduce cumulative effects are discussed.

Noise

What mitigation measures does WSDOT propose to reduce direct effects on noise levels?

CTC Facility

No noise effects are predicted from operation at the CTC site; therefore, no noise mitigation is proposed.

Grays Harbor Build Alternatives

WSDOT will implement several construction noise abatement methods to limit the effects of construction noise, including operational methods, equipment choice, and acoustical treatments. Specific measures may include the following; Appendix L, Noise Technical Memorandum, provides a more comprehensive list:

- Require that all engine-powered equipment have mufflers installed according to the manufacturer's specifications
- Install temporary or portable acoustic barriers around stationary construction noise sources, such as a concrete batch plant
- Shut off idling equipment
- Notify nearby residents whenever extremely noisy work would occur
- Coat the piles
- Use pile pads
- Use piston mufflers on pile-driving hammers

Information on mitigating noise effects on fish and wildlife can be found in the Ecosystems section of this chapter.

WSDOT will require that daily construction logs/reports be kept for each construction area. The logs/reports will contain general construction information such as the time activities occurred, the type of equipment used, and other information that might help with potential noise effects. A construction project hotline will be established to allow the public to communicate with and bring concerns to the contractor. A construction monitoring and complaint program will help to ensure that all equipment meets state, local, and manufacturers' specifications for noise emissions. Equipment that does not meet the standards will be removed from service until proper repairs are made, and the equipment is retested for compliance. This procedure will apply to all major contributors to potential noise, such as haul trucks, excavators, and other equipment used extensively at the construction sites.

If project construction or operations activities continue at nighttime (after 8 p.m. in Hoquiam or 10 p.m. in Aberdeen and before 7 a.m. at either site), then WSDOT will meet with the appropriate city officials to ensure compliance with the local jurisdiction's noise control ordinances, and approved noise variances. A noise variance sets alternate maximum noise limits, which are based on a variety of factors such as the proximity of noise-sensitive properties and the existing noise levels in the immediate area.

Aberdeen Log Yard Alternative (Preferred Alternative)

Noise levels are not predicted to exceed the WAC noise control thresholds at the Aberdeen Log Yard site because of the distance between noise-sensitive properties and major noise-producing sources; therefore, no noise mitigation is proposed for the Aberdeen Log Yard Alternative.

Anderson & Middleton Alternative

In addition to the common mitigation measures listed above, WSDOT will construct a berm or sound wall between the proposed Anderson & Middleton Alternative truck haul route along the 5th Street extension and affected residences. This wall or berm will protect the noise modeling receiver locations AMR-10 through -12 and AMR-14 (see Exhibit 3.10-2) and be designed to reduce noise to within WAC 173-60 criteria during project operations. The berm or wall will be approximately 1,200 feet long, extend from the 5th Street extension to 8th Street, and be 12 to 14 feet high. WSDOT will review the berm or wall design when all equipment locations are finalized and optimized to provide a 6 to 8 dB noise reduction, which will result in project noise levels below the state noise control threshold.

How will WSDOT mitigate for indirect effects on noise?

CTC Facility

Because WSDOT does not expect any indirect noise effects, no noise mitigation is recommended for the CTC facility.

Grays Harbor Build Alternatives

WSDOT does not recommend noise mitigation for the types of indirect effects that could be associated with casting basin construction and operation at either Grays Harbor build alternative site. Under the WAC, traffic on public roadways is not considered a noise-generating source that requires mitigation, and the types of indirect effects that could occur on area streets (discussed previously in Section 3.10 in Chapter 3 under the heading *How would construction of the casting basin directly affect noise levels?*) will be infrequent and temporary.

How could cumulative effects on noise be mitigated?

All noise effects related to the SR 520 Pontoon Construction Project will last only during project construction and operation. WSDOT will mitigate noise-generating activities to ensure compliance with WAC noise regulations. This project will not contribute to regional cumulative noise effects; therefore, WSDOT did not consider potential mitigation measures for cumulative effects.

Public Services and Utilities

What mitigation measures does WSDOT propose to reduce direct effects on public services and utilities?

Effects on public services and utilities, if any, likely will be minimal with either Grays Harbor build alternative. WSDOT will coordinate with public service and utility providers throughout project design, construction, and operation to ensure that project construction and operation effects are understood in advance, planned for, and minimized.

