



Washington State Ferries

Fauntleroy Ferry Terminal Trestle and Transfer Span Replacement Project

Planning and Environmental Linkages Study Final

February 2026



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List of Acknowledgments

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Fauntleroy Ferry Terminal Trestle and Transfer Span Replacement Project

Planning and Environmental Linkages Study

Final Report | February 2026

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Acronyms and Abbreviations

BMPs	best management practices
CAG	Community Advisory Group
CFR	<i>Code of Federal Regulations</i>
DAHP	Washington Department of Archaeology and Historic Preservation
DPS	distinct population segment
EA	environmental assessment
EAG	Executive Advisory Group
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act Section 7
ESU	Evolutionarily Significant Unit
FAC	Ferry Advisory Committee
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GIS	geographic information system
MLLW	mean lower low water

N/A	not applicable
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
PAH	polycyclic aromatic hydrocarbon
PEL	Planning and Environmental Linkages
PHS	Priority Habitats and Species
R3UBH	Riverine, upper perennial, unconsolidated bottom, permanently flooded
SDOT	Seattle Department of Transportation
SEPA	State Environmental Policy Act
SF	square foot (feet)
SPR	Seattle Parks and Recreation
SPU	Seattle Public Utilities
SR	State Route
TAG	Technical Advisory Group

TMDL	total maximum daily load
U.S.	United States
U.S.C.	<i>United States Code</i>
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington Department of Natural Resources
WISAARD	Washington Information System for Architectural and Archaeological Records Data
WSDOT	Washington State Department of Transportation
WSF	Washington State Ferries

Executive Summary

Introduction and PEL Purpose and Need

The Fauntleroy ferry terminal in West Seattle serves more than 2 million riders per year — supporting Washington State Ferries' (WSF's) "Triangle" route between West Seattle, Vashon Island, the Kitsap Peninsula and beyond. The Triangle route is part of State Route (SR) 160 and is served on the east side by Fauntleroy Way SW, a City of Seattle street classified as a minor arterial. It is the only WSF terminal not served by a state route or major arterial. The terminal faces several challenges (needs), including:

- Aging, seismically vulnerable parts of the terminal are overdue for replacement
- Rising sea levels risk damage to the terminal structures from debris during future high tides
- Vehicles back up along Fauntleroy Way SW, with only one holding lane on the shoulder of southbound Fauntleroy Way SW to serve two destinations
- Small dock with capacity for about 80 cars serving three Issaquah Class ferries that hold 124 cars each

The purpose of WSF's Fauntleroy Ferry Terminal Trestle and Transfer Span Replacement Project (project) is to improve operations on the Triangle ferry route and preserve and upgrade the terminal facilities.

Agency, Tribal and Public Coordination

The Fauntleroy ferry terminal serves the Triangle ferry route, with ferry service multiple times each day between Fauntleroy, Southworth and Vashon Island. The terminal is an essential transportation hub for the region and a significant feature of the Fauntleroy neighborhood. WSF engaged all key partners and audiences during the Planning and Environmental Linkages (PEL) study to balance perspectives and collaborate during planning and decision-making.

Throughout the PEL study, WSF engaged and collected input from Triangle route communities, advisory groups and tribes (see Figure ES-1). The team used a range of engagement tools to create accessible opportunities for community members to learn about the study, ask staff questions and share input on study decisions.

WSF convened three advisory groups – a Community Advisory Group (CAG), a Technical Advisory Group (TAG) and an Executive Advisory Group (EAG) – in summer 2021 to help shape the project during the planning phase. The advisory groups included representatives from the three Triangle route communities to encourage cross-community dialogue and collaboration in development and evaluation of project alternatives.

At the onset of this PEL process, WSF sent letters to initiate government-to-government consultation with the Muckleshoot Indian Tribe, Puyallup Tribe of Indians, Snoqualmie Indian Tribe, Squaxin Island Tribe, Stillaguamish Tribe of Indians, Suquamish Tribe, Tulalip Tribes and the Confederated Tribes and Bands of the Yakama Nation and asked for input on the planning products to be produced during the PEL process. In addition to requesting their participation in the advisory groups, WSF also offered individual meetings with each of the tribes to discuss questions and issues each may have about the project.

WSF shared project updates with community members and customers through a variety of channels:

- Project website
- WSF news release to local media
- WSF social media
- WSDOT Deputy Secretary weekly updates

Figure ES-1. PEL Study Participants



- Rider alerts
- Project email list
- Email updates to advisory groups and project partners
- Community newsletter updates
- Posters displayed at Fauntleroy and Southworth ferry terminals, aboard ferries and at community gathering places

WSF hosted community meetings, online open houses and briefings to provide accessible opportunities for people to ask questions of the project team and provide input. WSF hosted eight community meetings and information sessions and three online open houses during the PEL study. WSF invited community members to attend CAG and TAG meetings to listen in and observe. WSF recorded and posted all advisory group meeting recordings to the project website.

Alternatives Evaluation Summary

WSF developed, evaluated and refined alternatives in three levels (or steps) to recommend an alternative to move forward into the National Environmental Policy Act (NEPA) and State Environmental Policy Act (SEPA) environmental review. WSF developed screening criteria for evaluating alternatives to meet the PEL Purpose and Need. During Level 1 screening, WSF assessed 15 alternatives, with six failing to meet core project requirements. The remaining nine alternatives, all at the existing Fauntleroy ferry terminal location, advanced to Level 2 screening.

Based on the results of Level 2 screening, WSF advanced two alternatives to Level 3 screening. The first alternative involved replacing the existing terminal at its current size and location, accommodating a total of 186 vehicles through a combination of dock and shoulder holding lanes. The second alternative proposed expanding the terminal to hold up to 186 vehicles while minimizing environmental impacts, particularly to nearshore habitats and recreational areas. The Level 3 screening also considered additional operational improvements like *Good To Go!*, advance ticketing, intersection enhancements, overhead passenger loading and a second slip. Although these are not included in the current project or budget, they are not precluded from being reconsidered in the future. All alternatives included dedicated lanes for people walking and rolling onto the dock. Between the Level 2 and 3 screenings, WSF refined the conceptual designs of these alternatives resulting in evaluation of the following alternatives:

- Level 3 Alternative A: Similar dock size, maintaining existing terminal berthing structures, holding 76 vehicles

- Level 3 Alternatives A-1, A-2 and A-3: Similar dock size with new terminal berthing structures, holding 84 vehicles
- Level 3 Alternative B: Longer and wider dock, moving the ferry slip to deeper water, holding 124 vehicles
- Level 3 Alternative B-1: Longer dock with an extra holding lane, holding 155 vehicles
- Level 3 Alternative B-2: Longer dock with two shorter holding lanes, holding 155 vehicles
- Level 3 Alternative B-3: Longer dock with one less holding lane and two shorter holding lanes, holding 124 vehicles
- Level 3 Alternative C: Longer dock with an extra full-length holding lane and two shorter holding lanes, holding 186 vehicles

During Level 3 screening, WSF completed technical analyses (including engineering, environmental and operational analyses) for the Level 3 alternatives. The following summarizes the evaluation of the Level 3 alternatives:

- Level 3 Alternatives A, A-1, A-2 and A-3: Provide minimal operational efficiency benefits and propeller wash continues to maintain the scour hole
- Level 3 Alternatives B and B-3: Improve operational efficiency and minimize environmental impacts, moving the ferry slip to deeper water
- Level 3 Alternatives B-1 and B-2: Offer the greatest improvement in operational efficiency but score lower in environmental performance due to increased overwater structure
- Level 3 Alternative C: Increases overwater coverage and impacts to eelgrass and macroalgae, requiring complex permitting and environmental mitigation, with no significant operational efficiency gain over Level 3 Alternatives B, B-1, B-2 and B-3

Environmental Resource Considerations

Environmental resource considerations were evaluated as part of this PEL study; potential environmental impacts are summarized in Table ES-1.

Table ES-1. Environmental Considerations Summary

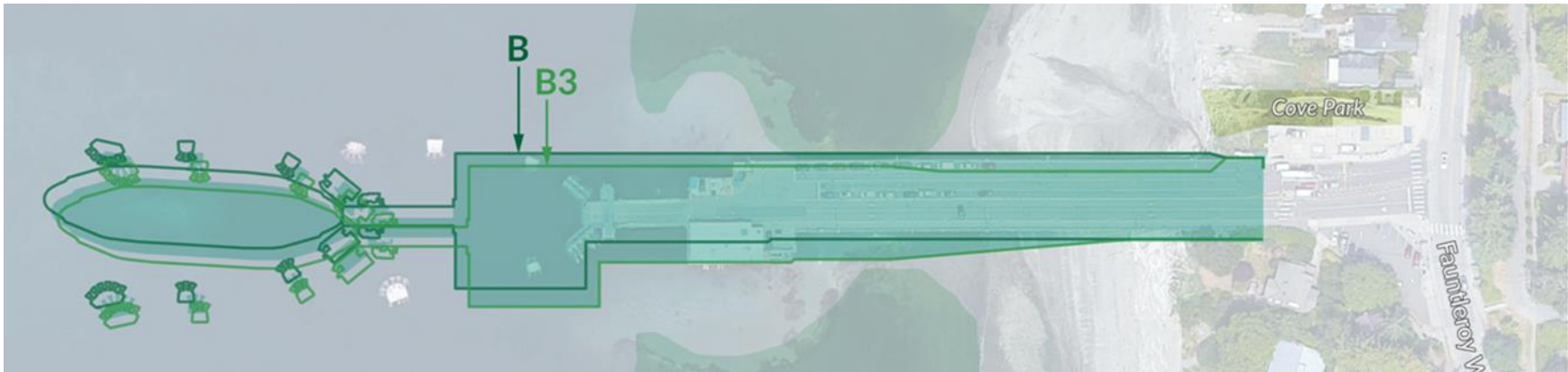
Environmental Resource	Potential Impacts	
	Construction	Operations
Fish, Wildlife and Vegetation	The project could have temporary impacts on fish and wildlife during construction because of equipment and activities like demolishing the existing facilities and building the new terminal.	The project would increase overwater structure and may impact eelgrass because of the increased size and shading. Alternatives that would move the dock into deeper, unvegetated waters have the potential to reduce or eliminate the propeller wash-associated with sediment transport and the existing scour hole, allowing for potential eelgrass recolonization in nearshore areas. The creosote-treated piles supporting the current overwater structure will be replaced with fewer steel piles, reducing pollution and improving the natural flow of Fauntleroy Creek into Fauntleroy Cove.
Wetlands and Other Waters	Project construction would include in-water work in Fauntleroy Cove, including around the mouth of Fauntleroy Creek.	The project would change the terminal's in-water footprint and reduce the density of piles supporting the dock. The use of fewer piles to support the dock would provide more space for fish to travel to and from Fauntleroy Creek.
Water Quality and Stormwater	Project construction would impact water quality, but WSF and regulatory agencies will require contractors to control sediment mobilization, turbidity and spills.	The project would improve stormwater treatment.
Hazardous Materials	The project would use hazardous materials during construction with solid waste managed according to regulations. WSF will employ best management practices (BMPs) to prevent and clean up releases during construction and operations.	WSF will employ BMPs to prevent and clean up hazardous materials released during operations.
Historic, Cultural and Archaeological Resources	Intertidal and upland construction may affect cultural resources. WSF does not plan to construct on the east side of Fauntleroy Way SW.	WSF does not anticipate operational impacts on cultural resources.
Parks and Recreation	The project would impact surrounding parks during construction, but WSF will maintain access to the beach and points north of the trestle via Cove Park with intermittent temporary closures.	The project would not permanently change access to Cove Park.

Environmental Resource	Potential Impacts	
	Construction	Operations
Air Quality and Coastal Resiliency	Construction would temporarily increase dust and pollutants.	Long-term improvements in loading efficiency may reduce vehicle idling and localized air pollution.
Noise	The project will temporarily produce increased terrestrial and in-water noise from construction activities. Noise generated from vibratory extraction and pile driving techniques may disturb or displace marine mammals, particularly sensitive species such as salmon.	Terminal operations would likely generate similar noise levels to current operations.
Land Use	Construction will temporarily affect land uses near the terminal, causing increased traffic and changes to the terminal area.	WSF does not expect changes to zoning or land use.
Visual Quality and Aesthetics	The public may notice temporary visual impacts from construction equipment and increased truck traffic.	The project would alter the terminal's footprint and raise the dock, increasing the facility's visual prominence in the surrounding landscape. While this may introduce a moderate change in visual character, WSF anticipates that the design of the new passenger building, walkway and landscaping could improve overall visual quality.

Final Study Recommendation

Based on the Level 3 screening results, WSF recommends advancing a project envelope based on Level 3 Alternatives B and B-3 with an on-dock holding capacity of 124 to 155 vehicles (see Figure ES-2). WSF will refine the project's footprint during NEPA and State Environmental Policy Act (SEPA) environmental review. Advancing this project envelope would improve operational efficiency and minimize environmental impacts (including avoiding impacts to Cove Park) by moving the ferry slip to deeper water, allowing for the potential restoration of eelgrass and macroalgae around the dock.

Figure ES-2. Final Study Recommendation – Project Envelope Based on Level 3 Alternatives B and B-3



Next Steps

After publishing the PEL study, WSF will coordinate with the Federal Highway Administration (FHWA) to advance a project envelope based on Level 3 Alternatives B and B-3 into NEPA and SEPA environmental review. During this next phase, WSF will begin preliminary design, complete environmental review and permitting and continue to seek funding opportunities. Construction is scheduled to begin in 2028, with the new terminal opening around 2031.

Based on the PEL study, WSF and FHWA anticipate that the potential project impacts on the built and natural environments can be reasonably mitigated. WSF recommends completing a NEPA environmental assessment (EA) to fully analyze the impacts of the project, identify mitigation, engage the public and inform decision-makers. WSF will need to secure permits from the federal, state and local agencies to build the project. WSF will continue engaging agency and tribal partners and Triangle route communities throughout the project.

1. Introduction and PEL Purpose and Need

1.1 PEL Study Requirements

Planning and Environmental Linkages (PEL) is an approach to transportation decision-making that involves early consideration of environmental, community and economic goals in the planning process. This process uses the information, analysis and products generated during planning to guide the National Environmental Policy Act (NEPA) review process. By consolidating the planning and early environmental review during a PEL study, duplication of work is minimized (FHWA 2015). Streamlined project development may also help expedite permit decisions. The PEL process may reduce overall timeline for project delivery, which initiates early communication and collaboration with relevant agencies, tribes and interested parties; refines a PEL Purpose and Need; conducts a preliminary screening of alternatives; and collaboratively develops better environmental outcomes. PEL collaboration includes transportation planners, engineers, NEPA practitioners, resource agency staff engaged in conservation planning or NEPA, tribal nations and the public. The planning products produced during the PEL process (see Figure 1) may be adopted during a subsequent environmental review process according to 23 *United States Code* (U.S.C.) 168, “Integration of planning and environmental review.”

PEL approaches are covered under the following federal statutes:

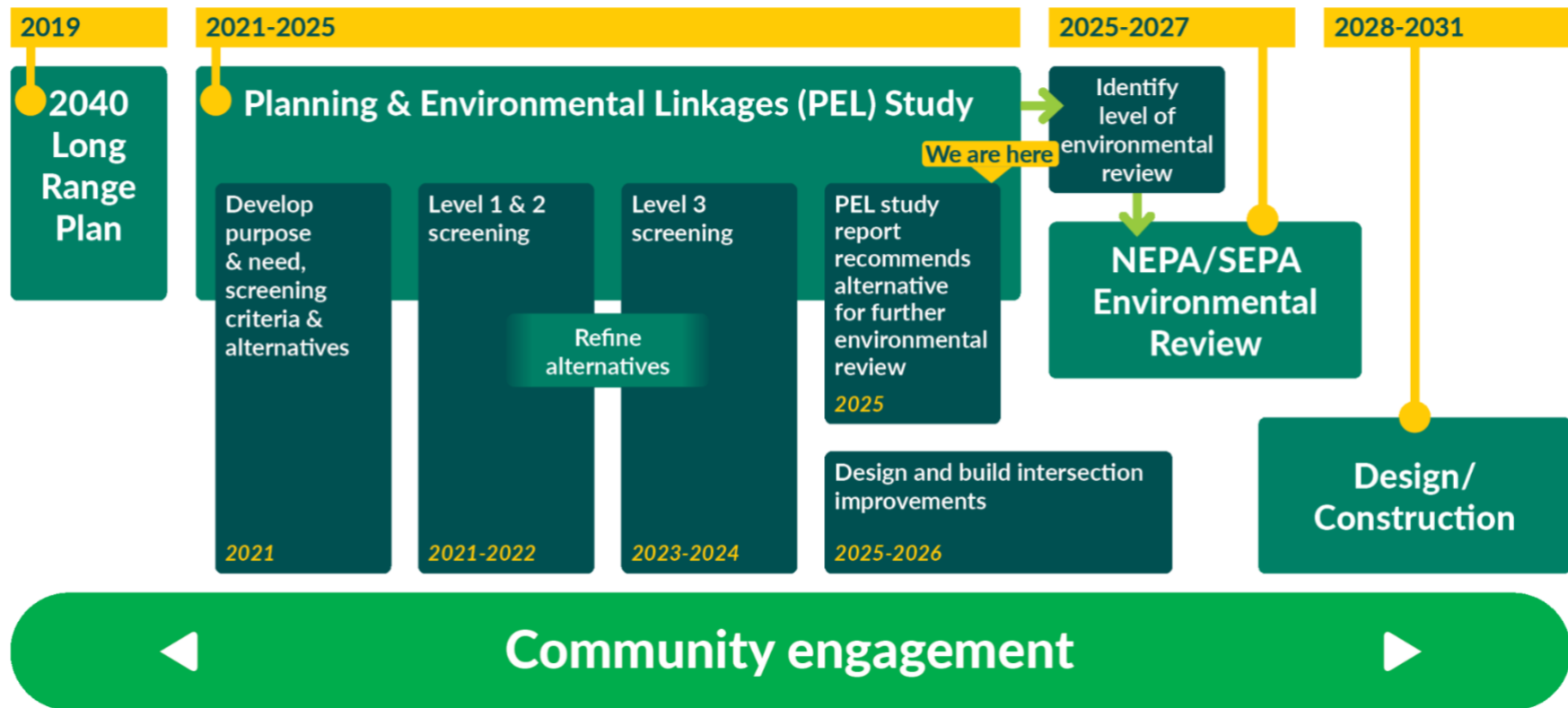
- 23 U.S.C. 168 establishes the integration of planning and environmental review by providing a process that lead and cooperating agencies may adopt or incorporate by reference a planning product to use during the environmental review process to the maximum extent practicable and appropriate.
- 23 U.S.C. 139(f)(4)(E), titled “Reduction of duplication,” allows for the incorporation of planning analyses and products developed during a PEL process to be carried forward into the environmental review process under NEPA.

