

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

MAY 2010

## **SR 520 Pontoon Construction Project**

# **Visual Quality and Aesthetics Technical Memorandum**



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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

## Visual Quality and Aesthetics Technical Memorandum

Prepared for  
Washington State Department of Transportation  
Federal Highway Administration

Lead Author  
**Parametrix, Inc.**

Consultant Team  
**HDR Engineering, Inc.**  
**Parametrix, Inc.**  
**CH2M HILL**  
**Parsons Brinckerhoff**  
**ICF Jones & Stokes**  
**Michael Minor and Associates**  
**Cherry Creek Environmental**  
**J. Irwin, Writing and Editing**

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## Abbreviations and Acronyms

CTC	Concrete Technology Corporation, Inc.
EIS	environmental impact statement
FHWA	Federal Highway Administration
GHNWR	Grays Harbor National Wildlife Refuge
GIS	geographic information system
HOV	high-occupancy vehicle
NEPA	National Environmental Policy Act
WSDOT	Washington State Department of Transportation



# 1. Introduction

## Why are visual quality and aesthetics considered in an EIS?

As part of the environmental impact assessment process, the Washington State Department of Transportation (WSDOT) is required to consider the visual and aesthetic effects of the SR 520 Pontoon Construction Project on adjacent communities and resources. The visual and aesthetic assessment is supported and directed by the National Environmental Policy Act (NEPA) of 1969, the WSDOT *Environmental Procedures Manual* (WSDOT 2008), and the Federal Highway Administration's (FHWA's) visual impact assessment guidance (FHWA 1981). Understanding how a proposed project would affect visual quality helps planners and engineers to develop mitigation measures for the project and to design and build project facilities that fit appropriately with their settings and are beneficial to communities.

## What are the key points of this technical memorandum?

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

### CTC Facility

WSDOT's proposed use of the CTC facility to build pontoons would not alter the visual quality or character of the CTC project area because the CTC site is a fully constructed facility and is routinely used for industrial activities, including pontoon construction. Using this facility would not change the visual character and quality of the industrial landscape unit and the CTC facility is not visible from any sensitive viewpoints; therefore, the project would not produce significant, unavoidable effects on the visual quality of the area that would warrant analysis and/or mitigation measures.

### Grays Harbor Build Alternatives

The build alternative sites would have little to no effect on the visual character of landscapes or quality of views in Grays Harbor, the South and North bays of the outer harbor, and the south Hoquiam and Aberdeen areas. The build alternative sites and offsite pontoon moorage location would not be visible from most locations in and around Grays Harbor because of the large distances between these locations and the sites. Following are the key points of this visual quality and aesthetics analysis for the Grays Harbor build alternative sites:

- New buildings and structures at a casting basin facility at either build alternative site would be similar in scale and character to existing industrial and manufacturing plants along the mouth of the Chehalis River.
- Buildings and structures at the Aberdeen Log Yard Alternative site would not be visible from the residential area directly north of the site. The facilities would be visible from some residential areas at higher elevations on the hillsides north of the Aberdeen Log Yard site..
- Buildings and structures at the Anderson & Middleton Alternative site would be partially and seasonally visible from higher elevation residences on the south slope of Beacon Hill. The change in the site’s visual character from adding tall structures would not interfere with views of open water or the horizon panorama from the Beacon Hill residences.
- The concrete batch plant would be 40 to 60 feet tall and noticeable from across the harbor or from nearby residences.
- Nighttime illumination would make the Anderson & Middleton casting basin facility visible from most places around Grays Harbor, whereas now the site is not lit and not visible at night. Lighting would be especially noticeable to viewers in the Hoquiam Residential Landscape unit neighborhoods. Daytime glare would not be likely because most structures at the project site would be built of nonreflecting materials.
- Viewers most likely to notice the change in condition of the Anderson & Middleton site from open space to a manufacturing facility would be people on water vessels passing the site and people using the neighboring Port of Grays Harbor industrial property as an informal recreational area.
- Pontoons moored in the deep waters of Grays Harbor generally would not be visible from distant shoreline locations because the pontoons would rise only 8 to 10 feet above water level; this assumes that the pontoons would be illuminated only with red safety lights for nighttime visibility. Also, any potential moorage location in outer Grays Harbor would be visible to aircraft.

## What are the project alternatives?

The Pontoon Construction Project Draft Environmental Impact Statement (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

### 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.

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 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.

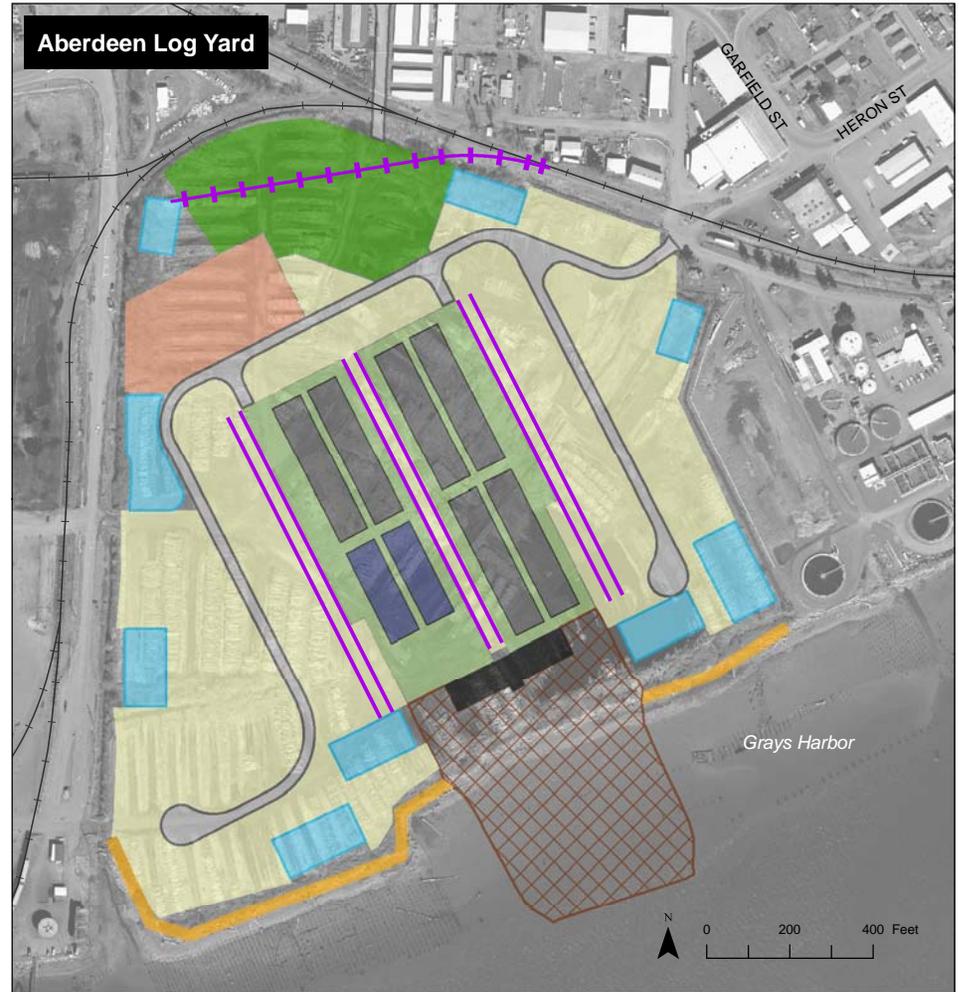
Each alternative is described below. For more details, see the Description of Alternatives and Construction Techniques Discipline Report (WSDOT 2009a).