WSDOT will implement the recommended mitigation measures listed below to avoid or minimize adverse effects:

- Coordinate closely with utility providers to minimize any service interruptions and notify area businesses and residents and provide a schedule of construction activities in the affected areas
- If there are temporary waterline shutdowns, notify and coordinate with the applicable fire department and public works department

- If there are temporary utility service interruptions, notify area businesses and residents and provide a schedule of construction activities in the affected areas
- Coordinate with and give public service providers construction schedules to minimize the effects of utility relocations on public services
- Coordinate with law enforcement agencies to keep them fully informed about the project construction schedule, activities, locations, and haul routes

How will WSDOT mitigate for indirect effects on public services and utilities?

Ground settlement could occur due to stockpiling excavated materials or the storage of imported materials. A potential measure to prevent ground settlement effects related to stockpiling would be to stockpile materials at a specified distance from the buried utilities to avoid inducing settlement that could damage utilities.

If ground settlement were to occur that results in damage to pipes, or structures, WSDOT will prepare plans for repair or reconstruction, mobilize repair or reconstruction materials to the site, monitor settlement, and be prepared to repair damage.

How could cumulative effects on public services and utilities be mitigated?

The SR 520 Pontoon Construction Project will not contribute to cumulative effects on public services and utilities; therefore, WSDOT did not consider potential mitigation measures.

Land Use

What mitigation measures does WSDOT propose to reduce direct effects on land use?

This project will be compatible with applicable land use plans, and WSDOT will comply with Hoquiam or Aberdeen's appropriate development regulations and permit requirements, such as acquiring Substantial Shoreline Development or Conditional Use permits. WSDOT will obtain the necessary permit from Grays Harbor County before mooring the pontoons in Grays Harbor. Also, acquiring the property (the project site) will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act. This act provides for certain relocation payments and advisory assistance for businesses and personal property-only relocations.

How will WSDOT mitigate for indirect effects on land use?

CTC Facility

Using the CTC facility for pontoon construction will not create indirect effects on land use, so no mitigation is proposed.

Grays Harbor Build Alternatives

The project will not cause indirect effects on land use in the Grays Harbor area, so no mitigation is proposed.

How could cumulative effects on land use be mitigated?

While the SR 520 Pontoon Construction Project would not contribute to adverse cumulative effects on land use, local jurisdictions all have comprehensive plans that establish goals and guidelines for the use of its lands. These plans are coordinated with state land use management goals and regulations (Washington State Growth Management Act, for example), as well as any federal land use regulations. This local, state, and federal coordination over land use reduces effects on land use, such as loss of shoreline land for purposes that do not require water or the introduction of a land use that is not compatible with surrounding land uses. Adherence to land use plans and regulations mitigates the cumulative effects on land use.

Social Elements

What mitigation measures does WSDOT propose to reduce direct effects on social elements?

CTC Facility

WSDOT did not identify any effects on social elements as a result of the use of the CTC facility for this project; therefore, no mitigation is proposed.

Grays Harbor Build Alternatives

Because constructing and operating a casting basin facility at either Grays Harbor build alternative site will require similar activities, mitigation measures will be similar for either site. However, noise effects associated with the Anderson & Middleton Alternative will require site-specific mitigation (see the *Noise* discussion). Mitigation measures that WSDOT will apply include the following:

- Continuing to use the project Web site, mail newsletters with information on the project, and provide contact numbers where residents could voice their concerns about the project
- Providing project materials in other languages as needed

- 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
- Reducing idling time of construction equipment by turning equipment off during prolonged periods of nonuse
- Requiring contractors to cover loads and to spray exposed soils with water or other suppressant to reduce dust and windblown debris
- Adding lane capacity through revised road channelization to separate traffic movements at intersections where LOS would noticeably degrade

For the Anderson & Middleton Alternative site, operational noise levels are predicted to exceed the WAC criteria at four locations. Constructing an approximately 12- to 14-foot-high, 1,200-foot-long berm or sound wall will effectively reduce offsite noise levels beneath the WAC maximum allowable levels.

WSDOT will work directly with the Quinault Indian Nation to avoid or minimize potential effects on tribal fishing, including crab harvesting by limiting project activities that could interfere with fishing activities. WSDOT is also developing a Memorandum of Agreement with the Quinault Indian Nation to resolve issues associated with project effects on tribal interests.

How will WSDOT mitigate for indirect effects on social elements?

No mitigation is proposed because WSDOT does not anticipate negative indirect social effects with the use of the CTC facility or either Grays Harbor build alternative site.

How could cumulative effects on social elements be mitigated?

The project will have a beneficial contribution to social and economic resources for a limited time. The project will not contribute to an adverse cumulative effect on the resource, so WSDOT did not consider potential mitigation measures.