Section Overview

- Overview of a PEL study's approach to transportation planning and connection to NEPA review
- Description of the study area
- Authority of 23 U.S.C. 168 to allow federal agencies to incorporate decisions from PEL study into the environmental review process under NEPA
- The PEL Purpose and Need

Together, these statutes allow certain federal agencies to incorporate decisions made by state departments of transportation during corridor studies into the environmental review process under NEPA, if the outcomes meet NEPA requirements. Washington State Ferries (WSF) worked with the Federal Highway Administration (FHWA) for PEL studies.

Figure 1. PEL and Project Development Process



1.1.1 FHWA Concurrence Points

FHWA provided concurrence with the PEL study's progress as follows:

1. April 14, 2020, Concurrence Point 1: FHWA concurs with the reason for the study and the desired outcomes. Desired outcomes include the intention to formally adopt PEL study products into the NEPA process, as outlined by 23 U.S.C. 168. Products to be adopted include the PEL Purpose and Need, preliminary screening of alternatives and elimination of unreasonable alternatives. Also, early and recurring public, agency and tribal input ensures that the process is inclusive and representative of interested parties.
2. February 28, 2022, Concurrence Point 2: FHWA concurs with the PEL Purpose and Need statement. The PEL Purpose and Need statement establishes why the project is proposed and helps determine the range of alternatives to consider.
3. February 19, 2025, Concurrence Point 3: FHWA concurs with the range of alternatives developed and evaluated. WSF refined and evaluated a range of alternatives through a multistep evaluation and screening process and identification of potential environmental impacts. WSF identified the most viable alternatives to advance to NEPA review.
4. February 24, 2026, Concurrence Point 4: FHWA approves PEL study, which documents the PEL Purpose and Need, the alternatives development and evaluation and the identified alternative to advance to NEPA review. The PEL study presents potential environmental impacts, mitigation strategies and the recommendation for the NEPA class of action. FHWA concurs that the Project would qualify for a NEPA Environmental Assessment.

Appendix A includes the PEL concurrence documents for the study.

1.1.2 Outreach and Engagement

WSF's outreach approach for this PEL study was consistent with 23 U.S.C. 168 which requires the PEL process to consult with "appropriate Federal and State agencies and Indian tribes," publicly disclose the PEL intent to adopt planning products into NEPA, make the PEL available for public review and consider any resulting comments. WSF collaborated with agencies (see Appendix C) for input on the PEL Purpose and Need, alternatives development and evaluation, environmental resources and other issues related to resources within its jurisdiction. FHWA was the lead federal agency for this PEL, which is consistent with the FHWA NEPA process.

The Washington State Department of Transportation (WSDOT) Environmental Manual M 31-11, Chapter 200.04(13), Environmental considerations in transportation planning, states, “WSDOT must consult on PEL studies with tribal governments on a government-to-government basis. This consultation is distinct from any invitations to participate as part of a general stakeholder advisory group.” (WSDOT 2024).

At the beginning of the PEL study, WSF initiated government-to-government consultation with the following:

- Muckleshoot Indian Tribe
- Puyallup Tribe of Indians
- Snoqualmie Indian Tribe
- Squaxin Island Tribe
- Stillaguamish Tribe of Indians
- Suquamish Tribe
- Tulalip Tribes
- Confederated Tribes and Bands of the Yakama Nation

WSF offered individual meetings with tribal representatives and invited tribes to participate in the advisory group meetings.

1.2 NEPA Process Principles

The PEL and NEPA environmental review processes are separate. The PEL study aims to incorporate environmental considerations into the planning phase, which allows for decisions made during this stage to inform the subsequent NEPA environmental review. PEL was designed to inform the NEPA process by using consistent approaches and terminology during the planning stage, including thorough documentation as guided by the PEL Questionnaire (Appendix B). This PEL aligns with NEPA regulations and guidance, using terminology and document titles consistent with NEPA standards, such as the following:

- Purpose and Need

- Preliminary Range of Alternatives
- Screening of Alternatives Analysis
- Recommended Alternative
- Existing Environmental Conditions

1.3 Study Area

WSF began this PEL study by evaluating alternatives that would locate the project in a similar location as the existing Fauntleroy ferry terminal and terminal relocation sites (including South Lincoln Park, Lowman Beach, Colman Dock, Southwest Elliott Bay, Burien and Des Moines as outlined in Section 3.1.1.2). After eliminating potential relocation sites in Level 1 screening, WSF refined the study area to extend 0.5-mile from the existing Fauntleroy ferry terminal area, where the Level 2 and 3 alternatives would be located, since project-related impacts would potentially occur within this area. Figure 2 shows the refined PEL study area (herein referred to as the PEL study area), represented generally by this 0.5-mile buffer. The PEL study area includes:

- Fauntleroy terminal and associated facilities
- Fauntleroy Cove's intertidal and nearshore areas (see Section 5.1 and Figure 12 for greater detail)
- Fauntleroy Creek
- Fauntleroy Way SW, which provides access to the terminal for vehicles and motorcycles and people walking, rolling and biking onto the ferry and a single shoulder holding lane for queueing in the southbound direction
- Developed areas of West Seattle, primarily residential with limited mixed use (residential and commercial development) and parks such as Cove, Captains, Lincoln, Kilbourne and Fauntleroy Parks (See Section 5.9 and Figures 13 and 14 for greater detail)

Figure 2. PEL Study Area



1.4 PEL Purpose and Need

This section summarizes the project’s background, purpose, need, goals and FHWA concurrence. The project’s Purpose and Need statement is documented in FHWA Concurrence (Appendix A).

1.4.1 Project Background

The Fauntleroy ferry terminal is an essential transportation hub for Puget Sound that serves more than 3 million riders annually including people who access ferries by walking, biking, driving and riding transit (Figure 3). The terminal supports the three-destination Fauntleroy, Vashon and Southworth ferry route with daily vehicle and pedestrian service between West Seattle, Vashon Island and the Kitsap Peninsula (Figure 4). Located in West Seattle, the terminal represents the eastern end of State Route (SR) 160, which extends west to the Sedgwick Road interchange in Kitsap County. Built in the 1950s, the Fauntleroy ferry terminal has one of the oldest docks in the WSF system. The terminal is located in a residential area and is accessed by a local arterial street (Fauntleroy Way SW), rather than a state highway.

Figure 3. Existing Fauntleroy Ferry Terminal Ticketing and Loading Operations



The PEL Purpose and Need is the starting point for developing a reasonable range of alternatives. The purpose defines the transportation problem to be solved. The need provides evidence that supports the defined transportation problem. The Purpose and Need was developed with agency and community input (described further in Section 2).

The *Washington State Ferries 2040 Long Range Plan (LRP)*, published in January 2019, is the most recently approved planning document available to guide service needs and capital investment decisions for WSF (WSDOT 2019). WSF used this document as the foundation for this PEL Purpose and Need statement.

1.4.2 Project Purpose

The purpose of the project is to improve operations on the Fauntleroy/Vashon/Southworth ferry route and preserve and upgrade the facilities serving the mainland terminus of the route, consistent with the 2040 LRP.

WSF intends to achieve the project purpose by accomplishing the following:

- Replacing seismically vulnerable and aging terminal

Figure 4. Project Location



structures to meet current structural, seismic, water quality, storm and tsunami design standards

- Raising the elevation of the terminal to account for future sea level rise and the increasing frequency and intensity of storms
- Providing operational efficiencies that support reliable service while meeting service levels projected for the route in the 2040 LRP
- Providing efficient and safe loading and fare processing for people walking, biking, rolling and driving
- Improving multimodal connectivity and providing investments in technology that enhance the customer experience and accommodate ridership growth, consistent with the 2040 LRP

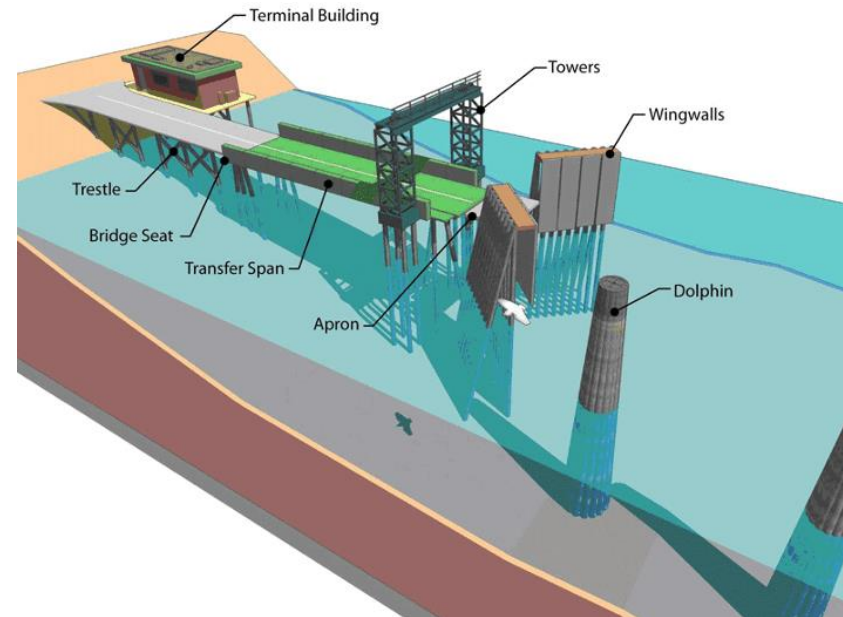
1.4.3 Project Need

The Fauntleroy ferry terminal has several operational deficiencies and preservation needs, including structural reliability, resilience, operational efficiency, safety and accommodating service levels identified in the 2040 LRP. Those factors, described below, detail WSF’s need to replace the terminal.

1.4.3.1 Structural Reliability

The Fauntleroy ferry terminal does not meet current seismic or structural design standards. The terminal’s main structural elements are at or approaching the end of their service life (Figure 5). The existing 40,000-square-foot trestle is supported by creosote-treated timber piles installed in 1957 and 1984 and steel H-piles installed at select locations in 2003 (Figure 6). Propeller wash from docked vessels scours soil away at the end of the trestle (referred to herein as the “scour hole”), which undermines the timber piles and requires repair with steel H-piles.

Figure 5. Existing Fauntleroy Ferry Terminal’s Main Structural Elements



In a 2012 seismic hazard evaluation, WSF documented liquefiable soil beneath the trestle and predicted pile failure at the end of the trestle in a 72-year seismic event (KPFF 2012). Stronger earthquakes could lead to partial collapse, and in this scenario, the terminal would be out of service and WSF would need to rebuild critical elements of the frame supporting the trestle and terminal building.

If the terminal is not replaced, this aging infrastructure will require more frequent maintenance and repair, resulting in increased maintenance costs and operational restrictions, such as temporary closures and schedule modifications that represent a risk to service reliability.

1.4.3.2 Resilience

The existing bridge seat, which supports the transfer span, sits at an elevation of 15.65 feet mean lower low water (MLLW), one of the lowest elevations in the WSF system and the lowest on the Triangle route. By comparison, the elevation of the Fauntleroy terminal is 3.46 feet lower than the Vashon terminal and 3 feet lower than the Southworth terminal. Rising sea levels and the increasing frequency and intensity of storms increases the risk of damage and inundation of the terminal, creating a safety risk for passengers and WSF staff. WSF needs a higher-elevation terminal to meet current design standards. WSF is developing a sea level rise study to determine sea level rise estimates for the Fauntleroy ferry terminal. The elevation of any proposed new terminal will employ the findings of the sea level rise study.

Figure 6. Creosote-treated Timber Piles Supporting the Existing Fauntleroy Ferry Terminal Trestle



1.4.3.3 Operational Efficiency

WSF has a systemwide on-time performance goal of 95 percent. The ability to provide on-time ferry service relates to the system capacity—how many vehicles and passengers are carried. The route is currently served by three 124-car Issaquah Class ferries, with 29 to 34 sailings per day between Fauntleroy and Vashon and 23 to 27 sailings per day between Fauntleroy and Southworth. Annual on-time performance for the route was 94.1 percent in 2020. In the 12-month (pre-pandemic) period from February 2019 to February 2020, on-time performance averaged 93 percent for the Fauntleroy/Vashon route, 90 percent for the Fauntleroy/Southworth route and 91 percent for the Southworth/Vashon route.

The following factors at the existing terminal contribute to service delays and prevent WSF from meeting its on-time performance goal:

- The existing dock has four holding lanes that can accommodate approximately 80 vehicles, which is less than one ferry can hold (Figure 7). An existing shoulder lane along Fauntleroy Way SW north of the terminal can accommodate approximately 143 additional vehicles (assuming 20-foot vehicles). The shoulder holding lane is before the toll booths, which means that the time to process vehicles through the toll booths can affect the time required to fully load a ferry (Figure 8).
- Dwell time is defined as the time it takes for a ferry to dock, unload all passengers and vehicles and load all passengers and vehicles for the next sailing. An inefficient loading process increases the dwell time. Dwell time at the terminal currently ranges from 5 to 30 minutes and averages 15 minutes. Dwell times are typically longest in the afternoon peak hours and on holidays and weekends. Inefficient vehicle staging slows fare collection at the existing terminal, which increases dwell times and delays departures during peak travel times. Cars bound for Vashon Island and Southworth are intermixed in a single -lane queue before the toll booths. The speed at which vehicles are processed is further limited by technology at the toll booth, the

Figure 7. Fauntleroy Way SW Lanes for Traffic and Holding



transaction between customer and toll booth operator and the complexity of fare options combined with dual destinations. These inefficiencies coupled with loading both vehicles and walk-ons on a single transfer span leads to delays in loading and limits WSF's ability to maintain scheduled dwell times.

- The intersection configuration and side-street stop control at the terminal and Fauntleroy Way SW constrains the efficient flow of vehicle, bicycle and pedestrian traffic from the terminal, requiring traffic control by a uniformed police officer at peak travel times.

Figure 8. Distance of Queuing, from the toll booths along the shoulder holding lane on Fauntleroy Way SW



1.4.3.4 Safety

While the number of recorded collisions is relatively low, the configuration of the existing terminal and intersection of Fauntleroy Way SW creates conflicts between people walking, biking and driving. The terminal configuration requires vehicles that qualify for priority loading, such as vanpools and emergency vehicles, need to use the exit lanes to reach the front of the holding area. Additionally, although the exit lanes are marked as exit only, they are used to access the parking area next to the terminal building for special needs accommodations as directed by terminal staff and are unofficially used as a passenger drop-off area. This can prevent unloading and create conflicts with people walking from the holding area to and from the terminal building.

People walking and biking to the terminal area, nearby transit facilities or surrounding residences must cross the intersection at Fauntleroy Way SW, where they must navigate terminal-related traffic loading and unloading movements, as well as through traffic operating along Fauntleroy Way SW (Figure 7). During peak travel times, uniformed police officers and WSF staff are utilized to control

traffic to reduce conflict risk and traveler frustration. Staff controlling traffic also face the risk of collision, which can increase during high travel demand, darkness and inclement weather.

1.4.3.5 Growth in Travel Demand

The Triangle route is a part of the state highway system that connects Seattle, Vashon Island and communities on the Kitsap Peninsula and provides a critical link for Vashon Island communities for evacuations, disaster relief and medical emergencies. Service levels in the 2040 LRP call for continued use of the three 124-car vessels on this route. This service level and vessel size confine the peak period vehicle capacity for the Triangle route, but, as the 2040 LRP notes, ferry ridership demand is expected to continue to grow. Recognizing WSF's limited ability to expand, the 2040 LRP calls for managing growth by increasing accessibility, increasing walk-on ridership and improving connections and facilities between ferries and other modes, including transit, vanpool, bicycling and walking. This reinforces the need to promote sustainable modes of travel and encourage transit integration and multimodal connections at the terminal.

1.4.4 Project Goals

WSF has the following goals to support the PEL Purpose and Need and deliver a successful project:

- Improve the customers' overall experience when using the terminal
- Foster solutions that balance the concerns and values of all three communities served by the Fauntleroy/Vashon/Southworth route
- Minimize impacts to the built environment and natural environment and be sensitive to the rich cultural and natural resources in the area in a manner that respects and preserves these resources
- Maintain constructive interagency relationships that promote coordinated transportation partnerships
- Accommodate future electrification at the terminal to charge hybrid electric ferries
- Be technically and economically feasible for WSF to construct, operate and maintain

These goals are guided by the 2040 LRP, WSF’s 2021–2023 Sustainability Action Plan (WSF 2021), WSF’s System Electrification Plan (WSF 2020) and legislative and executive requirements and WSDOT’s framework of providing a sustainable transportation system that “supports the economy, preserves the environment and enhances equity and quality of life in our communities” (*Revised Code of Washington* 47.04.280).

1.4.5 Concurrence on PEL Purpose and Need

FHWA provided concurrence on the PEL Purpose and Need on February 28, 2022 (Appendix A).

2. Agency and Public Coordination

WSF conducted the Fauntleroy terminal PEL study in partnership with FHWA and followed federal requirements (23 U.S.C. 168 and 23 U.S.C. 139). The PEL study framework encourages early involvement with the public, tribes and agencies to help WSF identify transportation issues, environmental concerns, community values and economic goals early and more effectively in project planning. For a complete list of all outreach activities, refer to Appendix C.

WSF engaged Triangle route communities, ferry customers, three advisory groups and the broader community to help shape the new terminal. WSF provided virtual engagement opportunities and shared information through accessible online and in-person channels throughout the study.

WSF's goals for engagement during the PEL study were to:

- Promote public understanding of the purpose of and need for the project at this planning stage, along with the challenges and tradeoffs WSF is working to balance
- Build alignment among WSF, agency partners and diverse ferry-served communities and foster solutions that balance the concerns and values of all groups before advancing alternatives into NEPA and SEPA environmental review
- Surface potential issues related to the environmental, community and economic impacts of the project
- Increase community awareness of the project and the PEL process WSF used to develop the alternative recommended for advancement, highlighting opportunities for public engagement

Engagement during the PEL study resulted in a community- and partner-informed decision on the alternative recommended for advancement into NEPA and SEPA environmental review.