## **Site Descriptions**

### **Anderson & Middleton Alternative**

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

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



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

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

### Exhibit 1. Locations and Conceptual Layouts for Build Alternative Sites

Pontoon Construction Project



## **Aberdeen Log Yard Alternative**

The 51-acre Aberdeen Log Yard Alternative site lies on the north shore of Grays Harbor in Aberdeen, Washington, near the mouth of the Chehalis River (Exhibit 1). This generally flat site is zoned industrial and is currently owned and used for log storage by Weyerhaeuser Corporation. There are no structures on the site now but there is a system of unpaved access roads connecting to East Terminal Road to the west and State Street to the northeast.

Immediately west of the site is paved Port of Grays Harbor industrially zoned property, the City of Aberdeen wastewater treatment plant borders the eastern boundary, and the Puget Sound & Pacific Railroad mainline and siding run along the northern boundary of the site. WSDOT would purchase all 51 acres, and the casting basin and support facilities would occupy the entire site.

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

## **No Build Alternative**

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

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

## **Key Components of Both Build Alternatives**

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

## **Potential Use of the Existing CTC Casting Basin Facility**

The existing CTC facility is adjacent to the Blair Waterway on the eastern edge of Commencement Bay in Tacoma (Exhibit 1). This casting basin is too small to accommodate the timely construction of the pontoons required for the Pontoon Construction Project, but WSDOT could use this facility to supplement pontoon construction at the larger casting basin

proposed in the Grays Harbor area. The pontoons manufactured at the CTC facility would most likely be the smaller supplemental stability pontoons.

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

### **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

#### **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.

construction, a temporary construction dewatering system would operate at the site. During pontoon-building operations and after the Pontoon Construction Project is completed (but while the site is still maintained by WSDOT), a permanent operation dewatering system would operate.

### **Operational Support Facilities**

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

### **Pontoon Towing and Moorage**

If WSDOT uses the existing CTC facility in Tacoma, it would moor the pontoons built there at existing marine berths in Puget Sound. Using these berths would be subject to availability, but there are several locations in the Puget Sound region that could accommodate this project's needs. The first two cycles of eight pontoons manufactured at the new Grays Harbor casting basin facility would be towed from the casting basin and moored in the Grays Harbor area outside of navigation channels. The last construction cycle of pontoons could be stored in the dry casting basin behind the closed gate.

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

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

### **Construction Schedule**

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

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

cycle. As a result, three construction cycles would be needed to produce ten supplemental stability pontoons and one longitudinal pontoon.

## 2. Affected Environment

Visual effects resulting from a new project are typically of great interest to adjacent communities and can cause resistance to the project if the effects are not considered or lessened. To ensure that visual effects and community reaction to the effects are adequately considered, the existing context and visual resources of a project must be objectively described and evaluated; this process is supported and directed by NEPA. The resulting existing conditions assessment serves as the baseline for determining the degree and nature of visual change.

The primary study area for visual quality and aesthetics is the viewshed, which is the aggregate surrounding landscape that has views of a project site and, conversely, the area that can be seen from the project site. This analysis identified two different viewshed study areas: one for the CTC site in Tacoma and the other for the Grays Harbor alternative sites. The Grays Harbor study area included a potential open-water pontoon moorage location in Grays Harbor.

This section presents the results of the visual quality and aesthetics assessment of the existing conditions for the two study areas. It describes the overall landscape character of the project vicinities and identifies important views, landscapes, or landmarks that are character-defining aspects of the respective study areas. This section also identifies groups of people who have views of the project study areas and assesses their sensitivity to those views.

### How did WSDOT collect information on visual quality and aesthetics?

This visual quality assessment is based on the FHWA visual quality and aesthetics assessment methodology (FHWA 1981), which defines an information collection and evaluation process for highway projects. This methodology uses professionally accepted, descriptive terminology for the physical attributes of the landscape being assessed and for viewer sensitivity (see these terms described below). This terminology helps to ensure consistent and effective communication.

FHWA developed the methodology as a way to adequately and objectively consider the potential visual effects resulting from highway projects. The FHWA methodology has become an accepted framework for describing and analyzing the subjective visual experience of viewers and for developing social and physical contexts for a project. As a result of its rigor, this process is adaptable to projects of any size or type, including nonroadway projects such as the Pontoon Construction Project.

A visual quality and aesthetics assessment is based on information about, or the analyst's observation of, the following:

- The visual and aesthetic experience of viewers looking at or from the study area
- The expected sensitivity of various viewer groups to visual changes
- The panoramic, special, or scenic views visible from the project site or from the landscape surrounding it
- The overall visual and aesthetic character and quality of the area
- The scale and contrast between existing and proposed elements in the area

To gather the necessary information, the discipline team visited the proposed project sites in Hoquiam and Aberdeen and reviewed community planning documents and U.S. Geological Survey and Geographic Information System (GIS) maps. Information about the CTC study area was obtained from aerial photographs and GIS maps for land use and topography. Visual quality and aesthetic conditions are influenced by all of the factors that shape an environment, such as the presence of parks or historic and cultural features. Exhibit 2 presents other project technical memoranda that the team reviewed for supplemental information.

**EXHIBIT 2**

Summary of Other Environmental Elements Considered in the Visual Quality and Aesthetics Analysis

Element	Information to be Used
Social, Recreation	Viewer groups and their expectations; changes to parks, bicycle-pedestrian paths, and other recreation areas such as boating channels
Navigable Waterways	Addition or alteration of light and glare through placement of lighting
Land Use	Confirm status of planning documents
Cultural Resources	Changes to cultural resources that are related to or caused by changes in the visual context

Sources: WSDOT (2009b, 2009c, 2009d, 2009e).

The team evaluated the affected environment and its context by following the FHWA methodology:

1. Establish the project’s visual limits (viewshed) and define the visually distinctive subareas in the project vicinity (landscape units).
2. Determine who has views of or from the project (viewer) using the understanding gained in the previous step.
3. Describe and assess the existing visual character of the built and natural environments (affected environment) using information gained during site visits.

**What is the built environment?**

The phrase built environment refers to the built surroundings that provide the setting for human activity, ranging from the large-scale civic surroundings to personal places.

4. Assess the visual quality of each landscape unit and identify places where there are views of important visual resources, substantial numbers of viewers, or viewers who are likely to be concerned about the quality of the view (sensitive viewers).

A **viewshed** is shaped by the surrounding landforms, vegetation, and built environment and might differ from project-defined limits of construction. The viewshed is important for understanding the overall character of the landscape in which the project is situated and for identifying important visual resources (such as Grays Harbor) and views of those resources. For this assessment, the discipline team mapped the viewshed using GIS maps and aerial photographs. They confirmed the mapping by visiting the Grays Harbor build alternative sites.

The viewshed is divided into subareas called **landscape units**, which allow a closer look at the details and character of neighborhoods or other small districts. The criteria for determining the limits of a landscape unit are that each unit has a distinctive landscape or use; has a specific, finite geographic location; and has some degree of clear views within the unit. Neighborhoods, park areas, and shopping districts are examples of the scale and nature of a landscape unit. For Step 4, the team assigned rankings of low, moderate, and high for the three primary visual quality descriptors: vividness, unity, and intactness. Exhibit 3 describes these rankings.