Transportation

What mitigation measures does WSDOT propose to reduce direct effects on transportation?

WSDOT incorporated several measures during project planning and design to avoid and minimize transportation effects. For example,

WSDOT planned the truck haul routes specifically to avoid adding to streets that did not have the capacity and condition to serve above-average truck-traffic volumes. WSDOT will add lane capacity through revised channelization to separate traffic movements. This would require restriping and adding a traffic island at the intersection of Garfield and Heron Streets in Aberdeen.

Another way to minimize transportation effects could be achieved by using barge or rail. Barges could be used to transport excavated materials to and from the site by anchoring them in the launch channel to load and unload materials. Rail could also be used to transport materials. Using barges or rail could reduce the effects of project construction and operation on study area roadways. WSDOT will meet early each day with railroad personnel during the project to discuss anticipated traffic for the day, challenges that might arise because of that traffic, and potential measures to address those challenges.

WSDOT will work closely with local jurisdictions before initiating project construction to establish a process for assessing current conditions of the haul route and for determining if any road maintenance would be needed during or at project completion to repair damage caused by project-related heavy truck traffic. To compensate for negative effects, WSDOT will implement best management practices and will comply with any commitments made to the local jurisdiction. WSDOT will also develop a traffic management plan as part of project construction.

For intersections where the LOS would noticeably degrade or access would become difficult, WSDOT will improve channelization at certain intersections near the project site to improve traffic flow and operations and to facilitate access to and from the site. As an example, for the intersection at West Heron Street and South Garfield Street that would degrade to LOS F, WSDOT will mitigate for this effect. One mitigation option that WSDOT will consider is installing an island to separate traffic flows at the intersection and removing the stop sign on Heron Street. This would provide free flow movement through the intersection, thus reducing intersection delay. After mitigation, traffic flow at this intersection will be restored to LOS D or better.

How will WSDOT mitigate for indirect effects on transportation?

WSDOT does not expect that indirect effects, including increased traffic along alternate routes and traffic related to future use of the casting basin facility, will be substantial at either Grays Harbor build alternative site. Therefore, no additional mitigation measures will be implemented beyond those identified to mitigate the project's direct effects.

How could cumulative effects on transportation be mitigated?

As noted previously, the 2-percent annual compounded growth rate used for the direct effects evaluation likely captures most or all of the growth expected in the Grays Harbor area resulting from the cumulative effect of other current and planned actions. WSDOT does not expect that the cumulative effect of these actions, in combination with the SR 520 Pontoon Construction Project and potential mitigation, would result in long-term cumulative effects. As a result, the improvements identified to mitigate the SR 520 Pontoon Construction Project's direct effects will also help to mitigate the cumulative effect of other present and planned actions. If needed, measures to improve LOS at intersections along the haul routes, identified in Appendix P, Transportation Technical Memorandum, would contribute to a long-term improvement in cumulative traffic conditions in the vicinity of the selected alternative site.

Visual Quality and Aesthetics

What mitigation measures does WSDOT propose to reduce direct effects on visual quality and aesthetics?

WSDOT will implement the following measures to reduce direct effects on visual quality and aesthetics:

- Shield temporary construction-site lighting to reduce the amount of light spilling onto nearby residences and businesses
- Shield permanent lighting and minimize use of lamps on tall poles
- Minimize visual obtrusiveness by locating temporary and permanent construction equipment and stockpiling materials in less visually sensitive areas and areas not visible from the road or to residents and businesses

The additional potential measures listed below could further address potential effects that could result from project construction and operation:

- Design facilities to blend with the surroundings by choosing colors that do not contrast or stand out and minimizing structural bulk where possible
- Replant or enhance vegetation, street trees, and landscaping for screening or visual quality

- Minimize visual effects on historic and cultural resources, public parks, and open spaces by preserving character-defining landscaping and vegetation and by designing new structures or landscapes to complement or harmonize with the existing historical or cultural buildings or landscapes

How will WSDOT mitigate for indirect effects on visual quality and aesthetics?

Because the proposed project will be visually consistent with the current industrial surroundings at either build alternative site, and because WSDOT does not expect pontoon moorage to produce indirect visual quality effects, no mitigation is proposed.

How could cumulative effects on visual quality and aesthetics be mitigated?

While the SR 520 Pontoon Construction Project would not contribute to an adverse cumulative effect on visual quality and aesthetics, cumulative effects on visual quality could be reduced by cooperative actions among local jurisdictions and community planning efforts to establish architectural standards, preserve important stands of vegetation, and preserve important views and community gathering places.