The Fauntleroy ferry terminal serves the “Triangle” ferry route, with daily ferry service between Fauntleroy, Southworth and Vashon Island. The terminal is an essential transportation hub for the region and a significant feature of the Fauntleroy neighborhood.

Section Overview

- Engagement requirements and goals
- Summary of engagement activities and how community input informed analyses and outcomes

WSF engaged all key partners and audiences during the PEL study to balance perspectives and collaborate during planning and decision-making.

2.1 Advisory Groups

WSF convened three advisory groups in summer 2021 to help shape the project during the planning phase. The advisory groups included representatives from the three Triangle route communities to encourage cross-community dialogue and collaboration in developing and evaluating project alternatives. Each advisory group is described below and Table 1 lists the PEL advisory groups study participants (note, several invitees did not actively participate in the advisory group meetings).

2.1.1 Community Advisory Group

The Community Advisory Group (CAG) included people representing Ferry Advisory Committees (FAC), terminal neighbors, ferry customers, environmental and transportation organizations and numerous other interests from the three communities served by the Fauntleroy/Vashon/Southworth route. The CAG provided feedback about project issues and concerns, community engagement efforts and alternatives. Following an open application process, WSF selected 24 members to serve on this advisory group.

2.1.2 Technical Advisory Group

The Technical Advisory Group (TAG) included technical staff from municipal, county, state and federal agencies; federal and state resource agencies; and local tribes. The TAG provided technical input on existing conditions, the PEL Purpose and Need for the project, the alternatives development and screening criteria and the overall practicability of potential concepts, solutions and/or mitigation concepts. The TAG met regularly throughout the PEL study.

2.1.3 Executive Advisory Group

The Executive Advisory Group (EAG) represented local and state-appointed or elected officials, transportation agency leadership, federal partners and tribal leadership. The EAG provided advice and input on how to prioritize needs, represent its constituents' interests and share feedback on key policy elements and project alternatives.

Table 1. PEL Advisory Group Participants

TAG	CAG	EAG
<ul style="list-style-type: none"> • Squaxin Island Tribe • Stillaguamish Tribe of Indians • Suquamish Tribe • King County Metro • King County Wastewater Treatment Division • Kitsap Transit • Kitsap County Public Works • National Marine Fisheries Service • Port of Seattle • Seattle City Light • SPU • SDOT • SPR • USACE • USFWS • Vashon Island Fire & Rescue • Ecology • WDFW • WDNR • Washington State Transportation Commission 	<ul style="list-style-type: none"> • Ana White, Southworth resident • Angus Macnab, King County resident/Vashon commuter student parent • Anne Higuera, West Seattle business owner/Vashon resident • David McDaniel, Fauntleroy and Vashon community member • Devin Branson, Vashon resident and West Seattle commuter • Emily Scott, Vashon Island Foodbank Executive Director • Fletcher Sandbeck, Kitsap resident • Frank Immel, Fauntleroy Community Association, FAC member, neighbor • Gary English, Vashon community member • Greg McKinnon, Manchester resident, daily ferry commuter • Helen Westphal, King County resident • Jon Wright, West Seattle Transportation Coalition • Josh Gwynn, Southworth area community member • Judy Pickens, Fauntleroy Watershed Council • Justin Hirsch, Vashon Island FAC • Malcolm Collie, Southworth FAC 	<ul style="list-style-type: none"> • Leonard Forsman, Chairman of the Suquamish Tribe • Senator Emily Randall, 26th Legislative District • Senator Joe Nguyen, 34th Legislative District • Representative Joe Fitzgibbon, 34th Legislative District • Representative Emily Alvarado, 34th Legislative District • Commissioner Charlotte Garrido, Kitsap County District 2 • John Clauson, Kitsap Transit Executive Director • Ralph Rizzo, FHWA Division Administrator • Michelle Allison, King County Metro General Manager • Steve Nevey WSDOT Assistant Secretary – WSF • Greg Spotts, SDOT Director • Councilmember Teresa Mosqueda, King County Council District 8 (invited) • Councilmember Rob Saka, City of Seattle District 1 (invited)

TAG	CAG	EAG
	<ul style="list-style-type: none"> • Mardi Clements, Fauntleroy Community Association, West Seattle resident near ferry • Michelle McCormick, West Seattle and Vashon resident • Richard Thorp, Southworth area community member • Scott Harvey, Vashon resident, irregular ferry traveler • Susan Frith, Vashon resident/former West Seattle resident • Victoria Nelson, West Seattle Transportation Coalition Board Member, Fauntleroy resident 	

Ecology = Washington State Department of Ecology
SDOT = Seattle Department of Transportation
SPR = Seattle Parks and Recreation
SPU = Seattle Public Utilities
USACE = U.S. Army Corps of Engineers
USFWS = U.S. Fish and Wildlife Service
WDFW = Washington Department of Fish and Wildlife
WDNR = Washington State Department of Natural Resources

2.2 FHWA

As the federal lead agency and partner for this PEL study, FHWA provided input and oversight throughout the process. WSF and FHWA met bimonthly to provide regular status updates, review the project schedule and deliverables and to strategize on the planning process. FHWA also participated in tribal coordination and attended advisory group meetings. Through these meetings, FHWA contributed to the development of the PEL Purpose and Need, range of alternatives, alternatives evaluation process and results and the alternative recommended for advancement into NEPA and SEPA environmental review. Additionally, FHWA provided review and concurrence at various PEL study milestones (Appendix A).

2.3 Tribal Nation Coordination

At the onset of this PEL process, WSF sent letters to initiate government-to-government consultation with eight tribes and asked for input on the planning products produced during the PEL process.

In addition to requesting their participation in the advisory groups, WSF also offered individual meetings with each of the tribes to discuss questions and issues each may have about the project and to present the outcome of other engagement efforts if a tribe was unable to or did not consult.

2.4 Public and Community Participation

Throughout the PEL study, WSF worked to transparently, frequently and equitably engage Triangle route communities. The team used a range of engagement tools to create accessible opportunities for community members to learn about the project, ask project staff questions and share input on project decisions. Appendix C details the public engagement process and input received.

2.4.1 Information Distribution

WSF shared updates and information about the project through a variety of notifications and channels:

- Project website
- WSF news release to local media
- WSF social media
- WSDOT Deputy Secretary weekly updates
- Rider alerts
- Project email list
- Email updates to advisory groups and project partners
- Community newsletter updates

- Posters displayed at Fauntleroy and Southworth ferry terminals, aboard ferries and at community gathering places

WSF hosted eight community meetings and information sessions and three online open houses during the PEL study.

WSF regularly offered briefings to project partners and other interested groups. Briefing participants included Islanders for Ferry Action, Fauntleroy Community Association, Morgan Community Association, Seattle Design Commission, Vashon Island School District, Vashon-Maury Island Community Council and West Seattle Transportation Coalition.

Community members were invited to attend CAG and TAG meetings to listen in and observe. WSF recorded and posted all advisory group meeting recordings to the project website.

2.4.2 Open Houses

WSF hosted three online open houses to share project information and invite community members to submit comments and questions.

- Open house #1: May 18, 2022
 - WSF shared the draft PEL Purpose and Need, range of alternatives and initial screening results
- Open house #2: April 24, 2024
 - Featured information about environment near the terminal, Level 3 alternatives and screening criteria
- Open house #3: February 24, 2025
 - Included information about the approach to and results of Level 3 screening and the identified alternative moving into the environmental review phase

2.4.3 Advisory Group and Public Input

WSF gathered robust input from the advisory groups, community members and organizations during the PEL study. Advisory groups and community members reviewed and provided input on key project deliverables, including the PEL Purpose and Need, screening criteria and range of alternatives

The TAG frequently discussed:

- WSF’s plan for permitting and environmental mitigation
- Environmental questions and comments regarding overwater coverage and potential habitat impacts
- Enhancing multimodal and transit access at the terminal
- Accessibility for people who are disabled or who use wheelchairs or other mobility devices
- Coordination over proposed intersection changes

Triangle route communities organized to share their priorities related to terminal replacement. Throughout all engagement efforts, WSF heard consistent support for replacing the aging dock with a reliable, seismically sound new terminal facility. WSF received feedback from CAG members, ferry customers, community members and community groups including Fauntleroy Community Association, Fauntleroy Watershed Association, Islanders for Ferry Action and Save Fauntleroy Cove. Southworth and Vashon Island community members generally expressed support for a larger dock that enhances loading and operational efficiency, improves accessibility and provides more reliable service. WSF also heard from Fauntleroy neighbors who prefer WSF maintain a similar-sized dock that preserves the neighborhood character and minimizes impacts on Cove Park, new overwater coverage and the surrounding environment (Figure 9). Fauntleroy neighbors also advocated for exploring strategies to improve efficiency of terminal operations.

Figure 9. Summary of What WSF Heard from Triangle Route Communities

What we heard



WSF consistently heard from the advisory groups, as well as resource agencies and the Suquamish Tribe, about the importance of minimizing impacts to the surrounding environment and building a terminal that operates more efficiently. For these reasons WSF focused on the two screening criteria most critical to meeting the PEL Purpose and Need – developing a new terminal that meets the operational needs while minimizing impacts to the surrounding environment and community to the extent feasible. WSF considered this input in the alternatives screening processes and decision to recommend an alternative to advance to NEPA and SEPA environmental review.

3. Alternatives Development and Screening

This section summarizes the alternatives that were screened as a part of this PEL study.

3.1 Alternatives Screening Process Summary

WSF developed, evaluated and refined alternatives in three levels (or steps) to provide a recommendation for an alternative to advance into NEPA and State Environmental Policy Act (SEPA) environmental review (Figure 10). WSF developed criteria for screening alternatives based on the ability to meet the project’s PEL Purpose and Need. WSF presented the screening criteria and results to federal, state; local agencies and tribal representatives; and Triangle ferry route communities for review and comment.

During Level 1 screening, WSF evaluated 15 alternatives, some at the location of the existing Fauntleroy ferry terminal and some at other locations (see Appendix D). WSF found that, of these, six alternatives do not meet several core elements of the project’s PEL Purpose and Need. The remaining nine alternatives, all at the location of the existing Fauntleroy ferry terminal, advanced to Level 2 screening.

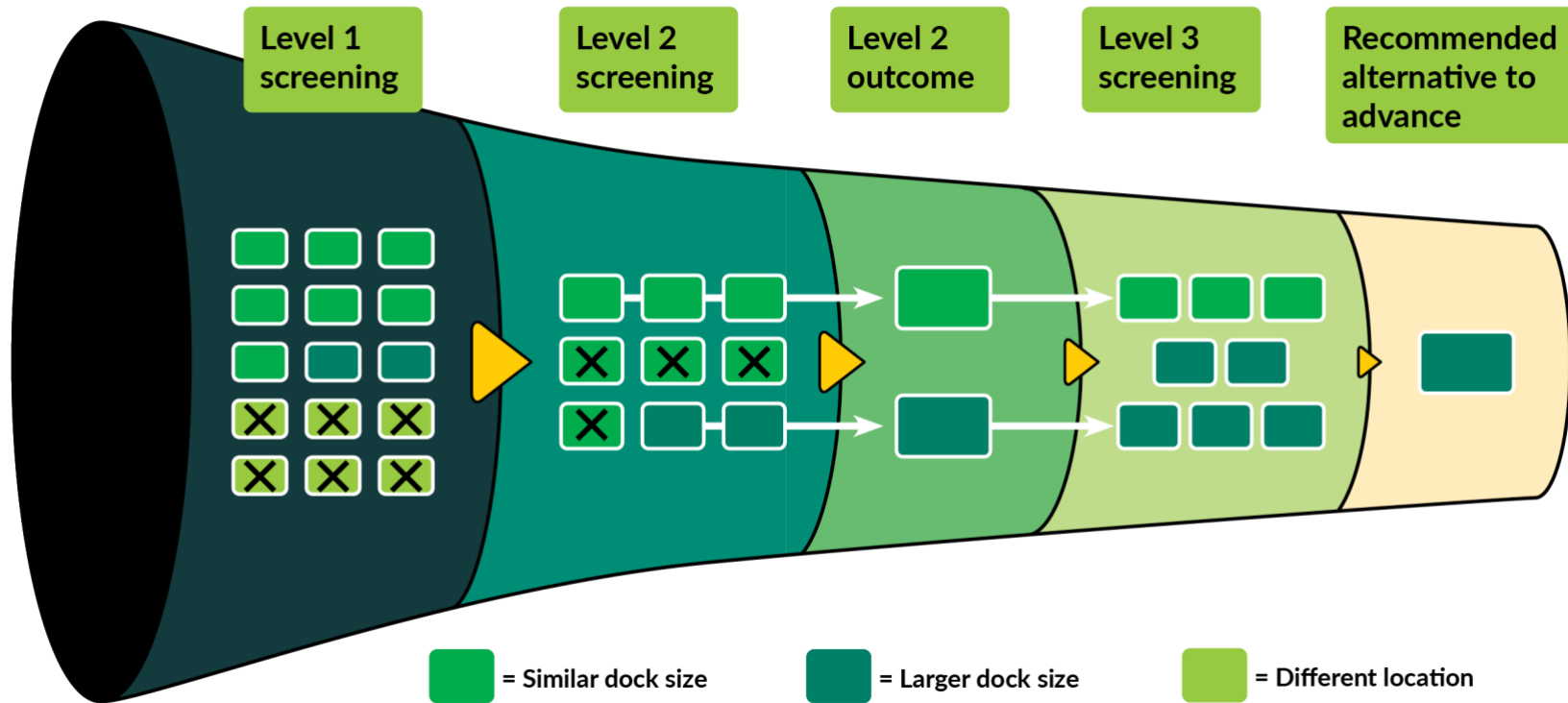
Based on the Level 2 screening results, WSF advanced two alternatives: (1) replace the terminal with a similar size and at the same location as the existing facility (Level 1 Alternatives A-1, A-2 and A-3) and (2) expand the terminal at the existing location (Level 1 Alternatives B and C) (see Appendix D).

During Level 3 screening, WSF refined the alternatives based on Level 2 screening results, community and advisory group input (see Appendix D). This included qualitative and quantitative analyses to assess the performance of the alternatives with regards to key considerations such as environment, traffic, *Good To Go!* and advance ticketing, intersection improvements, constructability and cost. WSF developed alternatives that replace the terminal at the same location with one of a similar size (Level 3 Alternatives A, A-1, A-2 and A-3) and alternatives that expand the terminal for increased on-dock vehicle holding capacity compared to the existing condition (Level 3 Alternatives B, B-1, B-2, B-3 and C) (see Appendix E). WSF conducted technical analyses of the Level 3 alternatives, including engineering, operational and environmental.

Section Overview

- Alternatives considered throughout the PEL study
- Screening criteria used during the Levels 1 through 3 screenings of the alternatives
- Screening results and selection of an alternative advancing to NEPA review

Figure 10. PEL Alternatives Screening Process



3.1.1 Level 1 Screening Summary

This section summarizes the Level 1 screening process, alternatives and screening results.

3.1.1.1 Level 1 Screening Process

During the Level 1 screening, WSF focused on evaluating how well alternatives met the project's PEL Purpose and Need compared to existing conditions. WSF scored the alternatives based on the following screening criteria:

- PEL Purpose and Need criteria:
 - Ability to meet requirements for structural reliability
 - Ability to accommodate projected sea level rise
 - Ability to improve operational efficiency (that is, minimize dwell time, process vehicles more efficiently, maintain on-time performance)
 - Ability to reduce the number of conflict points between traffic modes (safety for people driving, walking and biking)
 - Ability to meet operational requirements (186 vehicles on the dock or in upland holding, access and maneuverability for an Issaquah Class ferry, connection to a minor arterial street)
 - Ability to keep the current sailing schedule
 - Ability to enhance multimodal connections, connect to transit and/or allow for growth in walk-ons, bicycles and vanpools
- Additional criteria:
 - Ability to avoid changes to parks and recreational areas (Section 4(f) of the Department of Transportation Act [Section 4(f)]/Section 6(f) of the Land and Water Conservation Fund Act [Section 6(f)], Recreation and Conservation Office funded projects)
 - Ability to avoid changes to traffic circulation on local streets near ferry terminal
 - Project cost (design, planning, right of way, risk, construction)
 - Alignment with current project schedule

- Project feasibility—amount of additional right of way needed beyond existing terminal footprint
- Permitting and coordination (level of coordination with tribes and other partners, permitting complexity)
- Changes to existing policies and regulations that risk project delay

3.1.1.2 Level 1 Alternatives

WSF developed 15 alternatives for Level 1 screening, including two alternatives in Elliott Bay, two alternatives in the Burien/Des Moines areas and 11 alternatives in the Fauntleroy area. WSF screened each alternative at a high level using the Level 1 criteria. The Level 1 alternatives are summarized in Table 2.

All of the Level 1 alternatives in Fauntleroy maintain the same ferry crossing time and would allow WSF to keep the current sailing schedule and the number of sailings and peak period departures. For these alternatives, WSF could consider solutions to reduce conflicts between people walking, biking and driving. The Level 1 alternatives which would maintain the terminal’s current location also maintain access to transit service, while the alternatives that would move the terminal to a new location do not.