**EXHIBIT 3**  
Definitions of Visual Quality Descriptors

Descriptor	Vividness	Unity	Intactness
Low	Low vividness indicates a landscape that is mundane or nondescript.	Low unity indicates that the built features of a landscape were placed and built without sensitivity to the natural or existing setting.	Low intactness indicates that the integrity of the landscape is greatly reduced, either by the loss of large portions of a landscape from the view or the prevalence of incompatible structures. The incompatibility can be due to conflicting scales, colors, or purposes, among others.
Moderate	Moderate vividness indicates the presence of some features that have striking and attractive attributes, such as textures, colors, shapes, or sizes.	Moderate unity indicates that built features are somewhat responsive to the natural or existing setting.	Moderate intactness indicates the presence of some features that are not compatible with the existing landscape or a loss of part of the landscape.
High	High vividness indicates the presence of a dominant feature or a collection of features that is distinctive and very memorable.	High unity indicates that the natural and built components of a landscape are in balance and harmony with each other. High unity attests to the careful design of individual components and their relationship in the landscape.	High intactness indicates that the landscape is not broken up by features that are out of place.

## **What are the existing visual character and visual quality of the study area?**

### **CTC Facility**

The CTC facility is located within an approximately 3-square-mile area of land zoned as an industrial center on Tacoma's Blair Waterway. The CTC site is a fully constructed facility and is routinely used for industrial activities, including pontoon construction.

### **Viewshed**

The viewshed of the CTC site (Exhibit 4) is limited by the adjacent clusters of lowrise buildings and shelters surrounding the facility, which tend to serve as visual screens. There appear to be no distant viewpoints from which the facility can be seen in its entirety because of the surrounding buildings. These buildings also limit visibility of the facility from viewpoints within the study area that are located within the middle and foregrounds. Even where visible, the CTC facility is not distinguishable from the other facilities in the surrounding industrial area.

Views from residences along the bluff north of the facility are screened by vegetation along the bluff's edge.

### **Landscape Units**

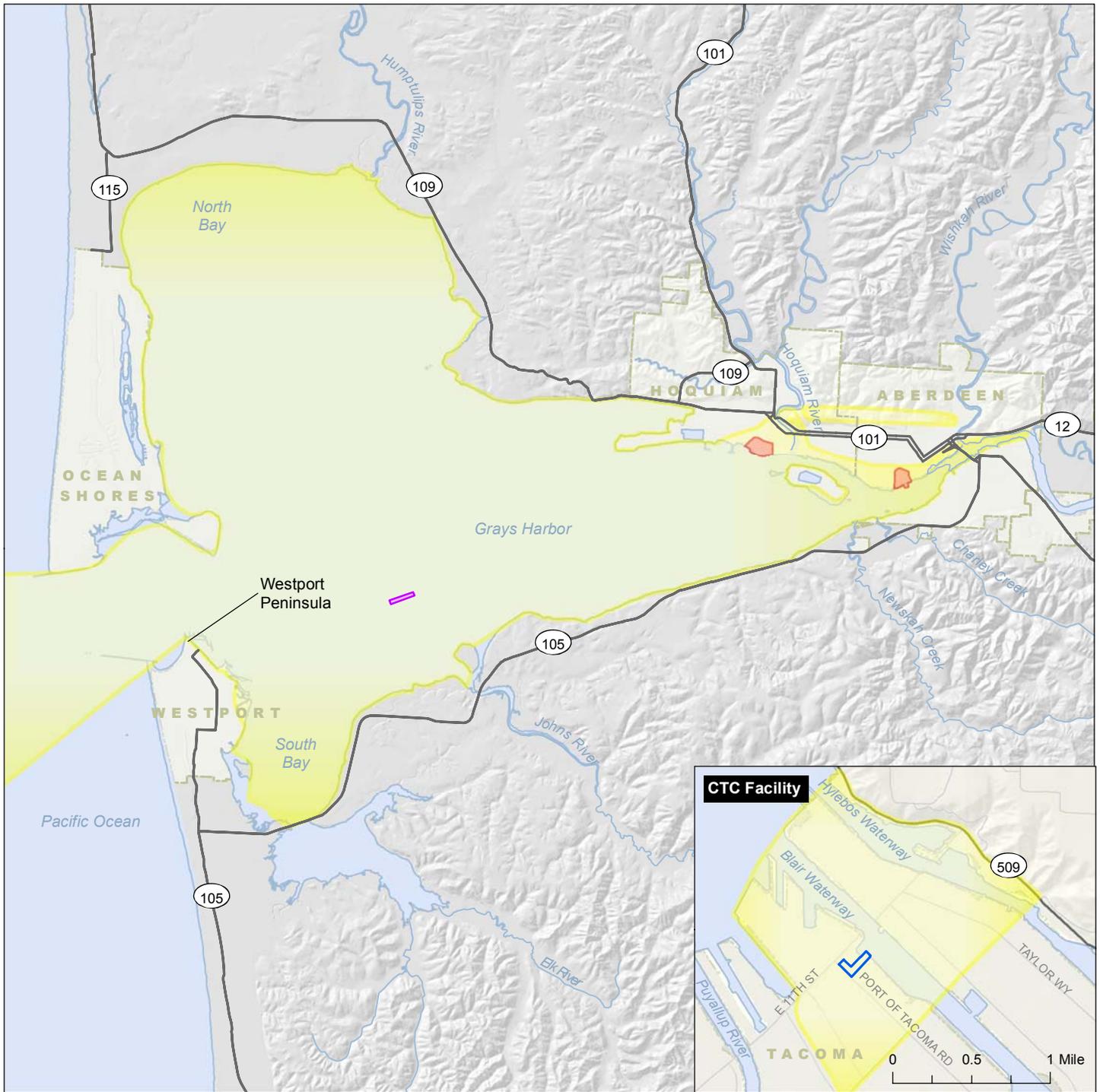
The CTC landscape unit (Exhibit 5) is a small portion of the industrial center and is roughly equal to the viewshed. This landscape unit is an established, active manufacturing zone with a uniform style of industrial and storage buildings surrounded by extensive parking or travel areas.

### **Visual Character**

The visual character of the CTC landscape unit is built and industrial. Its boundary is established by the surrounding low buildings, shelters, vehicles, and storage containers associated with nearby industrial and manufacturing complexes. The complexes also include small sheds and trailers, industrial high-intensity lighting, and some overhead utilities. Except for a few small clumps of trees and shrubs or volunteer plants in undeveloped areas, there is no vegetation in this landscape unit. The Blair Waterway is a functional, built channel without vegetation or other natural features.

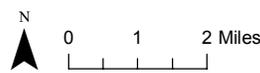
### **Visual Quality**

This landscape unit is an extensive level plain that is fully developed with buildings, roads, and parking areas. The single viewer group consists of people who work or conduct business within the industrial center and are accustomed to or expect the functional character of the existing site. Views within the industrial complex are channeled along roadways or span open areas such as parking or storage lots. Intactness and unity in this landscape unit are low because the landscape comprises functional built structures placed for ease of travel and access. Vividness is low because there are no distinctive and memorable features.