Table 2. Level 1 Alternatives

Level 1 Alternative	Summary	Description
A-1	Replace dock at same size and location	<p>Level 1 Alternative A-1 would replace the dock at the same size and location as the existing facility and could hold up to 80* vehicles. The shoulder holding lane would remain the same length as its current condition to accommodate a total of 186 vehicles.</p> <p>This alternative would meet many core elements of the purpose and need but would not improve operational efficiency beyond what exists today.</p>
A-2	Replace dock at same size and location and add <i>Good To Go!</i>	Level 1 Alternative A-2 would replace the dock at the same size and location as the existing facility and could hold 80 vehicles. The shoulder holding lane would remain the

Level 1 Alternative	Summary	Description
		<p>same length as its current condition to accommodate a total of 186 vehicles. This alternative would include <i>Good To Go!</i> for operational efficiency.</p> <p>At the time of Level 1 screening, WSF had not yet studied how <i>Good To Go!</i> or similar systems would work for the ferry system or this route. The related changes to the existing fare structure and implementation of a new program would potentially delay the project schedule.</p>
A-3	Replace dock at same size and location and add advance ticketing	<p>Level 1 Alternative A-3 would replace the dock at the same size and location as the existing facility and could hold 80 vehicles. The shoulder holding lane would remain the same length as its current condition to accommodate a total of 186 vehicles. This alternative would include an advance ticketing system for greater operational efficiency.</p> <p>WSF would need to evaluate the potential benefits and impacts of an advance ticketing system and request authorization to change fare collection processes –a process and policy change that would potentially delay the project schedule.</p>
A-4	Replace dock at same size and location and add two-lane holding on Fauntleroy Way	<p>Level 1 Alternative A-4 would replace the dock at the same size and location as the existing facility and could hold up to 80 vehicles. This alternative would convert the southbound lane on Fauntleroy Way to a second holding lane, converting Fauntleroy Way to a one-way street heading north (away from the terminal).</p> <p>Effects on traffic circulation would require more coordination with SDOT. Changes to terminal access would impact transit routing and connections and access to private properties. This alternative would potentially improve operational efficiency by separating vehicles headed to Southworth and Vashon Island.</p>
A-5	Replace dock at same size and location and add two direction approach for holding	<p>Level 1 Alternative A-5 would replace the dock at the same size and location as the existing facility and could hold up to 80 vehicles. To support vehicle processing, this alternative would include separate approach routes and vehicle holding for the two destinations served by the Fauntleroy terminal. Vehicles traveling to Vashon Island would</p>

Level 1 Alternative	Summary	Description
		<p>line up on Fauntleroy Way and vehicles headed to Southworth would access the terminal from SW Wildwood Place.</p> <p>Effects on traffic circulation would require more coordination with SDOT. Changes to terminal access would impact transit routing and connections, neighborhood connectivity and access to private properties. It is unclear whether SW Wildwood Place would accommodate both ferry holding and local traffic.</p>
A-6	Replace dock at same size and location and add remote holding at 47th Avenue and Fauntleroy Way	<p>Level 1 Alternative A-6 would replace the dock at the same size and location as the existing facility and holds up to 80 vehicles. This alternative would include a remote holding lot near 47th Avenue SW, holding up to 106 vehicles to accommodate a total of 186 vehicles.</p> <p>This alternative would require more coordination with SDOT to modify traffic circulation, purchase additional right of way to build the remote holding lot and implement operational changes to how vehicles are managed at the terminal.</p>
A-7	Replace dock at same size and location and add remote holding at Lincoln Park	<p>Level 1 Alternative A-7 would replace the dock at the same size and location as the existing facility and could hold up to 80 vehicles. This alternative would use the existing south parking lot at Lincoln Park to hold up to 106 vehicles, accommodating a total of 186 vehicles.</p> <p>In addition to the factors associated with building a remote holding lot mentioned under Level 1 A-6, this alternative would require more coordination with permitting agencies and would impact Lincoln Park.</p>
B	Expand existing dock at Fauntleroy—124 vehicle capacity	<p>Level 1 Alternative B would replace the dock with a longer dock that could hold up to 124 vehicles. Fewer cars would need to line up outside the terminal, so the holding lane on Fauntleroy Way could hold up to 62 vehicles to accommodate a total of 186 vehicles.</p> <p>Expanding the dock would require more extensive coordination with partner agencies and Tribes for more complex permitting.</p>

Level 1 Alternative	Summary	Description
C	Expand existing dock at Fauntleroy—186 vehicle capacity	<p>Level 1 Alternative C would replace the dock with a wider dock that could hold up to 186 vehicles without vehicles lining up on Fauntleroy Way. This alternative would improve operational efficiency by holding more vehicles on the dock.</p> <p>Expanding the dock to accommodate 186 vehicles would require more extensive permitting, coordination with King County Wastewater Treatment Division over impacts to the Barton Street Pump Station adjacent to the existing terminal and would impact Cove Park.</p>
D	South Lincoln Park terminal	<p>Level 1 Alternative D would replace the terminal with a new dock at the south end of Lincoln Park. This alternative holds up to 186 vehicles without any vehicles lining up on Fauntleroy Way SW.</p> <p>The steep slopes in this area would make it difficult to connect ferry riders to transit. This alternative would also impact Lincoln Park and would require purchasing new right of way land to build the terminal and supporting infrastructure. These factors would increase the overall project cost, affect schedule and would require extensive permitting and coordination with multiple partner agencies.</p>
E	Lowman Beach terminal	<p>Level 1 Alternative E would replace the terminal with a new dock at Lowman Beach and hold up to 186 vehicles.</p> <p>Lowman Beach Park is surrounded by steep slopes and residential homes. Building a ferry terminal in this area would cause significant changes to traffic circulation on residential streets because there are no existing minor arterial roadways. The steep slopes in this area would also make it difficult to connect ferry riders to transit. This alternative would impact Lowman Beach Park and would require purchasing new right of way land to build the terminal and supporting infrastructure. These factors would increase the overall project cost, affect schedule and would require extensive permitting and coordination with multiple partner agencies.</p>

Level 1 Alternative	Summary	Description
F	Move terminal to Colman Dock	<p>Level 1 Alternative F would relocate the dock to the existing Colman Dock facility in downtown Seattle.</p> <p>Bringing an additional 3 million riders per year through WSF's busiest terminal would create operational inefficiencies and impact Seattle/Bainbridge, Seattle/Bremerton and Fautleroy/Vashon/Southworth passengers. There is no space for holding additional vehicles at this location. Building a dock at this location also requires extensive coordination with local agencies, including the City of Seattle and tribal governments.</p>
G	Move terminal to Southwest Elliott Bay (Jack Block Park, Seacrest Park, T5 area)	<p>Level 1 Alternative G would replace the Fautleroy ferry terminal with an expanded dock within Southwest Elliott Bay, such as near Jack Block Park, Seacrest Park or T5 terminal. This alternative would hold up to 186 vehicles.</p> <p>There are fewer transit connections in this area than the current terminal at Fautleroy. Building a ferry terminal in this area would also impact Jack Block or Seacrest parks or access to those parks and require purchasing new right of way to build the terminal and supporting infrastructure. Building a dock at this location would also create completely new travel patterns, increasing traffic on surrounding streets. These factors would increase the overall project cost, affect schedule and require extensive permitting and coordination with Port of Seattle, the City of Seattle and other partner agencies.</p>
H	Move terminal to Burien	<p>Level 1 Alternative H would replace the Fautleroy ferry terminal with a new dock in Burien holding up to 186 vehicles.</p> <p>There are fewer transit connections in Burien than at the current terminal in Fautleroy. Building a ferry terminal in this area may impact nearby parks or waterfront, depending on the specific location and would require purchasing new right of way land to build the terminal and supporting infrastructure. There are few minor arterials to connect to ferry terminals in this area. Building a ferry terminal in Burien would create completely new travel patterns, increasing traffic on surrounding streets. These factors would increase the overall project cost, affect schedule and would require extensive permitting and coordination with multiple partner agencies.</p>

Level 1 Alternative	Summary	Description
I	Move terminal to Des Moines	<p>Level 1 Alternative I would replace the Fauntleroy ferry terminal with a new dock in Des Moines holding up to 186 vehicles.</p> <p>There are fewer transit connections in Des Moines than at the current terminal in Fauntleroy. Building a ferry terminal in this area may impact nearby parks or waterfront, depending on the specific location and would require purchasing new right of way land to build the terminal and supporting infrastructure. There are few minor arterials to connect to ferry terminals in this area. Building a ferry terminal in Des Moines would create completely new travel patterns, increasing traffic on surrounding streets. These factors would increase the overall project cost, affect schedule and would require extensive permitting and coordination with multiple partner agencies.</p>

* = The Levels 1 and 2 screenings included a high-level review of concepts in which WSF preliminarily estimated the existing dock holds about 80 vehicles. In the Level 3 screening, WSF completed a more detailed assessment which indicated that the existing on-dock holding capacity is about 84 vehicles. This number is in alignment with the information provided in WSF's Terminal Design Manual.

3.1.1.3 Level 1 Screening Results

Based on the Level 1 screening results, WSF advanced all alternatives that keep the terminal in the existing location to the Level 2 screening for further analysis and refinement. WSF did not carry forward alternatives at Elliott Bay, the Burien/Des Moines areas and at other locations in Fauntleroy which do not meet three or more Level 1 criteria. WSF advanced the following Level 1 alternatives to Level 2 Screening:

- Alternative A-1 – Replace dock at same size and location
- Alternative A-2 – Replace dock at same size and location and add *Good To Go!*
- Alternative A-4 – Replace dock at same size and location and add advance ticketing
- Alternative A-4 – Replace dock at same size and location and add two-lane holding on Fauntleroy Way
- Alternative A-5 – Replace dock at same size and location and add two direction approach for holding
- Alternative A-6 – Replace dock at same size and location and add remote holding at 47th Avenue and Fauntleroy Way

- Alternative A-7 – Replace dock at same size and location and add remote holding at Lincoln Park
- Alternative B – Expand existing dock at Fauntleroy—124 vehicle capacity
- Alternative C – Expand existing dock at Fauntleroy—186 vehicle capacity

Based on the Level 1 screening results, the following Level 1 alternatives did not meet several core elements of the project PEL Purpose and Need, failing to meet at least three of the Level 1 criteria. The Level 1 alternatives at South Lincoln Park and Lowman Beach would require purchasing significantly more right of way, reconfiguring local streets to create ferry access and would provide fewer connections to transit. Level 1 alternatives that would move the ferry terminal out of Fauntleroy to Downtown Seattle, Southwest Elliott Bay, Burien or Des Moines would drastically increase sailing times and decrease frequency of sailings, reducing the amount of ferry service to Vashon Island and Southworth. In addition, moving the terminal to a new location would require purchasing right of way and other factors that would increase projects costs well beyond the current project budget. WSF did not advance the following Level 1 alternatives to Level 2 screening:

- Level 1 Alternative D – South Lincoln Park terminal
- Level 1 Alternative E – Lowman Beach terminal
- Level 1 Alternative F – Move terminal to Colman Dock
- Level 1 Alternative G – Move terminal to Southwest Elliott Bay (Jack Block Park, Seacrest Park, T5 area)
- Level 1 Alternative H and I – Move terminal to Burien or Des Moines

3.1.2 Level 2 Screening Summary

This section summarizes the Level 2 screening process, alternatives and screening results.

3.1.2.1 Level 2 Screening Process

During the Level 2 screening WSF focused on the same criteria outlined in the Level 1 screening summary in more detail. WSF also considered the environment surrounding the Fauntleroy ferry terminal. WSF selected to study these criteria in response to input received from advisory groups and Triangle route communities. Table 3 describes Level 2 screening criteria.

During the Level 2 screening process, WSF applied the same screening method used during Level 1, removing alternatives with a score of “low or no likelihood” to meet more than two criteria from further consideration.

Environmental Considerations

WSF reviewed the environmental conditions surrounding the Fauntleroy ferry terminal to inform Level 2 screening. The terminal is located in Fauntleroy Cove along the Puget Sound coast. This marine environment is a navigable waterway and protected habitat for fish and wildlife. Fauntleroy Creek is home to salmon and other native fish and currently flows under the terminal to enter the cove. On the north side of the terminal, Cove Park provides scenic waterfront access and a community beach. To the north, Lincoln Park offers walking paths, bike trails, picnic shelters, playfields, a saltwater pool and waterfront access for the community.

Table 3. Level 2 Screening Criteria

Level 2 Screening Criteria	Description
Operations and customer experience	Ability to improve operational efficiency by: <ul style="list-style-type: none"> • Minimizing dwell time • Processing vehicles more efficiently • Maintaining on-time performance • Increasing the ease and consistency of customer queuing, ticketing and boarding processes (customer experience) • Maintaining traffic flow to the terminal
Safety	Ability to reduce the number of conflict points between all users, including: <ul style="list-style-type: none"> • People driving and using transit • Emergency responders and commercial vehicles • People biking, walking or rolling • Ferry customers • WSF staff
Multimodal connections	Ability to enhance connections between people walking, biking and using transit get to and from the Fautleroy ferry terminal and along Fautleroy Way SW.
Park and recreational areas Permitting and coordination	Ability to avoid changes to parks and recreational areas by avoiding or minimizing impacts to these areas.
Traffic circulation	Would impact traffic flow by requiring changes to traffic circulation on local streets near the terminal.

3.1.2.2 Level 2 Alternatives

Table 4 summarizes the Level 2 alternatives.

Table 4. Level 2 Alternatives

Level 2 Alternative	Summary	Description
A-1	Replace dock at same size and location	Level 2 Alternative A-1 would replace the dock at the same size and location with a capacity of 80 vehicles. The shoulder holding lane would accommodate 186 vehicles.
A-2	Replace dock at same size and location and add <i>Good To Go!</i>	Level 2 Alternative A-2 would replace the dock at the same size and location (80 vehicles) and add <i>Good To Go!</i> payment options (windshield transponders, Pay By Plate or Pay By Mail).
A-3	Replace dock at same size and location and add advance ticketing	Level 2 Alternative A-3 would replace the dock at the same size and location (80 vehicles) and add an advance ticketing system.
A-4	Replace dock at same size and location and add two-lane holding on Fautleroy Way	Level 2 Alternative A-4 would replace the dock at the same size and location (80 vehicles) and convert the southbound lane on Fautleroy Way to a second holding lane, making Fautleroy Way one-way northbound.
A-5	Replace dock at same size and location and add two direction approach for holding	Level 2 Alternative A-5 would replace the dock at the same size and location (80 vehicles) and add two separate approach routes and vehicle holding for Vashon and Southworth.
A-6	Replace dock at same size and location and add remote holding at 47th Avenue and Fautleroy Way	Level 2 Alternative A-6 would replace the dock at the same size and location (80 vehicles) and add a remote holding lot near 47th Avenue SW for up to 106 vehicles.
A-7	Replace dock at same size and location and add remote holding at Lincoln Park	Level 2 Alternative A-7 would replace dock at the same size and location (80 vehicles) and use the existing south parking lot at Lincoln Park to hold up to 106 vehicles, accommodating a total of 186 vehicles.
B	Expand existing dock at Fautleroy – 124 Vehicle Capacity	Level 2 Alternative B would expand the existing dock at Fautleroy to a capacity of 124 vehicles.
C	Expand existing dock at Fautleroy – 186 Vehicle Capacity	Level 2 Alternative C would expand existing dock at Fautleroy to a capacity of 186 vehicles.

3.1.2.3 Level 2 Screening Results

Based on results of Level 2 screening WSF advanced the following Level 2 alternatives to the Level 3 screening:

- **Replace existing terminal (Level 2 Alternatives A-1 through A-3)** – WSF would replace the terminal with a similar size and at the same location as the existing facility. The dock would hold up to 80 vehicles and the shoulder holding lane would accommodate an additional 106 vehicles, for a total of 186 vehicles. WSF would consider strategies to improve terminal operations including *Good To Go!* and advance ticketing policies and other operational changes like intersection improvements and features to make it easier to walk, bike and roll onto the ferry.
- **Expand terminal (Level 2 Alternatives B and C)** – WSF would replace the terminal at the existing location and expand the dock to hold up to 186 vehicles. WSF would need to avoid or minimize permanent impacts to nearshore habitat and recreational areas, including Cove Park. Depending upon the final dock size, WSF may manage some vehicles along the shoulder of Fautleroy Way. Based on the results of the Level 2 screening, the project team eliminated Level 1 Alternative C. WSF will refine Alternative B to avoid and minimize permanent environmental impacts while providing on-dock holding for 124 to 186 vehicles. At a conceptual level, WSF will continue to evaluate potential benefits of additional operational elements such as overhead passenger loading and a second slip for a future project. WSF did not include these elements in the current project budget.

Based on the results of Level 2 screening, the following alternatives did not meet several core elements of the project’s PEL Purpose and Need and did not advance to the Level 3 screening:

- Level 2 Alternative A-4: Replace dock at same size and location and add two-lane holding on Fautleroy Way
- Level 2 Alternative A-5: Replace dock at same size and location and add two direction approach for holding
- Level 2 Alternative A-6: Replace dock at same size and location and add remote holding at 47th Avenue and Fautleroy Way
- Level 2 Alternative A-7: Replace dock at same size and location and add remote holding at Lincoln Park

3.1.3 Level 3 Screening Summary

This section summarizes the Level 3 screening process, alternatives and screening results.

3.1.3.1 Level 3 Screening Process

Following Level 2 screening, WSF refined the alternatives and screening process, with the goal of identifying an alternative to advance into NEPA and SEPA environmental review through the Level 3 screening. WSF applied the Level 1 and 2 screening criteria and developed 29 performance factors to determine how well Level 3 alternatives meet the Purpose and Need compared to a No Build Alternative (in which the existing Fauntleroy terminal trestle and transfer span would not be replaced). WSF considered community and advisory group input and technical analyses (that is, Basis of Design, Environmental Analysis (Appendix F), Traffic Analysis, Intersection Configuration Memorandum, *Good To Go!* and *Wave2Go* Advance Ticketing Payment Options Study, Construction Approach Memorandum and Estimate of Program Cost) to develop these performance factors.

To assess how the alternatives met the screening criteria, WSF used high-medium-low categories. Where a performance factor posed a “yes or no” question, the alternative received a high (yes) or low (no) rating. If a factor posed a question about how an alternative met a specific or quantifiable consideration, the alternative received a high, medium or low rating. Table 5 details the Level 3 screening criterion performance factors.

Screening Criteria

General indicators of whether alternatives meet the project’s PEL Purpose and Need. WSF developed criteria in Level 1 and applied these during Level 1, 2 and 3 screenings.

Performance Factors

Specific indicators of how well alternatives meet each criterion based on characteristics of the alternatives.

Table 5. Level 3 Screening Criteria and Performance Factors

Screening Criteria	Performance Factors
Ability to meet the requirements for structural reliability	Does the alternative meet design codes and requirements for structural reliability?
Ability to accommodate project sea level rise (resilience)	Does the alternative accommodate projected sea level rise?

Screening Criteria	Performance Factors
Ability to improve operational efficiency (that is, minimize dwell time, process vehicles more efficiently and maintain on-time performance)	<ul style="list-style-type: none"> • How does the alternative maintain or improve ferry schedule reliability (timely and reliable loading and unloading)? • How does the alternative change vehicle queuing on Fautleroy Way SW (including potential upland and community effects, customer experience, etc.)? • Does the alternative improve WSF’s ability to stage and handle the mix of arriving volumes based on destination (Southworth or Vashon), truck traffic and transit? • How does adding a signalized intersection improve operational efficiency of unloading the ferry? • Does the alternative provide space to sort and accommodate Americans with Disabilities Act requirements, emergency vehicles, medical requests and other preferential loading categories?
Ability to reduce the number of conflict points between traffic modes (safety of people walking, rolling or driving)	<ul style="list-style-type: none"> • Does the alternative reduce conflicts between people walking, biking, rolling and driving at the intersection of the terminal and Fautleroy Way SW? • Does the alternative reduce or eliminate conflicts between people walking, biking, rolling and driving across the trestle during ferry loading and offloading? • Does the alternative minimize conflicts between people driving on Fautleroy Way SW and vehicles exiting the ferry terminal onto Fautleroy Way SW?
Ability to meet operational requirements (186 vehicles on the dock and/or in upland holding, access and maneuverability for an Issaquah Class vessel and connection to a minor arterial)	<ul style="list-style-type: none"> • All alternatives provide a combined on-dock and upland holding (on Fautleroy Way) of 186 vehicles. • All alternatives connect to Fautleroy Way SW, which is classified as a minor arterial. • Does the alternative provide enough access and maneuverability for Issaquah Class vessels?
Ability to keep current sailing schedule (number of peak departures and crossing times)	Refer to “Ability to improve operational efficiency”
Ability to enhance multimodal connections, connect to transit and/or allow for growth in walk-ons, people biking and vanpools	<ul style="list-style-type: none"> • What distance does the alternative provide for people to walk, bike and roll from Fautleroy Way SW onto the ferry? • Does the alternative improve connections for people biking, walking or rolling? • Does the alternative improve connections to transit (intersection improvements and/or crosswalks to provide safer, easier access to and from transit)?
Ability to avoid changes to parks and recreational areas (Section 4(f), Section 6(f),	<ul style="list-style-type: none"> • What encroachment will the alternative have on Cove Park (potential Section 4(f)) during construction?

Screening Criteria	Performance Factors
Recreation and Conservation Office -funded projects)	<ul style="list-style-type: none"> • What permanent encroachment will the alternative have on Cove Park? • What encroachment will the alternative have on Captain’s Park (potential Section 4(f)) during construction? • What permanent encroachment will the alternative have on Captain’s Park?
Requires changes to traffic circulation on local streets in ferry terminal area	Does the alternative require changes to access or circulation patterns on local streets?
Project cost (design, planning, right of way, risk and construction) alignment with funding	<ul style="list-style-type: none"> • What is the alternative’s estimated program cost compared to available funding? • What is the alternative’s estimated cost of temporary facilities and operational needs during construction to maintain ferry service?
Alignment with current project schedule	What is the timeline to construct the alternative?
Project feasibility—amount of additional right of way needed beyond existing terminal footprint (for expanded footprint, utilities or construction)	What additional permanent right of way does the alternative require?
Permitting and coordination (level of coordination with external partners, permitting complexity and tribal coordination)	<ul style="list-style-type: none"> • What potential cultural resource impacts does the alternative pose? • How does the alternative impact treaty fishing rights based on early engagement with tribes and their feedback on potential treaty fishing impacts? • How much does the alternative increase overwater coverage? • What is the alternative’s required environmental mitigation cost? • How much does the alternative impact and/or provide opportunities to restore macroalgae and eelgrass?
Policy risk	Based on existing policies, does the alternative present risk for substantial project delay?

3.1.3.2 Level 3 Alternatives

Table 6 summarizes the Level 3 alternatives.

Table 6. Level 3 Alternatives

Level 3 Alternative	Summary	Description
A	Similar dock size and maintain existing terminal berthing structures	Level 3 Alternative A would replace the dock at a similar size as the current dock and maintain the existing wing walls and dolphins. The trestle would be 18 feet wider and about 8 feet shorter than the current dock. The wider dock would provide dedicated lanes for people biking and driving motorcycles and wider and safer lanes for all passengers. This configuration would also provide space for a large truck to turn onto the dock. This alternative would hold 76 vehicles, fewer than the existing dock, which holds 84 vehicles. Alternative A would not change the scour hole caused by propeller wash at the end of the trestle.
A-1	Similar dock size and new terminal berthing structures	Level 3 Alternative A-1 would replace the dock using current design standards and build new wing walls and dolphins. The trestle would be 18 feet wider and about 41 feet longer than the current dock. The wider dock would provide dedicated lanes for people biking and driving motorcycles and wider and safer lanes for all passengers. This configuration would also provide space for a large truck to turn onto the dock. This alternative would hold 84 vehicles on the dock, the same capacity as the current dock. Alternative A-1 may slightly change the scour hole caused by propeller wash at the end of the trestle.
A-2	Similar dock size and new terminal berthing structures with <i>Good to Go!</i> and advance ticketing	Level 3 Alternative A-2 would include the same layout and features of A-1 but adds <i>Good to Go!</i> and advance ticketing. Like A-1, this alternative would replace the dock using current design standards and build new wing walls and dolphins. The trestle would be 18 feet wider and about 41 feet longer than the current dock, offering dedicated lanes for people biking and driving motorcycles, wider and safer lanes for all passengers, and space for a large truck to turn onto the dock. It would maintain the current dock’s capacity of 84 vehicles and may slightly alter the scour hole caused by propeller wash at the end of the trestle.
A-3	Similar dock size and new terminal berthing structures with advance ticketing	Level 3 Alternative A-3 would include the same layout and features of A-1 but adds advance ticketing. Like A-1, this alternative would replace the dock using current design standards and build new wing walls and dolphins. The trestle would be 18 feet wider and about 41 feet longer than the current dock, offering dedicated lanes for people biking and driving motorcycles, wider and safer lanes for all passengers, and space for a large truck to turn onto the dock. It would maintain the current dock’s capacity of 84 vehicles and may slightly alter the scour hole caused by propeller wash at the end of the trestle.
B	Longer, larger dock	Level 3 Alternative B would build a longer and slightly wider (18-foot) dock that would provide more space for large trucks to turn onto the dock. Lengthening the dock by 240 feet would move the ferry slip to deeper water, which may allow eelgrass and macroalgae to regrow in and around the scour hole. Moving the ferry slip to deeper water also would help prevent ferries from creating a new scour hole. This alternative would hold 124 vehicles or one full Issaquah Class ferry.

Level 3 Alternative	Summary	Description
B-1	Longer, larger dock with extra holding lane	For Level 3 Alternative B-1, the dock would be the same length as Alternative B (240 feet) and 27 feet wider than the current dock. This alternative would add one more holding lane on the north side of the dock while minimizing impacts to Cove Park and environmentally sensitive areas closer to shore. This alternative would hold 155 vehicles on the dock.
B-2	Longer, larger dock with the addition of two shorter holding lanes	Level 3 Alternative B-2 would be 250 feet longer and 36 feet wider than the current dock, adding two shorter holding lanes for priority vehicles, motorcycles and bicycles. To minimize impacts to environmentally sensitive areas and Cove Park, this tapered dock design would be narrower near the shoreline or 10 feet wider than the current dock. To accommodate the two new lanes, the ferry slip would shift to the south. This alternative would hold 155 vehicles on the dock.
B-3	Longer, larger dock with two shorter holding lanes	Level 3 Alternative B-3 would be slightly shorter than Alternative B-2 and would include one less holding lane. This alternative would be 226 feet longer than the current dock. The rest of the design features would be the same as Alternative B-2, including widening the dock to build two shorter holding lanes for priority vehicles, motorcycles and bicycles. The dock would be narrower near the shoreline to minimize impacts to environmentally sensitive areas and Cove Park. To accommodate the two new lanes, the ferry slip would shift to the south. This alternative would hold 124 vehicles on the dock.
C	Longer, larger dock with extra full-length holding lane and two shorter holding lanes	Level 3 Alternative C would add a full-length holding lane on the north side of the dock. This alternative would be 240 feet longer and 45 feet wider (over deeper water) than the current dock. To minimize impacts to Cove Park and environmentally sensitive areas, the dock would be narrower near the shoreline (18 feet wider than the current dock) and include two shorter holding lanes for priority vehicles, motorcycles and bicycles. This alternative would hold 186 vehicles (approximately one and a half times the capacity of a 124-car Issaquah Class ferry) on the dock and remove the vehicle queue on Fauntleroy Way SW.

3.1.3.3 Additional Project Elements

During Level 3 screening WSF considered project elements that may improve operational efficiency and safety. WSF decided to proceed with improvements to the configuration and control of the terminal intersection with Fauntleroy Way SW to make it easier and safer for vehicles and pedestrians and to improve operational efficiency. This intersection work has independent utility and will be progressed separately, regardless of the alternative recommended for advancement into NEPA and SEPA environmental review and ahead of construction of the project (the subject of this PEL study), as it would also provide benefits now and through construction of any future planned project.

WSF also considered other operational elements that will not be advancing as part of the terminal and trestle replacement project; however, the alternative recommended for advancement will not preclude these elements so that WSF can consider their implementation in the future. These potential future operational elements include:

- Implementing *Good To Go!* or requirements for increased use of WSF's Wave2Go advance ticketing options to reduce vehicle processing time and improve customer experience
- Incorporating overhead loading for passengers to safely walk and roll onto the ferry, providing an accessible path that could improve operational efficiency by allowing vehicles and passengers to load and unload at the same time
- Constructing a permanent second slip

3.1.3.4 Level 3 Screening Results

Table 7 provides the Level 3 screening results scorecard and the following summarizes the evaluation of the Level 3 alternatives:

- Level 3 Alternatives A, A-1, A-2 and A-3, the similar-sized dock options, would provide no or minimal benefit to operational efficiency, even with *Good To Go!* and Wave2Go. These alternatives would not perform better than the other alternatives for the environmental performance factors because they would not improve the scour hole caused by propellor wash at the end of the dock. Additional details on the assessment of operational efficiency by alternative are provided in the *Level 3 Alternatives Screening Summary*, included in Appendix D.
- Level 3 Alternatives B and B-3, two of the longer dock options, would improve operational efficiency and minimize environmental impacts. These alternatives would move the ferry slip to deeper water, allowing greater potential for restoring eelgrass and macroalgae around the dock.
- Level 3 Alternatives B-1 and B-2, the other two longer dock options, would provide the greatest improvement in operational efficiency, performing slightly better than Alternatives B, B-3 and C. Similar to Alternatives B-1 and B-2, these alternatives would move the ferry slip to deeper water, but overall, they score lower in environmental related performance ratings because they would require a bigger increase in overwater structure.
- Level 3 Alternative C, the largest dock option, would bring the greatest increase in overwater coverage and impacts to eelgrass and macroalgae, requiring the most complex permitting and environmental mitigation. The additional holding space may not provide more operational efficiency than Alternatives B, B-1, B-2 and B-3.

Based on the Level 3 screening results, WSF recommended advancing a project envelope based on Level 3 Alternatives B and B-3, which would accommodate an on-dock holding capacity of 124 to 155 vehicles. This project envelope would improve operational efficiency and minimize environmental impacts, including avoiding impacts to Cove Park. WSF will refine the final footprint during NEPA and SEPA environmental review.

Table 7. Level 3 Screening Results Scorecard

Table 7. Level 3 Screening Results Scorecard

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Table 7. Level 3 Screening Results Scorecard

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Table 7. Level 3 Screening Results Scorecard

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4. Recommended Alternative

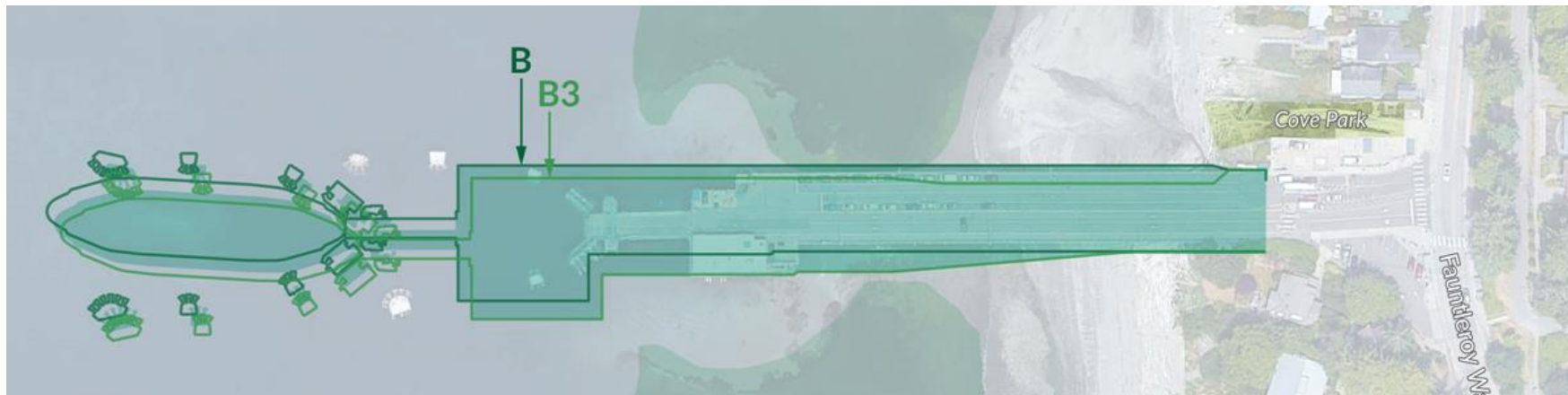
This section summarizes the final recommendation for the alternative to be advanced to NEPA and SEPA environmental review and advisory group feedback on the recommendation.

Based on the Level 3 screening results, WSF recommends advancing a project envelope based on Level 3 Alternatives B and B-3, holding between 124 and 155 vehicles, to NEPA and SEPA environmental review (Figure 11). Community input also informed WSF's decision to recommend advancing this project envelope, which represent the longer, narrow dock options. This recommendation would improve operational efficiency and minimize environmental impacts, including impacts to Cove Park. Moving the ferry slip to deeper water also would reduce propellor wash in sensitive nearshore areas, allowing greater potential for restoring eelgrass and macroalgae around the dock.

Section Overview

- Final recommendation for an alternative to advance to NEPA and SEPA environmental review
- Advisory group feedback on the alternative recommended for advancement

Figure 11. Final Study Recommendation – Project Envelope Based on Level 3 Alternatives B and B-3



5. Environmental Resource Considerations

This section describes a planning level assessment of resources based on a review of available information and site observations. Environmental resource categories presented in this section were based on WSF’s review of the study area and input from the CAG, TAG and tribes. The assessment uses the No Build Alternative as a point of comparison for the environmental changes of the Level 3 alternatives; the No Build Alternative represents existing conditions (e.g., the existing dock, related infrastructure and maintenance). WSF used the information related to environmental impacts presented in this section to inform the Level 3 screening (see Section 3.1.3). Appendix F provides additional details, including a planning level assessment of potential effects on environmental resources caused by the Level 3 alternatives. Table 8 provides a summary of the potential environmental impacts and benefits of a project envelope based on Level 3 Alternatives B and B-3, recommended for advancement into NEPA and SEPA environmental review.

Section Overview

- Existing conditions described by environmental disciplines used in alternatives screening
- Next step for further study during NEPA and SEPA

Table 8. Potential Environmental Impacts

Environmental Resource	Potential Impacts
Fish, Wildlife and Vegetation	The alternative recommended for advancement may temporarily impact fish and wildlife during construction due to construction equipment use and activities. The alternative recommended for advancement would result in additional overwater structure compared to the No Build Alternative and may impact eelgrass because of the increased size and shading. However, relocating the dock and berthing structures into deeper, unvegetated waters (Zone 3),* would eliminate propeller wash-associated erosion and sediment transport, potentially allowing for eelgrass recolonization within the existing scour hole and areas not covered by the replacement dock. Replacing the existing creosote-treated piles with fewer steel piles would reduce toxic inputs and obstructions to the natural flow of Fauntleroy Creek into Fauntleroy Cove, providing more space for fish to travel to and from Fauntleroy Creek. With the smallest overwater structure footprint in Zone 2 and creosote pile removal, the alternative recommended for advancement would minimize impacts on fish, wildlife and vegetation, potentially reducing mitigation costs.
Wetlands and Other Waters of the United States	The alternative recommended for advancement would result in the least increase to the terminal’s in-water footprint compared to the No Build Alternative within Zone 1, resulting in the least potential for indirect impacts to freshwater wetlands and waters. Project construction would include in-water work in Fauntleroy Cove, including around the mouth of Fauntleroy Creek. The project would change the terminal’s in-water footprint and reduce the density of piles supporting the dock.

Environmental Resource	Potential Impacts
Water Quality and Stormwater	The alternative recommended for advancement would impact water quality during construction, but WSF would control sediment mobilization, turbidity and accidental spills using best practices and pollution prevention measures. Long-term, removing creosote-treated timber piles would improve water and sediment quality in Fauntleroy Cove and the Puget Sound. Although the larger facility would include more impervious surfaces, updated stormwater management facilities would reduce pollutant loadings to Fauntleroy Cove and the Puget Sound.
Hazardous Materials	The alternative recommended for advancement would involve the use of potentially hazardous materials, such as petroleum, oils and lubricants, during construction and operational activities. Additionally, the alternative recommended for advancement would include the removal of the creosote-treated timber piles and timber associated with the existing dock. Long-term operations would generate solid waste similar to the waste generated by current operations, some of which may be hazardous and it will be managed according to WSDOT’s Environmental Manual (WSDOT 2024 or as revised), Section 447.03(4) and applicable federal, state and local laws, regulations and standards.
Historic, Cultural and Archaeological Resources	The alternative recommended for advancement would involve intertidal and upland construction that could potentially affect cultural resources but would not impact historic buildings. The construction footprint is not yet determined and no construction would be expected on the east side of Fauntleroy Way SW. Long-term operations are not anticipated to affect cultural resources.
Parks and Recreation (including properties potentially protected under Section 4(f) of the Department of Transportation Act and Section 6(f) of the Land and Water Conservation Fund Act)	The alternative recommended for advancement would impact surrounding parks like Cove Park, Captain’s Park, Fauntleroy Creek Ravine and Southwest Brace Point Drive during terminal construction, affecting the recreational experience due to large construction equipment. Most construction will occur over water, with minimal physical occupation of the parks. Access to the beach and points north of the trestle via Cove Park will be maintained, with intermittent closures for safety. The alternative recommended for advancement would result in a higher dock with fewer, larger, steel piles that would alter views and experiences at Cove Park and Captain’s Park but allow more daylight under the dock. Access to Cove Park via Barton Street SW would change and the dock would be wider, but wider portions would start at the beach tide zone to minimize impacts. The alternative recommended for advancement has been designed to avoid affecting Cove Park to the extent possible.
Air Quality and Coastal Resiliency	Construction equipment used to construct the alternative recommended for advancement would temporarily worsen air quality due to increased dust and exhaust from gasoline and diesel engines. Earthwork and demolition are primary dust sources and longer construction durations would generate more pollution. However, in the long-term, improved loading and unloading efficiency is expected to reduce queuing and idling on Fauntleroy Way SW, potentially lowering localized air pollution. The alternative recommended for advancement will be designed to be resilient against sea level rise and storm impacts, in line with WSF guidance.