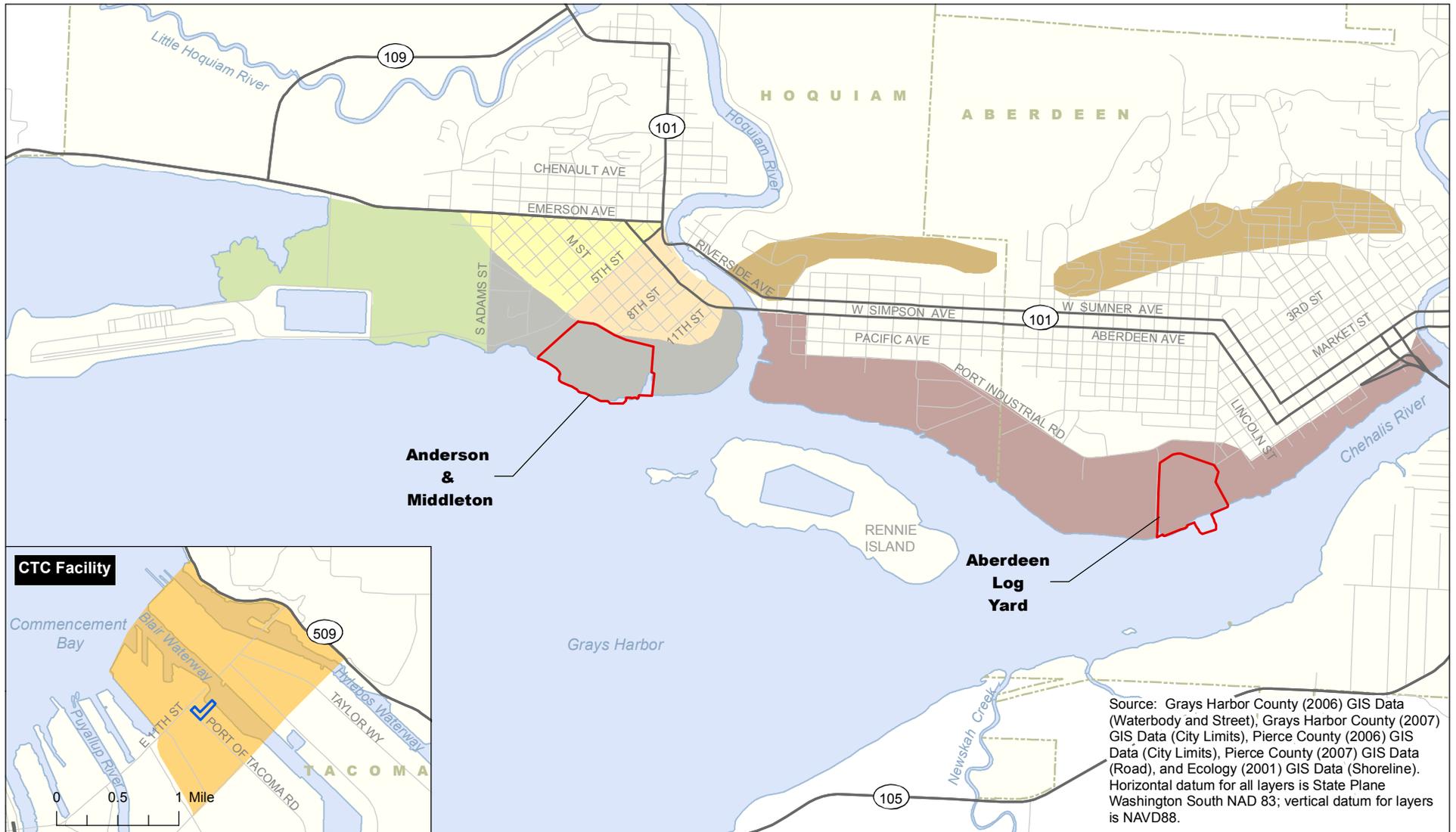


- Viewshed
- Proposed outer Grays Harbor pontoon moorage location
- Build Alternative Site
- CTC facility limits
- City limits

Source: USGS (1999) GIS Data (10-meter DEM), Grays Harbor County (2007) GIS Data (City Limits), Pierce County (2006) GIS Data (City Limits), Ecology (2003) GIS Data (Stream), Ecology (2001) GIS Data (Shoreline), and WSDOT (2004) GIS Data (State Route). Horizontal datum for all layers is State Plane Washington South NAD 83; vertical datum for layers is NAVD88.



**Exhibit 4. Study Area Viewsheds**  
 Pontoon Construction Project  
**Washington State Department of Transportation**

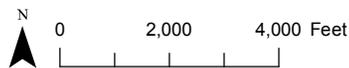


Source: Grays Harbor County (2006) GIS Data (Waterbody and Street), Grays Harbor County (2007) GIS Data (City Limits), Pierce County (2006) GIS Data (City Limits), Pierce County (2007) GIS Data (Road), and Ecology (2001) GIS Data (Shoreline). Horizontal datum for all layers is State Plane Washington South NAD 83; vertical datum for layers is NAVD88.



**Landscape Unit**

- |                    |                      |                        |
|--------------------|----------------------|------------------------|
| CTC Industrial     | Hoquiam Residential  | Build Alternative Site |
| Grays Harbor       | Hillside Residential | CTC facility limits    |
| Hoquiam Industrial | Hoquiam Rural        | City limits            |
| Mixed Use          | Shoreline Industrial |                        |



**Exhibit 5. Study Area Landscape Units**  
 Pontoon Construction Project

**Washington State Department of Transportation**

## Grays Harbor Build Alternatives

The Anderson & Middleton Alternative site is on the northern shore of Grays Harbor just west of the mouth of the Hoquiam River. The Aberdeen Log Yard Alternative site is on the northern shore of Grays Harbor just west of the mouth of the Chehalis River.

Grays Harbor is a wide, long estuary where fresh waters from numerous streams and rivers meet the Pacific Ocean. Low, forested hills ring the bay on the north, east, and south sides and form a low horizon. The west side of the bay is partially contained by the sandy peninsulas that form the entrance to Grays Harbor. Ships occasionally moor near the main navigation channel, but the open waters of the bay are free of structures.

Just offshore in places, including the two alternative sites, remnants of wooden pilings from former docks and piers protrude from the water, adding visual scale and texture to the shoreline.

Communities around Grays Harbor are primarily built on flat shorelines and promontories. The cities of Hoquiam and Aberdeen were developed along the level ground of the north shore near the mouths of the Hoquiam and Chehalis rivers, respectively. In these communities, manufacturing and industrial businesses are generally near the shore, whereas houses and commercial businesses have been built on the flat uplands and low hills.

## Viewshed

The Grays Harbor viewshed (Exhibit 4) is vast because of the size of the estuary. The west-to-east distance between the peninsulas at the entrance to Grays Harbor and Rennie Island near the mouth of the Chehalis River is about 10 to 20 miles. The distance between the estuary's northern and southern shorelines near Rennie Island is close to 2 miles, and the distance between the North Bay and South Bay shorelines in the western (widest) part of Grays Harbor almost 5 miles. At these distances, only landform and color contrasts are visible. The eastern edge of the viewshed is defined by Rennie Island and the curving shoreline of the mouth of the Chehalis River. The viewshed includes small pockets of partial and full views from south-facing hillsides in Aberdeen and Hoquiam (Exhibit 5).

## Landscape Units

The analyst identified seven landscape units, which are described below. The landscape units were established according to the following character-defining visual attributes and resources:

- Existing development, including building scale and massing, development texture, and land use patterns
- Topography (land form), vegetation, open space, and water patterns
- Street grid patterns
- Parks, trails, and other recreation areas

- Areas of special visual or aesthetic character
- Buildings, landmarks, and clusters of development

### **Grays Harbor Landscape Unit**

The Grays Harbor landscape unit includes the open water and shorelines of Grays Harbor, Rennie Island in the eastern harbor, and the sandbars and islets in the western harbor.

#### ***Visual Character***

The visual character of this landscape unit is defined by the natural estuary. The western harbor is an expanse of open water encircled by low, flat sandbars and low hills (Exhibit 6). The eastern harbor is the narrowing channel that becomes the mouth of the Chehalis River, Rennie Island, and built shorelines on the northern river channel (Exhibit 7).



**Exhibit 6. Grays Harbor and Westport Peninsula—Looking southwest across Grays Harbor toward Westport Peninsula from the Anderson & Middleton shoreline.**

This landscape unit is a shipping route for goods and products from the region, and ships occasionally moor near the navigation channel while waiting for a dock. Other than this, there are no built structures in the open waters of Grays Harbor. Many docks are in service in west Aberdeen near the Chehalis River. Around Rennie Island and near the build alternative sites are remnant docks from early shipping enterprises. Development consists of recreational and residential communities, which are limited to the peninsulas. Vegetation on Rennie Island consists predominantly of sparse woodlands.