Environmental Resource	Potential Impacts
Noise	The alternative recommended for advancement would produce noise from construction vehicles and engine-powered equipment, including stationary equipment like pumps, generators and compressors, as well as intermittent noise from trucks, cranes and backhoes. Pile installation, using vibratory and impact driving, would generate more noise than pile removal. Post-construction, ferry terminal activities would likely generate noise similar to current levels.
Land Use	The alternative recommended for advancement would temporarily affect land uses near the ferry terminal during construction due to worker, vehicle and equipment movement, as well as large construction activities. The parking area next to the dock may be used for contractor staging or storage. Construction may require traffic rerouting, causing delays and restricted mobility, temporarily affecting surrounding land use. While adjacent land uses would not be displaced, there would be increased traffic, noise and noticeable changes to the terminal area. Recreational experiences of park users and surrounding residential areas would also be impacted during active construction. The alternative recommended for advancement would replace the existing terminal with a modernized facility, with no anticipated changes to zoning or land use, though some permanent right of way acquisition is expected.
Visual Quality and Aesthetics	The alternative recommended for advancement would create temporary visual impacts during construction, with large equipment and increased truck traffic visible from viewpoints. The alternative recommended for advancement would increase the terminal's footprint and raise the dock, increasing the facility's visual prominence in the surrounding landscape. While this may introduce a moderate change in visual character, WSF anticipates that the design of the new passenger building, walkway and landscaping could improve overall visual quality.

* = Refer to Section 10.1.2.2 for detailed information on Habitat Zones 1 through 3.

5.1 Fish, Wildlife and Vegetation

This section assesses how the proposed project may affect fish, wildlife and vegetation resources within the PEL study area, including potential impacts on federally listed threatened and endangered species and designated critical habitat. It considers potential fish and wildlife habitat disruptions, including impacts on breeding, feeding and migration patterns. This analysis also considers the cumulative impacts of the project and other activities in the area and supports the identification of potential mitigation strategies to minimize project impacts to fish, wildlife and vegetation communities.

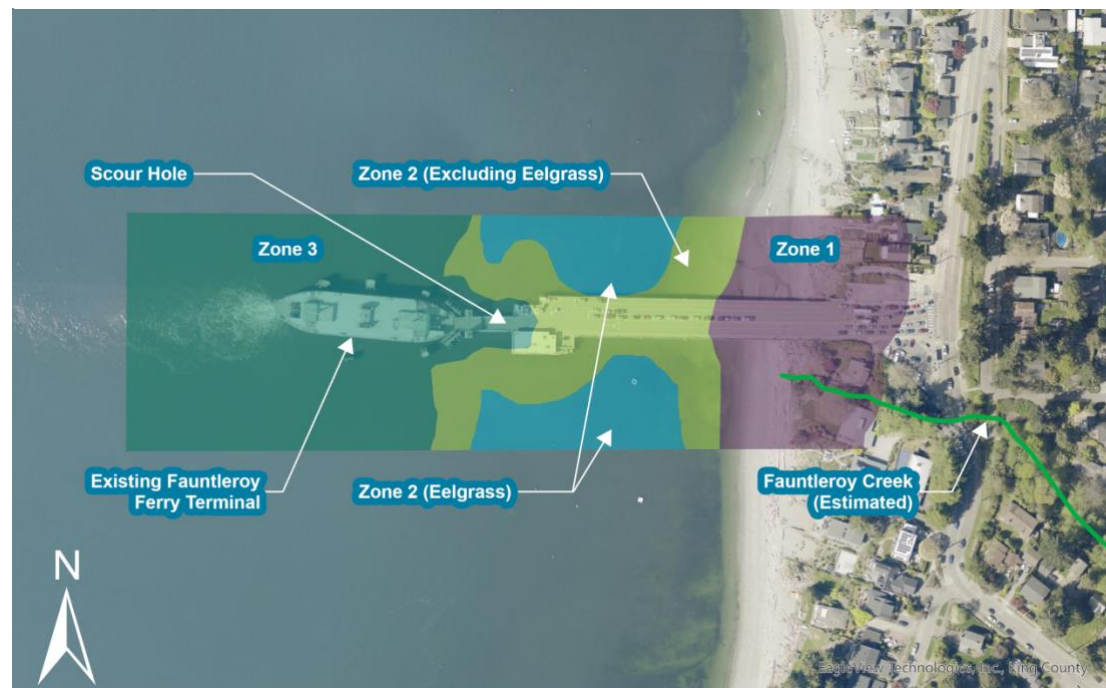
5.1.1 Data Sources and Collection Methods

WSF evaluated fish, wildlife and vegetation within 500 feet of the Fauntleroy ferry terminal. WSF characterized existing conditions and developed a preliminary, planning-level assessment of potential project impacts within this study area. WSF reviewed publicly available data from various sources to characterize existing fish, wildlife and vegetation resources within the study area, including Federal Emergency Management Agency (FEMA) (no date [n.d.]-a), n.d.-b), King County (n.d.-a, n.d.-b), NOAA (n.d.-a, n.d.-c, n.d.-d), U.S. Environmental Protection Agency (EPA) (2010), USFWS (n.d.-a, n.d.-b), U.S. Geological Survey (n.d.), WDFW (n.d.-a, n.d.-b), Ecology (n.d.-e), Washington State Recreation and Conservation Office (n.d.) and Fauntleroy Creek Watershed Council. For a full description of the methodology used to evaluate existing conditions, see Appendix F.

WSF separated the area surrounding the Fauntleroy ferry terminal and the Level 3 alternatives into three habitat zones (Zones 1 through 3) based on NOAA's nearshore habitat descriptions and site-specific conditions (Figure 12) (Ehinger et al. 2023), defined as follows:

- Zone 1 – Upper shoreline and riparian area. Zone 1 is composed of the upper shore and riparian area, which extends up to approximately 300 feet landward from the highest astronomical tide to the extent of residential-associated vegetation and five feet landward of the MLLW line. Zone 1 includes Fauntleroy Creek, a perennial stream (riverine, upper perennial, unconsolidated bottom, permanently flooded), an adjacent fringing upland riparian community and landscape community associated with the residential development.

Figure 12. Habitat Zones 1, 2 and 3



- Zone 2 – Shallow marine zone. Zone 2 constitutes the productive intertidal and nearshore marine environments of Fauntleroy Cove, extending from the terminus of Zone 1 to the -16 foot MLLW bathymetric elevation. It includes two subcomponents:
 - Zone 2 – Eelgrass (areas containing eelgrass vegetative cover, as mapped in a 2023 eelgrass survey) (Confluence 2023)
 - Zone 2 – (Excluding Eelgrass) (Confluence 2023)
- Zone 3 – Deeper marine zone. Zone 3 is the deeper marine resource that extends seaward from the boundary of Zone 2.

5.1.2 Existing Conditions

The fish, wildlife and vegetation study area is situated in Fauntleroy Cove, south of Lincoln Park, within the biologically diverse Puget Lowland Ecoregion (EPA 2010). The Puget Lowland Ecoregion, fed by freshwater runoff from surrounding watersheds, supports nearshore habitats such as beaches, tide flats and salt marshes. Existing conditions within each of the previously defined habitat zones in the study area are outlined below.

- Zone 1 includes Fauntleroy Creek, which discharges into Fauntleroy Cove south of the ferry terminal, connecting the freshwater and estuarine habitats. The upper shoreline is identified as an estuarine marine wetland (estuarine, intertidal, unconsolidated shore, regularly/irregularly flooded) and is the upper limit for forage fish spawning. Although no Endangered Species Act Section 7 (ESA)-listed salmonids are present in Fauntleroy Creek, anadromous fish (i.e., hatchery coho salmon) inhabit the creek. The Fauntleroy Creek Watershed Council, in partnership with local schools, released 2,309 coho fry into Fauntleroy Creek in 2025 (Pickens 2025). The released coho smolts migrate to salt water mid-March to May, with spawners returning to Fauntleroy Cove in September and entering the lower creek mid-October to mid-November.

Zone 1 includes both freshwater and marine resources, supporting a moderate level of ecological functions such as habitat provision, erosion control and nutrient transport.

- Zone 2 includes intertidal and nearshore areas of Fauntleroy Cove, supporting a diverse array of invertebrates, fish, eelgrass and macroalgae. Eelgrass beds within Zone 2 (Eelgrass) support the survival and growth of various fish and wildlife species, by providing habitat structure for spawning, foraging and rearing and serve as a transitional area for anadromous salmon migrating from freshwater to marine environments. As this zone provides habitat for an abundance of invertebrate and fish species, it also supports a prey base for predators (including marine mammals). However, historic and ongoing ferry terminal and ferry operations in Zone 2 reduce habitat quality through overwater shading and propeller wash, inhibiting the growth of aquatic vegetation in localized areas (Figure 12, Zone 2 [Excluding Eelgrass]).

Overall, Zone 2 provides high ecological function as its shallow waters and eelgrass structure are essential in supporting biodiversity, food web dynamics and transitional habitat for anadromous fish. Despite localized impacts from ferry infrastructure, the eelgrass and macroalgae within Zone 2 remain essential for species survival.

Within Zones 1 and 2, the density and placement of the piles supporting the trestle influence Fauntleroy Creek’s flow path into Fauntleroy Cove, trapping debris and driftwood that may affect anadromous fish access into the creek for spawning. Additionally, untreated surface and stormwater from the ferry and vehicle holding area introduce contaminants associated with roadway materials, oils, tires and other transportation-associated pollutants into Fauntleroy Cove. These materials are a source of water quality degradation and negatively impact species survival and reproduction.

- Zone 3 includes deeper marine waters where limited light penetration restricts aquatic vegetation establishment. Stable deepwater sands provide refugia and feeding habitat for forage fish and anadromous salmon, which use this zone to feed on pelagic invertebrates and migration (USGS 2020; WDNR n.d.-a). At the end of the existing trestle, ferry propulsion activity during docking and exiting the facility has led to long-term substrate erosion and transport, creating a distinct scour hole (Figure 12). This disturbance has eliminated historic eelgrass in this area and prevents eelgrass and macroalgae regrowth.

Zone 3 provides moderate ecological function, supporting deepwater feeding and migration for anadromous fish species. However, ongoing ferry-related erosion limits habitat stability and vegetation restoration, reducing its overall ecological value.

5.1.2.1 Fish and Wildlife Habitat

Several federally protected species and habitats have the potential to occur within the study area. Based on the availability of suitable habitat, Table 9 identifies which species and habitats are expected to be present or absent (NOAA n.d.-a; USFWS n.d.-a).

Table 9. Potentially Present ESA-listed Species and Critical Habitat

Species	ESA Listing Status	Designated Critical Habitat in Study Area	Suitable Habitat Potentially Present within the Study Area?
North American wolverine (<i>Gulo gulo luscus</i>)	Threatened	Not applicable	No
Marbled murrelet (<i>Brachyramphus marmoratus</i>)	Threatened	Not applicable	Yes
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	Threatened	Not applicable	No

Species	ESA Listing Status	Designated Critical Habitat in Study Area	Suitable Habitat Potentially Present within the Study Area?
Streaked horned lark (<i>Eremophila alpestris strigata</i>)	Threatened	Not applicable	No
Bull trout (<i>Salvelinus confluentus</i>)	Threatened	Yes	Yes
Monarch butterfly (<i>Danaus plexippus</i>)	Candidate	No	No
Northwestern pond turtle (<i>Actinemys marmorata</i>)	Threatened	No	No
Bocaccio/rockfish (<i>Sebastes paucispinis</i> ; Puget Sound/Georgia Basin DPS)	Endangered	Yes	Yes
Yelloweye rockfish (<i>Sebastes ruberrimus</i> ; Puget Sound/Georgia Basin DPS)	Threatened	Yes	Yes
Green sturgeon (<i>Acipenser medirostris</i> ; Southern DPS)	Threatened	No	No
Chinook salmon (<i>Oncorhynchus tshawytscha</i> ; Puget Sound ESU)	Threatened	Yes	Yes
Steelhead trout (<i>O. mykiss</i> ; Puget Sound DPS)	Threatened	No	Yes
Killer whale (<i>Orcinus orca</i> ; Southern Resident DPS)	Endangered	Yes	Yes
Humpback whale (<i>Megaptera novaeangliae</i> ; Central America DPS, Mexico DPS, Hawaii DPS)	Endangered	No	Yes
Sunflower Sea Star (<i>Pycnopodia helianthoides</i>)	Proposed Threatened	No	Yes

DPS = distinct population segment
ESU = evolutionarily significant unit

5.1.2.2 Vegetation

Vegetation within the study area includes riparian and disturbed shoreline communities within Zone 1 and macroalgae and eelgrass beds within Zone 2 (Eelgrass). Terrestrial vegetation within the study area (Zone 1) consists of fragmented forest and riparian canopy within an urban residential setting. Native trees, shrubs and grasses (including invasive species and noxious weeds) are present alongside landscaped areas. No rare plants or high-quality ecosystems are mapped within the study area (WDNR 2022).

In Zone 2 (Eelgrass), patchy eelgrass and kelp communities are mapped within Fauntleroy Cove, which provide cover for larval and juvenile rockfish, salmonids and prey species for listed fish and marine mammals. A June 2023 video survey confirmed the presence

of eelgrass beds north and south of the terminal at depths between -6 feet and -16 feet MLLW (Figure 12) (Confluence 2023). No eelgrass was observed west of the terminal or within the scour hole in Zone 3 and no kelp was observed during the survey (Confluence 2023).

5.1.3 Potential Impacts

To evaluate the potential impacts of the Level 3 alternatives on fish, wildlife and vegetation (as compared to existing conditions), WSF analyzed the following components of the Level 3 alternatives overall and within Zones 1 through 3:

- Area of overwater structure footprint (calculated in square feet [SF]), including changes to the overwater structure footprint by alternative, relative to existing conditions
- Area of in-water structure footprint (i.e., piers, dolphins and wing walls; SF), including change in the in-water structure footprint by alternative, relative to existing conditions
- The number of proposed piles by alternative, compared to existing conditions

5.1.3.1 Construction Impacts

Construction phasing, methods and impacts would be similar across the Level 3 alternatives. Temporary work platforms and specialized marine work barges utilized during construction would likely support construction activities and create a temporary and variable increase to overwater coverage impacts. The key differences between the Level 3 alternatives' construction impacts would be related to the number of piles necessary to support the trestle design and the plumes of turbid water associated with pile removal.

Construction would generate noise, notably underwater noise, during activities like pile installation. Alternatives with more piles would require more time to construct and lead to greater construction and temporary impacts in all habitat zones. Underwater noise mitigation and water quality monitoring during construction would reduce harm to marine habitat.

5.1.3.2 Permanent Impacts

Direct Permanent Impacts

WSF analyzed potential direct permanent impacts of the Level 3 alternatives on biological resources. A high-level summary of the permanent direct impacts by habitat zone is provided in Table 10, with further detail available in Appendix F, Section 3.1.2.2. The analysis of potential direct permanent impacts included:

- A comparison of the Level 3 alternatives' overwater structures compared to existing conditions. The Level 3 alternatives from least to greatest increase in the overwater footprint compared to existing conditions are A, A-1 to A-3, B-3, B, B-1, B-2 and C.
- A comparison of the Level 3 alternatives' overwater and in-water footprints by habitat zone
- A comparison of the Level 3 alternative's number of piles by habitat zone

Table 10. Comparison of Permanent Direct Impacts of Level 3 Alternatives

Level 3 Alternative	Zone 1	Zone 2 (Excluding Eelgrass)	Zone 2 (Eelgrass)	Zone 3
Smallest Over and In-water Structure Footprint *	B-3	B	B-3	A
Greatest Over and In-water Structure Footprint *	B-1	C	B-1	C
Smallest Replacement Pile Count	B-3 (32 piles)	B (50 piles)	B-3 (0 piles)	A (14 piles)
Greatest Replacement Pile Count	B-1 and C (41 piles)	C (80 piles)	B-1 (5 piles)	B (157 piles)

* = Compared to existing conditions

Indirect Permanent Impacts

Level 3 Alternatives B, B-1, B-2, B-3 and C would result in generally beneficial indirect permanent impacts to biological resources. These include improved water quality, potential eelgrass reestablishment and more natural hydrologic connectivity between Fauntleroy Creek and Fauntleroy Cove. These beneficial indirect permanent impacts would primarily be related to relocating the dock and berthing structures into deeper, unvegetated waters within Zone 3, which would reduce propeller wash and sediment disturbance and support eelgrass recolonization in Zone 2 (Excluding Eelgrass). In contrast, Alternatives A, A-1, A-2 and A-3 would be oriented closer to shore, maintaining the existing scour hole, sediment transport and shading effects in Zones 2 (Excluding Eelgrass) and 3. These conditions would continue to inhibit eelgrass recolonization in those areas.

All Level 3 alternatives would remove approximately 430 creosote-treated timber piles that support the existing trestle, replacing them with considerably fewer steel piles. Removing the chemically treated piles and replacing them with fewer, steel piles would reduce the leaching of toxic chemicals known to cause mortality and developmental issues in aquatic species and improve water quality in Fauntleroy Creek and Fauntleroy Cove (WDNR n.d.-b). Additionally, fewer replacement piles in Zone 1 would reduce obstructions to the natural flow of Fauntleroy Creek into the cove. The number of proposed steel replacement piles varies by Level 3 alternative, as detailed in Table 10.

5.1.3.3 Next Steps

WSF will conduct further detailed analysis of fish, wildlife and vegetation as part of the NEPA and SEPA processes, including preparing a biological assessment in accordance with the ESA and consulting with the National Marine Fisheries Service, USFWS, WDFW and tribes about project impacts to fish, wildlife and vegetation. As part of NEPA and SEPA environmental review, WSF will conduct a detailed analysis of wetlands and waterbodies impacts, including formal delineation of potential wetlands, Fauntleroy Creek and floodplains, as well as a detailed assessment of impacts to wetlands, waterbodies and floodplains. In addition, WSF will meet the requirements of Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act and WDFW's Hydraulic Project Approval and other applicable federal, state and local requirements.