**Exhibit 7. Built Shoreline and Wood Debris—Looking eastward to industrial area and Rennie Island (far right) from the shoreline just west of the mouth of Chehalis River.**

### ***Visual Quality***

This landscape unit has little development; the only permanent viewers in this area are residents with homes on the western peninsulas and harbor-facing hillsides and shorelines. Seasonal and occasional viewers include birdwatchers who come to the area during bird migration periods, people traveling on private and commercial boats or ships, and spectators who come to see the Tall Ships<sup>®</sup> sail by. Residents and visitors engaged in recreational activities, including private boaters, are likely to be sensitive to the quality of views in this landscape unit because of its natural beauty and the activities in which they are engaged.

Views within the Grays Harbor landscape unit are panoramic, extending unobstructed across the estuary. From shoreline views, only land mass and forests are distinguishable because there are many miles between opposite shores. The occasional built form that is taller, larger, or lighter than the surroundings can be seen against the horizon or against a dark background (Exhibit 8). Small, low areas such as the build alternative sites are not visible from great distances. Such areas are more visible to viewers on boats near the shorelines. Intactness and unity in this landscape unit are high because the landscape does not contain visible built features that are out of character with the surroundings. Vividness is high because the estuary system, the dominant feature, is distinctive and memorable.

### **Hoquiam Industrial Landscape Unit**

The Hoquiam Industrial landscape unit is the raised fill lands along the Grays Harbor shoreline south of the railroad tracks and between the Hoquiam River and South Adams Street (Exhibit 5).



**Exhibit 8. Distant Horizon across Grays Harbor—Looking south across Grays Harbor at natural and built forms along horizon.**

***Visual Character***

The visual character of this landscape unit is defined by the existing and remnant manufacturing and commercial facilities along the shoreline. The unit consists primarily of abandoned paved tracts formerly used for manufacturing and shipping. The tracts have developed emergent wetlands in low spots and volunteer vegetation (Exhibit 9). Vehicles and materials associated with the Puget Sound & Pacific Railroad are stored near the Hoquiam River railroad bridge and along the tracks. Manufacturing buildings along the unit’s western edge are small- to medium-footprint, one- to four-story box structures surrounded by surfaces paved for truck traffic and include small sheds and trailers, lighting, and overhead utilities. Most properties here are privately owned and fenced.

The Anderson & Middleton site and adjacent Port of Grays Harbor property occupy most of the land in this landscape unit (Exhibit 10). This landscape unit’s structures include the City of Hoquiam pump station at the northern edge of the Port of Grays Harbor property near the end of K Street and an office building near the northern edge of the Anderson & Middleton site (Exhibit 11). A 10-foot-wide gravel access road around the Port of Grays Harbor property is a popular local walking path.



**Exhibit 9. Typical Abandoned Paved Tracts—Looking northeastward across east portion of Hoquiam Industrial landscape unit from neighboring Port of Grays Harbor property.**



**Exhibit 10. Shoreline of Anderson & Middleton Property—Looking northeastward at the Anderson & Middleton site's shoreline with Beacon Hill in the background.**

Vegetation in the Hoquiam Industrial landscape unit consists of emergent wetlands, which are regularly mowed; volunteer annual and perennial plants on paved, unused properties; small groves or stands of trees; and hedgerows of trees and shrubs along property lines and roads. The railroad tracks and the tall hedgerow along the tracks physically and visually separate the eastern part of this landscape unit from the town (Exhibit 12).



**Exhibit 11. Office Building on the Anderson & Middleton Alternative Site—  
Looking northwestward from northwest corner of the Anderson & Middleton  
site.**



**Exhibit 12. Hedgerows and Beacon Hill—Looking northward from Port of Grays Harbor  
property at tree and shrub hedgerows along the railroad tracks with Beacon Hill in the  
distance.**

***Visual Quality***

The Hoquiam Industrial landscape unit is currently mostly unused and unoccupied, and consequently there are few viewers here because there are no destination points and few public traffic routes through the area. Viewers include people traveling along the perimeter of the landscape unit to and from Bowerman Airport and railroad workers. Neither group has clear views of the Anderson & Middleton site. Views of this site by recreational walkers on

the neighboring Port of Grays Harbor property are obscured or blocked by the berm along the inlet ditch between the Port of Grays Harbor property and the Anderson & Middleton site.

Views within and outward from this landscape unit are constrained by the flat terrain combined with the few abandoned industrial buildings, hedgerows, and stands of trees. Trees also obscure most views into this landscape unit from the neighborhoods to the north (Exhibit 13). Views across the estuary from the south and west borders of this landscape unit are unconstrained; however, because of the great distance of the opposite hills and shores, only land masses and the color and texture of the forests are visible.



**Exhibit 13. Railroad Tracks and Hedgerow—Looking northwest toward 8th Street through hedgerow along railroad tracks from northeast corner of Anderson & Middleton site.**

Intactness in the Hoquiam Industrial landscape unit is moderate because vegetation has started to reclaim the site, giving the landscape a natural appearance that is consistent with the tree and shrub borders. Unity in this landscape unit is high because there are only a few structures and they are comparatively small and despite being placed and built without sensitivity to the natural or existing setting.

Vividness in this landscape unit is low, indicating a landscape that is without memorable or distinctive features. The railroad bridge crossing the Hoquiam River is an interesting and notable feature but is not generally visible because of the tall trees along the shoreline and the tracks.

### **Mixed Use Landscape Unit**

The Mixed Use landscape unit is the commercial and business district that developed where US 101 meets the western bank of the Hoquiam River (Exhibit 5). This district is bounded by the Puget Sound & Pacific Railroad tracks on the south, the Hoquiam River on the east and northeast, and roughly 5th Street in Hoquiam on the west.

### **Visual Character**

The visual character of the Mixed Use landscape unit is defined by the street grid and the medium-density, continuous development. Buildings and uses are a mix of trade and commercial services and residential, cultural, social, and recreational uses. Hoquiam City Hall, the U.S. Post Office, a community church, and several small businesses along 8th Street contribute to the character of an established community.

Buildings in this landscape unit are typically small-footprint, one- to three-story structures of various ages and in a variety of styles and materials. The range of ages and the variety of materials and styles of the public and community buildings along 8th Street adds visual interest. The church steeple is a notable landmark that adds appeal to the skyline.

### **Visual Quality**

The Mixed Use landscape unit (Exhibit 5) is an active area with a variety of activity centers and destination points. Viewer groups include workers and visitors traveling to the various businesses and activity centers in the area and residents traveling to and from work or home. These viewer groups are likely to be moderately sensitive to visual quality in this area because of the character and quality of the private civic buildings in the east Hoquiam downtown. Views within this landscape unit are channeled along streets by buildings and structures such as bridges (Exhibit 14) and tend to terminate in a building. Views toward the project sites are blocked or obscured by hedgerows and buildings. The US 101 bridge over the Hoquiam River is the only location that has longer distance views because of its elevation, but those views are seasonally obscured by tall trees along the river (Exhibit 15).



**Exhibit 14. Linear View Corridors in Hoquiam—Looking southwest along 8th Street in downtown Hoquiam from vicinity of K Street.**

Development is continuous and composed of buildings of similar scales, so the character of this urban mixed-use area is coherent. Intactness and unity are high in this landscape unit because the built environment is not broken up by features that are out of place. Vividness is

overall low because there are no dominant or striking features that stand out as memorable or noteworthy.