Federal, state and local regulations require mitigation sequencing to be applied when impacts to regulated environmental resources are proposed. Mitigation sequencing involves the following (33 CFR 332; Chapter 197-11-WAC):

1. Avoiding an impact altogether by not taking certain actions
2. Minimizing an impact by limiting the degree or magnitude of the action

3. Rectifying an impact through repairing, rehabilitating or restoring the affected environment
4. Reducing or eliminating an impact over time through preservation and maintenance operations
5. Compensating for an impact by replacing, enhancing or providing substitute resources or environments

WSF incorporated mitigation sequencing into the development and screening of the Level 3 alternatives. As part of the PEL study, a planning-level assessment was conducted to compare mitigation concepts and associated costs. Key mitigation cost drivers include:

- Total impacts: Alternatives with larger over and in-water footprints (i.e., permanent direct impacts) would be expected to incur higher mitigation costs. Minimizing these impacts would help reduce mitigation costs.
- Implementation complexity: Impacts to Zone 2 (Eelgrass) would be particularly costly to mitigate due to the specialized techniques, monitoring and adaptive management required for successful eelgrass mitigation.
- Reduced disturbance to Zone 2: Alternatives that would relocate berthing structures to deeper waters in Zone 3 would significantly reduce propeller wash and sediment disruption in Zone 2, creating opportunities for eelgrass reestablishment and improved habitat conditions.
- Off-site mitigation: Greater mitigation obligations (related to increased overwater coverage) may require off-site mitigation, which is generally more expensive as compared to on-site mitigation.

Based on the criteria named above (total overwater/in-water impacts and Zone 2 impacts), WSF identified the following general conclusions related to the potential relative mitigation costs across the Level 3 alternatives, as summarized in Table 11.

Table 11. Relative Potential Mitigation Costs Across Level 3 Alternatives

Lower Relative Potential Mitigation Cost Alternatives	Higher Relative Potential Comparative Mitigation Cost Alternatives
Level 3 Alternative A: With the smallest overwater structure footprint, Alternative A is likely to reduce total mitigation cost but does not remove ongoing impacts from propeller wash in Zone 2.	Level 3 Alternative C: With the greatest total overwater structure footprint and the greatest overwater impacts to Zone 2 (Excluding Eelgrass), Alternative C is likely to increase the required mitigation cost compared to other alternatives.
Level 3 Alternative B: With the smallest overwater structure footprint in Zone 2 (Excluding Eelgrass), Alternative B is likely to require less eelgrass mitigation resulting in a lower cost compared to other alternatives.	Level 3 Alternatives B-1 and C: These alternatives have the greatest over and in-water structure footprints within Zone 2 (Eelgrass), which is likely to increase the required mitigation cost compared to other alternatives.
Level 3 Alternative B-3: With the smallest overwater structure footprint in Zone 2 (Eelgrass), Alternative B-3 is likely to require less eelgrass mitigation compared to other alternatives, resulting in a lower mitigation cost compared to other alternatives.	

5.2 Wetlands and Waterbodies

Wetlands, streams and floodplains within the study area were identified and evaluated to understand their functions and values. This assessment helped project designers avoid and minimize potential impacts on these sensitive areas. These aquatic resources are regulated by Waters of the United States by USACE, as floodplains/flood zones by FEMA, as waters of the state by Ecology, as fish and aquatic habitats by WDFW, as state-owned aquatic lands by the WDNR and by counties and local municipalities through their municipal codes.

5.2.1 Data Sources and Collection Methods

WSF reviewed public resource information to gather background information on the study area (that is, within 500 feet of the existing Fauntleroy ferry terminal) in regard to wetlands, streams and floodplains. These sources included the National Wetlands Inventory (NWI) (USFWS n.d.-b), National Hydrography Dataset (USGS n.d.) and FEMA Flood Insurance Rate Maps (FEMA n.d.-a).

5.2.2 Existing Conditions

5.2.2.1 Wetlands

The NWI (USFWS n.d.-b) maps the following wetland types within 500 feet of the existing Fauntleroy ferry terminal. These wetlands have not been delineated and their location is based on NWI data. The Cowardin classification of each NWI-identified aquatic resource type is provided below (Cowardin et al. 1979), while the classification system described by *A Marine and Estuarine Habitat Classification System for Washington State* is used for estuarine and marine wetlands as the Cowardin classification system has several limitations in marine and estuarine environments (Dethier 1990):

- Marine, subtidal (Fauntleroy Cove, navigable waterway)
- Estuarine, intertidal
- Riverine (riverine, upper perennial, unconsolidated bottom, permanently flooded) habitat associated with Fauntleroy Creek

5.2.2.2 Fauntleroy Cove

Fauntleroy Cove is designated in the National Hydrography Dataset as a traditional navigable water and is within the Puget Sound Vessel Traffic Service Area (NOAA n.d.-b), is a Shoreline of Statewide Significance and has a shoreline environmental designation of Conservancy, Recreation and Urban Residential (City of Seattle n.d.-c).

5.2.2.3 Fauntleroy Creek

Based on data from the National Hydrography Dataset, Fauntleroy Creek is mapped as a perennial natural stream feature that intersects the study area (USGS n.d.). U.S. Geological Survey (USGS) did not delineate Fauntleroy Creek. The creek flows west through a small riparian corridor south of the ferry terminal and turns north under the terminal and discharges into the cove north of the terminal. According to the aforementioned publicly available resources, Fauntleroy Creek is a Type F (known to be used by fish, or meets the physical criteria to be potentially used by fish) perennial, anadromous stream discharging into Fauntleroy Cove near the Fauntleroy ferry terminal (WDNR n.d.).

Fauntleroy Creek drains an approximately 149-acre area (watershed) to the east and south of the Fauntleroy ferry terminal. The creek flows through a culvert under Fauntleroy Way SW that daylight south of the ferry terminal and then flows into Puget Sound. The creek

channel has been affected by driftwood and debris that accumulates around the ferry trestle and it currently flows under the trestle and empties into Puget Sound north of the trestle.

5.2.2.4 Floodplain

A portion of the study area is within the FEMA Special Flood Hazard Area (100-year flood zone) (FEMA n.d.-a) associated with Fautleroy Cove. No evidence of shoreline armoring is present at the cove stretch adjacent to the ferry.

5.2.3 Potential Impacts

To evaluate the potential impacts of the Level 3 alternatives to wetlands and waterbodies, WSF used the aforementioned approach assessing impacts to habitat zones (as outlined in Section 5.1.2). However, in terms of assessing impacts to wetlands and waterbodies within Zone 2, WSF did not need to subdivide this zone into “Eelgrass” and “Excluding Eelgrass” components (as it was in Section 10.1.2); therefore, WSF looked at impacts within Zone 2 holistically in this section.

The non-delineated NWI-mapped wetlands and other waterbodies discussed in Section 5.1.2 can be broadly grouped by potential presence within each habitat zone (Table 12). This enables a comparison between the Level 3 alternatives in terms of their permanent impacts to potential wetlands and waterbodies.

Table 12. Presence of Non-delineated Wetland and Waterbodies in Zones 1 to 3

Non-delineated Wetlands and Waterbodies	Zone 1	Zone 2	Zone 3
Marine, subtidal (Fautleroy Cove, navigable waterway)		X	X
Estuarine, intertidal	X	X	
Riverine habitat abutting Fautleroy Creek	X		
Freshwater forested/shrub wetland	Not applicable ^[a]	Not applicable ^[a]	Not applicable ^[a]
Fautleroy Creek	X		
Floodplain	X	X	X

^[a] The NWI-mapped fresh water forest/shrub wetland is outside of Zones 1 through 3.

Note: The boundaries of the wetlands in Table 12 have not been delineated in the field; their positioning within the habitat zones is based off of mapping from NWI and may change when formally delineated.

5.2.3.1 Construction Impacts

Temporary work platforms and spud anchor work barges would support construction activities and would create a temporary and variable increase to overwater coverage impacts, including shading. Overall, the key driver in terms of differences between construction impacts of the Level 3 alternatives is the number of piles necessary to support the trestle design. Alternatives with a longer trestle design and, therefore, more piles would likely require more time to construct and incur greater construction/temporary impacts to Zones 1 through 3. Upland construction activities are likely to use existing, developed areas and not directly affect wetlands or waterbodies.

5.2.3.2 Permanent Impacts

Focusing on wetlands and other waterbodies, Zones 1 and 2 are most relevant (due to the presence of Fauntleroy Creek and estuarine and marine wetlands within these habitat zones). A comparison between the Level 3 alternatives and existing conditions in terms of in-water and overwater coverage is summarized below.

- Zone 1: Alternative B-3 would result in the smallest increases to the overwater and in-water structure footprints. Alternative B-1 would result in the greatest increase in the overwater structure footprint and Alternative C-1 results in the greatest increase to the in-water structure footprint.
- Zone 2 (Excluding Eelgrass): Alternative B would result in the smallest increase to the overwater structure footprint and in-water structure footprint. In contrast, Alternative C-1 would result in the greatest increase to the overwater structure footprint and in-water structure footprint.
- Within Zone 2 (Eelgrass), Alternative B-3 would result in the smallest increase to the over and in-water structure footprints. Alternative B-1 would result in the greatest increase to the over and in-water structure footprints.

The number and positioning of piles proposed under each Level 3 alternative could influence the flow path between Fauntleroy Cove and Fauntleroy Creek, potentially affecting aquatic species migration, access and vegetation (i.e., eelgrass) due to changes in the creek's alignment and freshwater discharge into Fauntleroy Cove. While the number of piles within Zone 1 varies by alternative, their general positioning remains consistent across alternatives. Under the existing conditions, Zone 1 contains 153 piles, which exceeds the number of proposed piles under any Level 3 alternative. The proposed number of piles within Zone 1, listed from least to greatest, is as follows:

1. Alternative B-3 would result in 32 piles
2. Alternatives A-1, A-2 and A-3 and B result in 36 piles
3. Alternative A and B-2 would result in 37 piles
4. Alternatives B-1 and C-1 would result in 41 piles

5.2.4 Next Steps

As part of NEPA and SEPA environmental review, WSF will conduct a detailed analysis of wetlands, Fauntleroy Creek and associated floodplain, including a formal delineation of wetlands and Fauntleroy Creek's ordinary high-water mark within the study area and detailed assessment of impacts to wetlands and waters to inform NEPA and SEPA environmental review. In addition, the requirements of Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act and WDFW's Hydraulic Project Approval and other applicable federal, state and local requirements will be met.

5.3 Water Quality and Stormwater

This section provides information about waterbodies that exceed state pollution standards and total maximum daily load (TMDL). The TMDL is the estimated amount of a pollutant a waterbody can handle without exceeding the state water quality standards. The Clean Water Act requires a TMDL study to specify how much WSF must reduce pollution.

5.3.1 Data Sources and Collection Methods

The study area for water quality and stormwater includes the areas within 0.5-mile of the existing Fauntleroy ferry terminal area. WSF used Clean Water Act Section 303(d) listings, Ecology's Environmental Information Management System and other data from publicly available resources to characterize existing water quality within the study area.

5.3.2 Existing Conditions

The water quality and stormwater study area is part of the Central Puget Sound Basin (Water Resource Inventory Area 9) in the Duwamish and Green Watershed (Hydrologic Unit Code 17110019). There are no wellhead protection zones in the study area.

Ecology identifies Fauntleroy Cove as water quality impaired for one parameter: bacteria (Ecology n.d.-b). Ecology established a TMDL for bacteria in Fauntleroy Creek in an approved water quality improvement project (Ecology 2007, 2008). Several sources of pollutants may affect Fauntleroy Cove water quality, including:

- Stormwater discharge from existing pollutant-generating impervious surfaces including the existing ferry terminal, Fauntleroy Way SW and other surrounding roadways and developed areas
- King County Wastewater Treatment Division's combined sewer overflow at Barton Pump Station

Before upgrades in 2015, the combined sewer overflow averaged four overflows per year, discharging 4 million gallons of untreated runoff into Fauntleroy Cove. Approximately 430 creosote-treated timber piles and more than 1,000 tons of associated creosote-treated timbers support the existing terminal. Creosote pilings can degrade aquatic habitat by leaching toxic chemicals including polycyclic aromatic hydrocarbons (PAHs) into the surrounding water and sediment. Benthic organisms may be exposed to PAHs through their diet and direct contact with contaminated water and sediments. PAHs may bioaccumulate in aquatic invertebrates and other species.

5.3.3 Potential Impacts

5.3.3.1 Construction Impacts

Temporary work platforms and work barges would support construction activities and would create a temporary and variable increase to overwater coverage impacts, including shading. Overall, the key driver in terms of differences between construction impacts of the

Level 3 alternatives is the number of piles necessary to support the trestle design. Alternatives with a longer trestle design and, therefore, more piles would likely require more time to construct and incur greater construction/temporary impacts to Zones 1 through 3. Upland construction activities are likely to use existing, developed areas and not directly affect wetlands or waterbodies.

5.3.3.2 Permanent Impacts

The long-term impacts of all Level 3 alternatives would be beneficial for water quality. All alternatives would remove creosote-treated timber piles and timber, providing a benefit to water and sediment quality in Fautleroy Cove. WSF would replace creosote-treated timber piles with substantially fewer steel piles. The larger Level 3 Alternatives B, B-1, B-2 and C would have more pollution-generating impervious surface than the smaller Level 3 A alternatives, requiring larger stormwater management facilities. Stormwater is currently untreated from the existing trestle. The new trestle will provide stormwater treatment facilities following the WSF Terminal Design Manual (WSDOT 2016) and regulatory requirements. These updated facilities will provide water quality treatment for stormwater generated on the trestle, reducing pollutant loadings to Fautleroy Cove from the terminal.

5.3.4 Next Steps

During NEPA and SEPA environmental review, WSF will conduct an analysis of current pollutant loadings to Fautleroy Cove from the ferry terminal and surrounding area and provide designs addressing current and future pollutant loadings from trestle drainage. WSF will develop measures to avoid, minimize and mitigate water quality impacts during construction and operation of the project, including a comprehensive strategy for implementation during construction and operation. WSF will consult with resource agencies during stormwater treatment plan development.

5.4 Hazardous Materials

Before advancing the project, FHWA must consider the potential environmental impacts of the proposed action, including those impacts related to hazardous materials. This process involves evaluating the impacts of hazardous materials on the environment and public health. If the FHWA, in consultation with relevant agencies, determines that the project would have hazardous materials impacts, WSF must implement measures to mitigate those impacts.

5.4.1 Data Sources and Collection Methods

WSF used a study area of 0.5-mile from the existing Fauntleroy ferry terminal area to obtain current information on the presence of sites potentially contaminated with hazardous materials. WSF used Ecology’s What’s in My Neighborhood: Toxics Cleanup database and mapping tool to find and determine the presence of documented contaminated sites in the study area (Ecology n.d.-f).

5.4.2 Existing Conditions

WSF found two sites in the study area with hazardous material contamination (Table 13). Both sites are considered to have a low risk of contamination to the project based on their status and distance from the project location. As previously mentioned, the existing dock includes creosote-treated timber piles and timber. Other hazardous substances, such as asbestos, may be present in the existing terminal facilities.

Table 13. Study Area Sites Contaminated with Hazardous Materials

Site Name (Contaminated Site Identification Number)	Site Address	Distance and Direction	Potential Issues and/or Status
45th Avenue SW Apartments (10264)	9212 45th Avenue SW, Seattle	0.20 miles/southeast	Cleanup started
Seattle City Light Fauntleroy Substation (12767)	4520 SW Brace Point Drive, Seattle	0.22 miles/south-southeast	Cleanup complete

Notes: The study area is within the Tacoma Smelter Plume. Based on Ecology’s Dirt Alert database, the expected arsenic concentration in soil is between 20 and 40 parts per million in the study area (Ecology n.d.-c).

5.4.3 Potential Impacts

5.4.3.1 Construction Impacts

Construction activities for all Level 3 alternatives involve the use of potentially hazardous materials, such as petroleum, oils and lubricants and generate solid waste, some of which may be hazardous. WSF will manage hazardous materials during construction according to WSDOT’s (2023) Environmental Manual, Section 447.03(4) and applicable federal, state and local laws, regulations and standards, including BMPs to prevent, control and clean up any hazardous material releases during construction. WSF will also

carefully manage removal of creosote-treated piles and timbers and construction debris to minimize the risk of creosote contamination to surrounding water and sediment and dispose of creosote-treated timber at a certified facility and following applicable requirements.

5.4.3.2 Permanent Impacts

WSF will construct the project to meet current WSF operational standards with respect to storage, transport and management of hazardous materials.

5.4.4 Next Steps

WSF will conduct further evaluation of hazardous materials as part of NEPA and SEPA environmental review. Based on the outcome of the PEL study, WSF will refine the project design to include instructions for how hazardous materials will be transported, managed and disposed of as part of construction and operations. If WSF proposes temporary or permanent right of way acquisition, it will conduct a Level 1 environmental site assessment following WSDOT guidance.

5.5 Historic, Cultural and Archaeological Resources

WSF must comply with Section 106 of the National Historic Preservation Act (NHPA) to support federal permits and approvals needed for the project. Section 106 of the NHPA requires that, before beginning any undertaking, a federal agency (in this instance the FHWA) must identify an area of potential effects and account for the impacts of the undertaking on historic properties. Historic properties include both archaeological and built environment resources that are determined to be eligible for listing on the National Register of Historic Places (NRHP). If FHWA, in consultation with the State Historic Preservation Officer, decides that the project would adversely affect historic properties, WSF must mitigate those impacts. Section 106 consultation does not occur during the PEL study but will be initiated during the NEPA review phase. During the PEL study, a preliminary review of cultural resources information was conducted to support an assessment of alternatives.

5.5.1 Data Sources and Collection Methods

The study area for cultural resources, including both archaeological and built environment resources, is a 0.25-mile area surrounding the Fauntleroy ferry terminal. WSF used the Washington Department of Archaeology and Historic Preservation (DAHP) Washington Information System for Architectural and Archaeological Records Data (WISAARD) database extensively during the records search for

this study. WSF identified previously recorded archaeological and built environment resources aged 50 years or older and cultural resources studies within the study area through a search of the WISAARD database. The WISAARD database cultural resources predictive model classifies the study area as “Very High Risk” for cultural resources. This preliminary review will serve as a foundation for future consideration under provisions of Section 106 of the NHPA.

5.5.2 Existing Conditions

Previously recorded cultural resources within the study area include one recorded archaeological resource and 157 built environmental resources, with two built environment resources that have had determinations of eligibility. The archaeological site has not been determined eligible for listing on the NRHP. The two built environment resources that have had eligibility determinations are not considered eligible for listing on the NRHP.