**Exhibit 15. US 101 Bridge—Looking north from near the shoreline of neighboring port of Grays harbor property toward the bridge (just visible through a break in the hedgerow, center right), but generally obscured by trees.**

### **Hoquiam Residential Landscape Unit**

The Hoquiam Residential landscape unit is a small neighborhood area between 5th Street in Hoquiam on the east, Emerson Avenue on the north, and the Hoquiam Industrial landscape unit on the south (Exhibit 5).

#### ***Visual Character***

The visual character of this landscape unit is defined by the suburban residential architecture and landscapes and street grid. The residences are single-family homes and multifamily complexes with yards. The homes are small-footprint, one- and two-story buildings of various styles and materials. The multifamily residences are medium-footprint, typically two-story structures.

#### ***Visual Quality***

The Hoquiam Residential landscape unit is a fully developed residential area. Viewer groups are primarily residents traveling to and from home, and visitors to various nearby activity centers. Residents are likely to be moderately sensitive to visual quality in this area because it is their neighborhood. Views within this landscape unit are primarily short range and constrained by buildings; however, the higher hills to the north are visible above tree and building tops. Generally, views toward the Anderson & Middleton project site are blocked by

the tree and shrub hedgerows along the Puget Sound & Pacific Railroad tracks and by rail cars parked on the tracks.

Development is continuous and of similar scale and style, so the character of this suburban community is coherent. Intactness and unity are high because this landscape unit is a built environment that is not broken up by features that are out of place. Vividness is low because there are no dominant or striking features that stand out as memorable or noteworthy.

#### **Hillside Residential Landscape Unit**

This landscape unit consists of the south-facing hillsides in Aberdeen and Hoquiam (Exhibit 5). Although this is a series of small, discrete areas, they are described as a single landscape unit because of their high elevation viewpoints, which afford views of all of the other landscape units and of the two proposed project sites.

#### ***Visual Character***

The visual character of this landscape unit is defined by the steep, wooded hillsides and the residential developments built on the hills. Residential areas include Beacon Hill, Scammel Hill, Aberdeen Highlands, Hospital Hill, and Bel Aire.

#### ***Visual Quality***

The Hillside Residential landscape unit consists of the ends of the north-south ridges that slope down to the Grays Harbor basin. Each hillside has small residential developments with mostly panoramic and scenic views from the homes there; the viewer group is primarily residents. Because of the rural setting and panoramic views, these viewers are likely to be sensitive to the quality of views from their homes.

Views within this landscape unit are panoramic where not obscured by trees or land forms (Exhibit 16). Views toward the Anderson & Middleton Alternative site and the Hoquiam Industrial landscape unit are partially visible from a few locations on the south face of Beacon Hill, but these views are seasonally obscured by trees. These views might also include Grays Harbor Paper, Willis Enterprises, and Imperium Renewables industrial sites. Views toward the Aberdeen Log Yard Alternative site from the Aberdeen hillsides are unobstructed, and the Shoreline Industrial landscape unit is visible.

Intactness and unity in this landscape unit are low because clearing the woods for development has reduced the integrity of the natural landscape and the buildings do not blend well with the wooded landscape. Vividness is low because there are no features in this landscape unit that are notable or memorable.

#### **Hoquiam Rural Landscape Unit**

The Hoquiam Rural landscape unit is the undeveloped land bounded by the Grays Harbor shoreline on the northwest and south, Emerson Avenue on the north, Bowerman Airport on the southwest, and the Hoquiam Industrial landscape unit to the east (Exhibit 5). This landscape unit is evaluated because of the scenic quality and habitat value of the Grays Harbor National Wildlife Refuge (GHNWR).



**Exhibit 16. Beacon Hill—Looking northeastward from Anderson & Middleton Alternative site toward Beacon Hill.**

***Visual Character***

The visual character of the Hoquiam Rural landscape unit is defined by the GHNWR shoreline, large stretches of open fields and woodlands. The only structures in this landscape unit are a few agricultural buildings near the shoreline.

***Visual Quality***

The Hoquiam Rural landscape unit is a vegetated, shoreline habitat for wildlife that is a destination point for wildlife and bird watchers. Viewer groups in this landscape unit are travelers along the perimeter roads connecting to US 101, a few industrial employment centers, or the airport, or wildlife/bird watchers who visit the GHNWR. Birdwatchers, who visit the refuge primarily during the spring and fall waterfowl and shorebird migrations, are likely to be sensitive to the visual character and quality of the area because they are attuned to the natural environment and are engaged in recreational activities.

Views toward the project sites are blocked by dense stands of trees around the eastern edge. Intactness in this landscape unit is moderate because of the clearing of shoreline woods. Unity is high because there is little development in this landscape unit and buildings are only at the periphery. Vividness is low because although the open space and vegetation are natural and pleasant, the landscape does not contain distinctive or memorable features.

**Shoreline Landscape Unit**

The Shoreline landscape unit is the land south of the Puget Sound & Pacific Railroad tracks between the east bank of the Hoquiam River and the west bank of the Wishkah River (Exhibit 5).

**Visual Character**

The visual character of this landscape unit is defined by the existing and remnant industrial, manufacturing, and storage facilities established along the shoreline. Manufacturing buildings are large-footprint, one- to four-story box structures (Exhibits 17 and 18) surrounded by surfaces paved for truck traffic or leveled for stockpiling materials such as logs (Exhibit 19). The industrial complexes also include small sheds and trailers, industrial high-intensity lighting, overhead utilities, and tall smokestacks and cranes. Most of the properties in this landscape unit are fenced.



**Exhibit 17. Paper Mill—Looking eastward across the mouth of the Hoquiam River toward the Aberdeen Industrial landscape unit.**

Vegetation in the Shoreline landscape unit consists of volunteer annual, perennial, and woody plants in unused properties and along creeks and occasional small groves or stands of trees (Exhibit 20). The railroad tracks and the tall hedgerow along the tracks physically and visually separate the eastern part of this landscape unit from the town.

**Visual Quality**

The Shoreline landscape unit is a long, fully used industrial business area. The viewer group in this landscape unit consists of workers and visitors traveling to and from the businesses here. This viewer group is not likely to be sensitive to the appearance of the surroundings because they are uniformly industrial and functional.

Views from the commercial area to the north toward this landscape unit are limited to street corridors and are short range because of the flat terrain and the presence of industrial buildings, hedgerows, and stands of trees (Exhibit 21). Views of the Aberdeen Log Yard site



**Exhibit 18. Volunteer Vegetation and Log Stockpiles—Looking eastward from the western boundary of the Aberdeen Log Yard Alternative site toward the city of Aberdeen.**



**Exhibit 19. Stockpiled Logs and Hedgerow—Looking northwest across Aberdeen Log Yard Alternative site from the shoreline to hedgerow along creek.**



**Exhibit 20. Creek and Vegetation along Aberdeen Log Yard Alternative Site—Looking south along drainage ditch and fenced, western property line of Aberdeen Log Yard.**



**Exhibit 21. North Gate of Aberdeen Log Yard Property—Looking southward along Heron Street toward north gate of Aberdeen Log Yard site.**

from across the estuary are largely blocked by Rennie Island, but boats traveling closer to shore have clear views of the industrial buildings (Exhibits 22 and 23).

Intactness in the Shoreline landscape unit is low because this shoreline landscape was created with fill, which resulted in the loss of the natural shoreline. Unity in this landscape unit is



**Exhibit 22. Aberdeen Log Yard Property (East)—Looking northwest toward eastern side of the log yard site from mouth of Chehalis River.**



**Exhibit 23. Aberdeen Log Yard Property (West)—Looking northeast toward western side of the log yard site from mouth of Chehalis River.**

also low because structures were placed and built for functionality, without sensitivity to the natural or existing setting. Vividness in this landscape unit is low, indicating a landscape without striking or attractive features that are memorable or distinctive.

### 3. Potential Effects of the Project

#### How did WSDOT evaluate the project effects on visual quality and aesthetics?

To evaluate potential effects of the build alternatives, the visual quality analyst evaluated the changes to views likely to result from each build alternative using project engineering plans and the results of the affected environment analysis. The before and after visual qualities were compared to determine the degree of potential effect as defined by the criteria shown in Exhibit 24, adapted from FHWA guidelines (FHWA 1981):

**EXHIBIT 24**  
Visual Effect Levels and Ranking Criteria

Low	Moderate	High
<ol style="list-style-type: none"> <li>1. No physical changes are expected to result from the proposed project.</li> <li>2. Any remodeling of existing structures for project includes visually blending the remodeled buildings into the surrounding area.</li> <li>3. Proposed structures would be located in areas that do not exhibit a defined visual character (areas made up of different uses and scales of structures and with no landmarks or historic structures).</li> <li>4. Proposed project is compatible with visual character of surrounding area.</li> </ol>	<ol style="list-style-type: none"> <li>1. Proposed construction includes new structures that have a different scale, color, location, or orientation from surrounding structures.</li> <li>2. Proposed project is located within an historic district, adjacent to historic structures, or adjacent to major public buildings designed as focal points (for example, city halls and courthouses).</li> </ol>	<ol style="list-style-type: none"> <li>1. Project is of a scale that contrasts with its surroundings (for example, contains structures bulkier than those in nearby or introduces voids such as parking lots into well-defined street spaces). The magnitude of impacts will be greater in areas with recognized visual characters that are perceived by the community as assets and encourage use of the area.</li> <li>2. Proposed project would disrupt important views (for example, views of mountains, oceans, rivers, or significant built structures).</li> </ol>

Source: Adapted from FHWA (1981).

#### How would construction of the casting basin affect visual quality and aesthetics?

This section discusses the probable effects of project construction on visual quality and aesthetics for each landscape unit and for the offsite pontoon storage sites.

## CTC Facility (CTC Industrial Landscape Unit)

There would be no construction effects on the CTC Industrial landscape unit because it is a fully operational industrial construction zone.

## Grays Harbor Build Alternatives

Construction activities would be similar at the Anderson & Middleton and Aberdeen Log Yard sites; therefore, the visual effects in the vicinity of the construction sites would be similar as well. During construction, heavy equipment and construction-related signage would be visible at and near the project site. The Hoquiam Residential and Mixed Use landscape units near the Anderson & Middleton site would be most affected by construction activities because they are adjacent to the site. Construction at the Aberdeen Log Yard site would not negatively affect the adjacent properties because they are already engaged in industrial operations involving heavy equipment. Short-term changes to views could or would result from the following:

- Construction and excavation vehicles and equipment, both land- and water-based
- Clearing and grading activities resulting in exposed soils until replanting or repaving occurs
- Erosion control devices, such as silt fences, plastic groundcover, and straw bales
- Dust, exhaust, and airborne debris in areas of active construction
- Stockpiles of excavated material
- Staging areas used for storage of equipment and materials
- Traffic congestion on streets used as haul roads, such as K Street and/or 8th Street
- Overhead gantries, cranes, and scaffolding to support elevated structures
- Temporary lighting for nighttime construction of certain project elements

## No Build Alternative

There would be no construction effects on visual quality and aesthetics under the No Build Alternative.

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

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

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

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

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

## How would pontoon-building operations affect visual quality and aesthetics?

### CTC Facility (CTC Industrial Landscape Unit)

There would be no effects on visual quality or character from project operational activities because the CTC facility is situated in the interior of an industrial area and the proposed uses would not be visually different from existing industrial operations.

### Grays Harbor Build Alternatives

#### Grays Harbor Landscape Unit

Operating the casting basin facility at either build alternative site would result in low or no visual effects on the Grays Harbor landscape unit during daylight hours. At night, security lighting on the facility could increase the level of effect to moderate because the site would be visible from many locations around Grays Harbor. Vividness, unity, and intactness would not change from their high ratings because the project would not introduce built features that are out of character with their surroundings.

Except for the concrete batch plant (if one is built onsite), tall cranes, and office buildings, none of the casting basin structures would be visible from distant locations because the facilities would be at or below ground level. Visibility of the batch plant and offices would depend primarily on their color, height, and type of illumination and whether there is a vegetation screen, such as a hedgerow, between the viewpoint and the structure. If the colors of the structures do not blend with the background, then the structures could also be visible from distant locations. Batch plant structures and cranes are likely to be 40 to 60 feet tall and, therefore, noticeable from distant locations. These heights are comparable with some of the structures in the manufacturing properties in the Shoreline landscape unit and to the tower at the fire station to the north (Exhibit 25). Any illumination on tall stanchions or unshielded illumination would increase the visibility of the project site during both daytime and nighttime.

The project would construct a pontoon launch channel extending seaward from the casting basin entrance to the main navigation channel in Grays Harbor. At the Anderson & Middleton site, the launch channel would be superficially similar in appearance to the tidal inlet and ditch along the east edge of this property. A rock berm borders the shoreline of these properties. If the riprap used to protect the launch channel was similar in color to the existing stone of the berm or darkens with time the launch channel would not be a contrasting or inconsistent feature along the Anderson & Middleton site shoreline.

Views for residents living on the western peninsulas or along the south shore of Grays Harbor would not change noticeably under either build alternative; the new casting basin facility would appear only as a small piece of a distant landscape. From nearer viewpoints, such as boats or ships passing near the selected site, the facility would be noticeable, but the scale,



**Exhibit 25. Existing Industrial Horizon near Aberdeen Log Yard (center of photograph).**

design, and character of the structures would be consistent with the existing industrial facilities along the shore to the east.

### **Hoquiam Industrial Landscape Unit**

Project operation at the Anderson & Middleton site would result in high-level changes to the visual character and quality of the Hoquiam Industrial landscape unit because the casting basin facility would replace the vegetation that partially defines this landscape unit. However, because this area has been used for manufacturing and industrial activities in the recent past, these changes in character are consistent with zoned and historical uses. Intactness and unity would become low, and vividness would remain low.

### **Mixed Use Landscape Unit**

Neither build alternative would result in changes to the visual character or quality of the Mixed Use landscape unit. Intactness and unity would remain high, and vividness would remain low.

With the exception of tall cranes or towers, the casting basin, buildings, and stormwater facilities for the Anderson & Middleton site would be screened by trees along the railroad tracks; the Aberdeen Log Yard site would not be visible at all from this landscape unit. Tall structures or bright contrasting colors could be noticeable from some locations in the Mixed Use landscape unit. The stacks of the batch plant could be 40 to 60 feet tall, making them the tallest buildings in the immediate area (west of the Hoquiam River). The southeast corner of the Mixed Use landscape unit is a rail car storage yard, however, so the industrial character of the plant would not contrast strongly with the character of this area.

### **Hoquiam Residential Landscape Unit**

Project operation at the Anderson & Middleton site could result in low-level changes to the visual character the Hoquiam Residential landscape unit, but it would not affect the visual quality. The Aberdeen Log Yard site is not visible from this landscape unit. Unity and intactness would remain high and vividness would remain low.

If the casting basin facility were built at the Anderson & Middleton site, a small portion of the facility would be visible from the southeast corner of the Hoquiam Residential landscape unit along K Street. Most of the casting basin facility would not be visible because the facility would be at or below ground level. The stacks of the batch plant could be 40 to 60 feet tall, possibly making those structures noticeable from some viewpoints or along certain streets, especially during winter when the trees are leafless. During the spring and summer, the tops of the silos could be visible at the end of K Street, but this would not detract from the overall character or quality of the view.

Views for residents toward the project site would not be as affected by the new facilities if the screening trees and hedgerows remained in place. However, light from tall and/or unshielded lamps could make the site more visible, especially at night, and would increase the level of visual effects in proportion to the degree of visibility of the illumination.

### **Hillside Residential Landscape Unit**

Neither build alternative would result in visual effects on the visual character of the Hillside Residential landscape unit or the visual quality of views from the landscape unit. The Aberdeen views already include existing industrial facilities at Grays Harbor Paper, Willis Enterprises, and Imperium Renewables. The proposed facilities at the both sites would be similar in character and scale to existing industrial facilities. Unity, intactness, and vividness would not change from their low ratings.

If built at the Anderson & Middleton site, the casting basin facility would be visible from the Beacon Hill area. Similarly, a casting basin facility at the Aberdeen Log Yard would be visible from higher-elevation views from hillsides of north Aberdeen. Visibility of the facilities at the Anderson & Middleton site would be greater because the lot is nearly double the size of the Aberdeen Log Yard site and would have undeveloped open space just to the east. The Aberdeen Log Yard would be visible from the hillsides, but would be visually similar to the facilities around the log yard.

Residents in this landscape unit would likely be sensitive to the quality of views from their homes; however, the effects of either proposed build alternative on those views would be small because the new structures would not interfere with views of open water or the horizon panorama.

Light from tall and/or unshielded lamps would make the site more visible, especially at night, and would increase the level of visual effects in proportion to the degree of visibility of the illumination. Glare would not increase from existing levels if the structures were constructed of nonreflective materials.

### **Hoquiam Rural Landscape Unit**

Neither build alternative would result in visual effects on the Hoquiam Rural landscape unit because they would not be visible from this area. The vegetation buffer along the western border of this landscape unit effectively blocks any views to the east. Unity would remain moderate, intactness would remain high, and vividness would remain low.

### **Shoreline Landscape Unit**

Neither build alternative would result in visual effects on the Shoreline landscape unit because this is an existing industrial and manufacturing area. There are views of this landscape unit from potentially sensitive-viewer vantage points in the higher elevation residential areas, such as the Aberdeen Highlands or Scammel Hill; however, these views already include large-scale industrial facilities along the shoreline to the east and west of the proposed sites. Intactness, unity, and vividness would remain low.

### **No Build Alternative**

Under the No Build Alternative, the open space with existing emergent wetlands would continue to be the dominant feature on the Anderson & Middleton Alternative site, and stockpiled logs would characterize the Aberdeen Log Yard Alternative site until the site was cleared of logs and eventually used for other purposes. Views of the project sites in the foreseeable future would remain as they are, changing only with changes in vegetation height and density. If development pressure in the area increased over the long term, the project sites could continue to be minimally managed open spaces or storage yards, or they could be developed for other purposes.

## **How would the project affect visual quality and aesthetics in the long term?**

### **CTC Facility**

The proposed project would not produce a long-term alteration in the visual quality of the CTC study area. The CTC facility is an operating industrial facility located in a large industrial park, and this use will most likely continue over the long term. WSDOT's proposed use of this site to build pontoons is consistent with its current industrial purpose. New buildings or structures (if any) would be similar in scale, form, and color to existing facilities and, therefore, would not contrast visually with their surroundings. The CTC facility is not visible from any sensitive viewpoints; therefore, the project's use of this facility would not change the visual character and quality of the industrial landscape unit and would not produce substantial and unavoidable adverse effects on the visual quality of the area that would warrant analysis and/or mitigation measures.

Pontoons produced at the CTC casting basin facility would be moored in industrial ports and harbors in Puget Sound until used for bridge construction. Because the moorage sites are already used for industrial purposes, their use for pontoon moorage would not produce a change in visual quality over the long term.

## Grays Harbor Build Alternatives

The visual effects described in the *“How would project operations affect visual quality and aesthetics?”* section would be long-term effects, however minimal they would be. Open-water pontoon moorage could produce also long-term effects on visual quality..

About one-third of the pontoons’ height (8 to 10 feet) would be visible above water level. This is notable because other than navigation buoys, Grays Harbor currently has no built structures in open water. Storing pontoon rafts in Grays Harbor would not change the vividness, intactness, or unity levels from their existing high levels. Because of the large size of Grays Harbor, the pontoon rafts would not be visible from most locations. The rafts would likely be visible only from the nearest shorelines because of the distance of the rafts from the shore and the movement of waves. During daylight, the pontoon rafts could be visible from higher elevations around the harbor if they were grouped together to cover a large area and were light-colored (in contrast to the water). Any location in Grays Harbor along the federal navigation channel would be visible to crews or passengers on ships and boats. At night, the pontoon moorage area would be visible because the pontoons would be prominently illuminated with navigation lights.

Viewers most likely to be affected by views of the open-water pontoon rafts would be people traveling on private and commercial boats or ships because they would pass by the pontoon rafts near the navigation channel. Birders visiting the area during bird migration periods are likely to be sensitive, but they will generally be on land in areas from which the rafts are not visible.

## How would the alternatives compare in their effects on visual quality and aesthetics?

The Anderson & Middleton Alternative would have greater effects on visual quality and character than the Aberdeen Log Yard Alternative. The Anderson & Middleton site facilities could be somewhat more visible from the Grays Harbor landscape unit than the Aberdeen Log Yard site because the latter could be partially screened from southwest and west viewpoints by the trees on Rennie Island.

Visibility of the Anderson & Middleton site facilities would also be greater because the lot is more than double the size of the Aberdeen Log Yard site. The Anderson & Middleton site is contiguous with Hoquiam’s downtown area on 8th Street and several residences, whereas the Aberdeen Log Yard is separated from a residential area by industrial buildings. The Anderson & Middleton facilities would be distinctly different from the undeveloped open space just to the east, whereas the Aberdeen Log Yard would blend in with the existing industrial character.

## 4. Mitigation

### **What measures would WSDOT propose to reduce project effects on visual quality and aesthetics?**

WSDOT could apply several best practices to avoid or minimize negative effects that could arise from constructing and operating the project. These practices include the following:

- Designing facilities to blend with the surroundings by choosing colors that do not contrast or stand out and minimizing structural bulk where possible
- Replanting or enhancing vegetation, street trees, and landscaping for screening and/or visual quality
- Shielding temporary construction site lighting to reduce the amount of light spilling onto nearby residences and businesses
- Shielding permanent lighting and avoiding use of lamps on tall poles
- Minimizing visual obtrusiveness by locating temporary and permanent construction equipment and stockpiling materials in less visually sensitive areas and in areas not visible from the road or to residents and businesses.
- Minimizing visual effects on historic and cultural resources, public parks, and open spaces by protecting vegetation and avoiding permanent changes to their settings.

### **How could the project compensate for unavoidable negative effects?**

The project could compensate for changes to visual character and quality of the pontoon construction site by installing landscaping and/or fences that screen views of the site and shield stray lighting.

In Hoquiam, the main entrance onto the Anderson & Middleton Alternative site is a focal point at the end of 8th Street. This entrance could be an attractive focal point that announces arrival at a facility that is important to the citizens of Hoquiam and enhances the visual quality of the downtown area. The entrance could be designed to reflect the character of the street and the important civic buildings there. In Aberdeen, the main gateway is embedded in an industrial and commercial strip but could be designed to convey the importance of the site while being consistent with the surroundings.

At either site, an educational program could be established that invited neighboring communities to the site to learn about pontoon-construction technology; this could be an opportunity for community building and to showcase the technical skill base being developed.

Compensating or mitigating for the presence of pontoon rafts, such as painting them a dark color that blends with the water, must be balanced against the safety of water vessels. If the pontoons are camouflaged they might become unseen obstacles with the potential for causing accidents.

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