A total of eight cultural resources studies have been completed in the study area, according to the WISAARD database records search (Table 14). Of the eight studies, only one identified and documented a cultural resource. The cultural resource is a built environment resource consisting of a single-family residence known as the Leckenby House, which has yet to be considered for listing on the NRHP by the DAHP. There are no ethnographic place names present within the study area.

Table 14. Previous Cultural Studies within the Study Area

National Archaeological Database ID	Author	Title	Year	Cultural Resources
1339804	Hartmann, Glenn D.	A Cultural Resources Survey of the Washington State Department of Transportation’s Fautleroy Ferry Terminal Improvement Project, Seattle	1998	None
1339807	Robbins, Jeffrey R.	Fautleroy Creek Culvert Replacement Project Seattle, Cultural Resource Assessment	1998	None
1339812	Dugas, Amy E.	Cultural Resource Monitoring of the Fautleroy Creek Culvert Replacement Project	1998	None
1346977	Luttrell, Charles T.	Cultural Resources Investigations for the Fautleroy Watershed Council’s Lower Fautleroy Creek Enhancement Project	2006	One built environment structure

National Archaeological Database ID	Author	Title	Year	Cultural Resources
1348327	Kiers, Roger	Archaeological Monitoring of Emergency Construction Excavations for the Barton Force Main	2006	None
1684568	Hoyt, Bryan	Archaeological Monitoring of Barton Street Pump Station Geotechnical Borings	2008	None
1687011	Rinck, Brandy	Re: Results of Archaeological Monitoring for the Seattle City Light Pole 154 Replacement	2012	None
1687412	Lockwood, Chris	Archaeological Monitoring of Barton Street Pump Station Upgrade	2015	None

5.5.3 Potential Impacts

5.5.3.1 Construction Impacts

All Level 3 alternatives will involve shoreline and upland construction that could potentially affect cultural resources but would not affect built environment cultural resources such as historic buildings. The extent of the construction impacts depends on the final construction footprint; alternatives with larger intertidal and upland construction footprint in comparison to others would be more likely to affect cultural resources. WSF does not anticipate construction on the east side of Fauntleroy Way SW for any Level 3 alternative. WSF will conduct a cultural resources survey and consult with DAHP and tribes to identify whether cultural resources are present to avoid and minimize potential impacts as part of the NEPA and SEPA environmental reviews.

5.5.3.2 Permanent Impacts

WSF anticipates that cultural resources would only be potentially affected during construction, so no permanent impacts to cultural resources are anticipated for the Level 3 alternatives.

5.5.4 Next Steps

WSF and FHWA will identify the area of potential effects for the project and conduct a cultural resources survey of both archaeology and built environment resources. This work will be completed as part of the NEPA and SEPA environmental reviews, in consultation

with DAHP, affected tribes and other consulting parties and according to the requirements of NEPA, SEPA and Section 106 of the NHPA. If WSF identifies historic properties and those properties are adversely affected by the undertaking, WSF will consult with the parties listed above to resolve adverse impacts, likely through the development of an agreement document, such as a programmatic agreement or memorandum of agreement.

5.6 Parks and Recreation

In the NEPA phase, WSF must comply with Section 4(f) of the of the U.S. Department of Transportation Act of 1966 to support federal permits and approvals needed for the project. Section 4(f) specifically mandates that the projects must avoid impacting publicly owned parks, recreation areas and wildlife and waterfowl refuges unless there is no feasible and prudent avoidance alternative. If the FHWA, in consultation with agencies with jurisdiction, determines that the project would use Section 4(f) properties, WSF must implement measures to minimize harm and mitigate those impacts. Parks that may potentially be protected under Section 4(f) were assessed to support the PEL study.

5.6.1 Data Sources and Collection Methods

The study area for parks and recreational resources is 0.5-mile from the existing Fauntleroy ferry terminal area. Data sources included the Southwest Seattle Historical Society (n.d.-b), City of Seattle’s 2035 Comprehensive Plan future land use map (City of Seattle n.d.-c), Shoreline Street Ends App (City of Seattle n.d.-e) and SPR parks information (City of Seattle n.d.-a).

5.6.2 Existing Conditions

There are four parks within the study area: Fauntleroy Creek Ravine, Fauntleroy Park, Kilbourne Park and Lincoln Park (SPR n.d.). Two “shoreline street ends,” an SDOT designation, are in the study area for public use and enjoyment: Cove Park (immediately north of the ferry terminal) and Southwest Brace Point Drive (City of Seattle n.d.-b). In addition, the area directly across Fauntleroy Way SW from the ferry terminal entrance is a small, informal open space known as Captain’s Park. The PEL Study did not include an evaluation of whether the parks in the study area are protected under Section 4(f) of the Department of Transportation Act of 1966.

5.6.2.1 Captain’s Park

Captain’s Park is a small, open space at the top of the embankment across from the ferry terminal between Fauntleroy Way SW and 47th Avenue SW, between Southwest Henderson and Southwest Director Streets. It is located within the City of Seattle right of way and SPR has not designated it as a park. According to the Southwest Seattle Historical Society, Morey Skaret established the area that overlooks Fauntleroy Cove and the ferry terminal “to honor all who have plied the waters including Native Americans who at one time camped at the site.” (Southwest Seattle Historical Society n.d.). The area is elevated above Fauntleroy Way SW, which provides a view over Fauntleroy Cove and toward Vashon Island and the Olympic Mountains.

5.6.2.2 Cove Park

Cove Park is an approximately 0.3-acre community resource located north of the Fauntleroy ferry terminal next to the Barton Pump Station. The property is zoned Neighborhood Residential and is not formally designated for recreational use in Seattle’s 2017 Parks and Open Space Plan. SDOT considers Cove Park to be one of its “shoreline street ends” for public use and enjoyment to provide visual and physical access to the waterfront. SPR manages the park. In 2015, the King County Wastewater Treatment Division revitalized Cove Park as part of its upgrade to the Barton Pump Station.

The park offers passive recreational opportunities, such as walking and scenic enjoyment. The park has waterfront access via a paved path and views of the Puget Sound, Olympic Mountains and Vashon Island from atop the adjacent Barton Pump Station. Artwork at the park includes a statue, engraved stones, pavement designs and a gate honoring the community.

5.6.2.3 Fauntleroy Creek Ravine

SPR owns and maintains Fauntleroy Creek Ravine, a 0.2-acre natural area located southeast of the Barton Street SW intersection and the Fauntleroy ferry terminal. Fauntleroy Creek Ravine includes a viewpoint overlooking the Fauntleroy Creek fish ladder, public art and views of the ferry dock.

5.6.2.4 Fauntleroy Park

SPR owns and manages Fauntleroy Park, an approximately 33-acre park located approximately 0.25 miles east of the ferry terminal. The park is a densely wooded patch of forest with steep slopes and a 1.5-mile network of trails and paths for walking, hiking and dog walking.

5.6.2.5 Kilbourne Park

Kilbourne Park is a 0.6-acre green space beside Fauntleroy Elementary School, about 0.2 miles from the ferry terminal, which connects the larger Fauntleroy Park with the Fauntleroy Creek Ravine.

5.6.2.6 Lincoln Park

SPR owns and manages Lincoln Park, located approximately 0.25 miles north of the ferry terminal. The park is an approximately 135-acre facility located along Fauntleroy Way SW, between Southwest Fontanelle Street to the north and Southwest Trenton Street to the south. Fauntleroy Way SW provides vehicular access to Lincoln Park. Facilities and amenities include 4.6 miles of walking paths, 3.9 miles of bike trails, five picnic shelters, playfields, an outdoor heated saltwater pool and bathhouse and approximately 300 feet of shoreline access. Presently, ferry traffic queuing on Fauntleroy Way SW can back up to Lincoln Park, preventing vehicular access to and from the park.

5.6.2.7 Southwest Brace Point Drive

Southwest Brace Point Drive is an improved narrow road that leads to a sandy beach and views of Fauntleroy Cove. It is 0.2 miles south of the Fauntleroy ferry terminal. SDOT considers the property to be one of its “shoreline street ends” (SPR 2017). Water access is only available during high tide as the public area only extends 75 feet past the concrete curb at the street end.

5.6.3 Potential Impacts

5.6.3.1 Construction Impacts

The construction of all Level 3 alternatives would affect nearby parks, including Cove Park, Captain’s Park, Fauntleroy Creek Ravine and Southwest Brace Point Drive, primarily due to the transport and operation of large construction equipment which may disrupt the recreational experience of park users. Most construction will occur over water and physical occupation of parks is unlikely, though activities may occur near Cove Park on the north side of the trestle. WSF does not expect the construction of any of the alternatives to encroach on Captain’s Park and anticipates maintaining access to the beach and areas north of the trestle via Cove Park, with intermittent closures when necessary for public safety.

5.6.3.2 Permanent Impacts

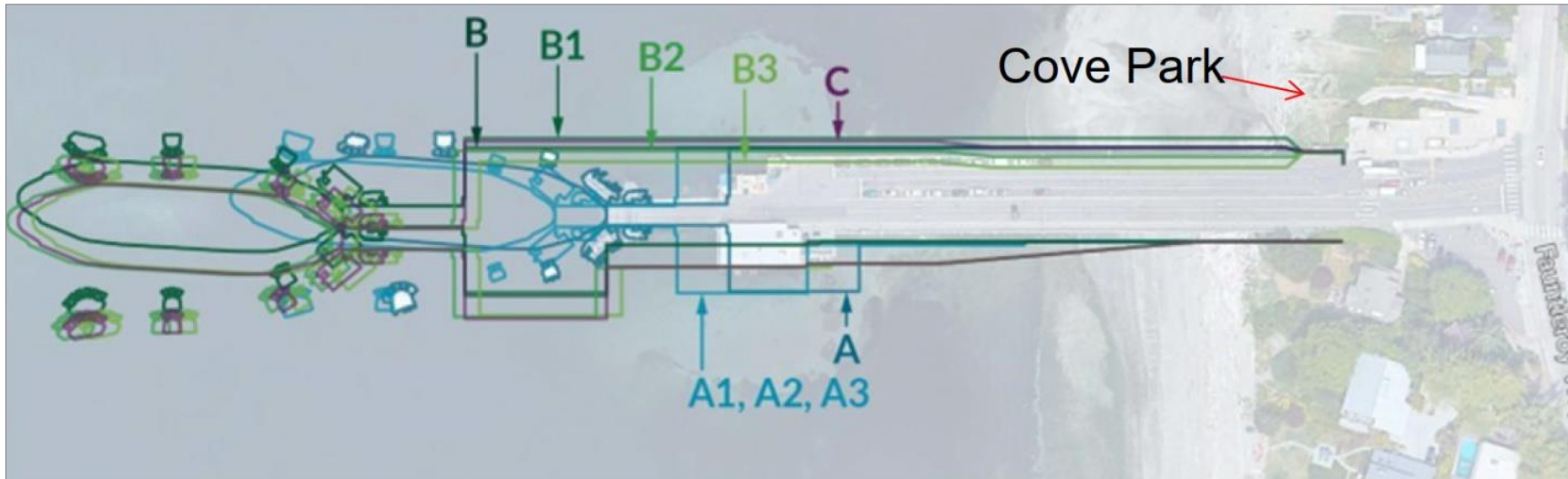
All Level 3 alternatives would be built higher than the existing trestle, with fewer but larger-diameter piles and deeper structural components. These changes would alter views and user experiences at Cove Park and Captain’s Park, making the dock more visually prominent from nearby vantage points. However, the higher and more open design could allow more daylight under the dock, improving physical and visual openness. All Level 3 alternatives would also be wider than the existing dock (Figure 13), extending northward into the upper shoreline/riparian zone (Table 15). WSF designed wider portions of the dock to begin farther offshore and to the south, to avoid impacts to Cove Park to the extent practicable. Post-construction, access via the Barton Street SW path would remain unaltered. Alternatives that reduce queuing on Fauntleroy Way SW, in comparison to the existing dock, may help reduce access conflicts at Lincoln Park.

Table 15. Northern Widening of Level 3 Alternatives Compared to Existing Dock

Alternative	Widening (in linear feet) to North Seaward of Tide Zone	Additional Area (SF) North of Existing Dock in Upper Shoreline/Riparian Zone
A, A-1, A-2 and A-3	13	2,080
B	13	2,080
B-1	22	3,625
B-2	5	593
B-3	0	73 ^[a]
C	13	2,193

^[a] Alternative B-3’s trestle configuration immediately in front of the bulkhead structure is wider than the existing trestle.

Figure 13. Location of Level 3 Alternatives Relative to Cove Park



5.6.4 Next Steps

As part of NEPA and SEPA environmental review, WSF will analyze the temporary footprint of facilities and activities and the duration of construction. WSF will use this information to estimate construction-related effects on Cove Park and Captain’s Park. WSF will continue to engage with the public regarding the development and evaluation of construction plans. Section 4(f) of the Department of Transportation Act of 1966 stipulates that FHWA and other Department of Transportation agencies cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges or public and private historic sites unless there is no feasible and prudent alternative to the use of the land and the action includes all possible planning to minimize harm to the property resulting from use. WSF will also evaluate whether and how park property is protected under Section 4(f) as part of NEPA and SEPA environmental review.

5.7 Air Quality and Coastal Resiliency

Understanding how actions affect air quality and coastal resiliency supports informed decision-making and promotes resilient development.

5.7.1 Data Sources and Collection Methods

The study area for air quality and coastal resiliency includes all areas within 0.5-mile of the existing Fauntleroy ferry terminal and any other roadway links impacted by the project alternatives. Data sources include data from Ecology (Ecology n.d.-a) and project traffic analysis information.

5.7.2 Existing Conditions

Air quality in the study area is within the EPA thresholds set for the six common air pollutants in National Ambient Air Quality Standards: carbon monoxide, lead, nitrogen dioxide, ozone, particle pollution and sulfur dioxide.

Vehicle traffic on Fauntleroy Way SW and ferry operations are local sources of air pollution. Comments received in public engagement have shown concerns about air pollution caused by vehicle idling while traffic is queued on Fauntleroy Way SW, waiting to board the ferry.

5.7.3 Potential Impacts

5.7.3.1 Construction Impacts

Construction equipment and vehicles powered by gasoline and diesel would temporarily adversely impact air quality by generating dust and exhaust, especially during earthwork and demolition activities. Level 3 alternatives with longer construction durations would generate more air pollutants over the course of construction.

5.7.3.2 Permanent Impacts

WSF expects alternatives that improve the efficiency of loading and unloading to reduce queuing and idling on Fauntleroy Way SW, potentially lowering localized air pollution compared to the existing condition. The design of all Level 3 alternatives is consistent with existing WSF guidance on sea level rise to provide resilience against anticipated tidal and storm impacts.

5.7.4 Next Steps

WSF will conduct a detailed assessment of air quality as part of the NEPA and SEPA environmental review.

5.8 Noise

Under NEPA analysis, potential noise impacts related to the proposed project on the surrounding environment are evaluated by identifying noise-sensitive areas, measuring existing noise levels, predicting future noise levels and assessing potential impacts on human health and the environment. If noise impacts would occur, the analysis also would evaluate the effectiveness of noise mitigation measures to minimize adverse impacts.

5.8.1 Data Sources and Collection Methods

The noise study area is 0.5-mile from the existing Fauntleroy ferry terminal area. According to the WSDOT 2020 Traffic Noise Policy and Procedures and 23 CFR Part 772, the noise study area encompasses all receptors within the project limits that could be affected by traffic noise from the project (WSDOT 2020). WSF undertook a detailed reconnaissance of the project vicinity to identify all noise-sensitive properties.

5.8.2 Existing Conditions

Potential noise-sensitive receptors or locations where occupants are more susceptible to the adverse effects of noise pollution in the vicinity of the existing terminal include residential areas, parks, schools, a library, restaurants and other businesses. Existing noise sources in the vicinity of the Fauntleroy ferry terminal include transportation, such as vehicles on Fauntleroy Way SW, ferries and terminal operations.

5.8.3 Potential Impacts

5.8.3.1 Construction Impacts

WSF will use construction vehicles and engine-powered equipment for all Level 3 alternatives and this equipment would produce noise. Some noise would come from stationary equipment that may run constantly for extended periods of time (for example, pumps, generators and compressors) and other construction noise would occur intermittently during active construction activities such as from trucks, cranes or backhoes. WSF will use vibratory extraction to remove piles and use a combination of vibratory and impact driving to install piles, depending on substrate conditions and structural requirements. Generally, pile installation would generate more noise due to pile-driving activity than pile removal. As noted in Section 5.1.3, temporary in-water and terrestrial noise associated with construction activities may disturb terrestrial and marine fish and wildlife species.

5.8.3.2 Permanent Impacts

Following construction, activities at the ferry terminal would likely generate noise similar to the existing condition for all Level 3 alternatives.

5.8.4 Next Steps

WSF will conduct a detailed noise analysis during NEPA and SEPA environmental reviews to determine noise impacts on specific receptors and land uses consistent with WSF and FHWA requirements.

5.9 Land Use

Understanding how the project might affect current and future land use within the study area includes the consideration of factors such as zoning, land ownership, existing land uses and planned developments. This analysis assesses potential conflicts with local land use plans, compatibility with surrounding land uses and impacts on community resources to confirm that the project aligns with land use policies and discloses effects on land uses. As the project moves from the planning phase to design, the study area may be revised and the analysis refined as needed.

5.9.1 Data Sources and Collection Methods

The land use study area is 0.5-mile from the Fauntleroy ferry terminal area, which includes where the majority of the project elements would take place and where the project is most likely to have impacts to existing land uses. WSF gathered existing land use information from various sources, including existing documents, maps, aerial photographs and GIS data. WSF obtained land use and zoning designations and critical areas regulations from the City of Seattle and King County.

5.9.2 Existing Conditions

Existing land use in the vicinity of the ferry terminal includes residential areas, parks and pockets of commercial/mixed-use areas. The terminal is in the Fauntleroy neighborhood of West Seattle, bordered by Lincoln Park to the north, the Roxhill and White Center neighborhoods to the east and the Arbor Heights neighborhood to the south. According to the West Seattle Chamber of Commerce, Fauntleroy is one of seven business districts in West Seattle providing professional services and restaurants. The Seattle 2035

Comprehensive Plan future land use map (City of Seattle n.d.-c) identifies similar land uses in the future within the study area, including (see Figure 14):

- City-owned parks and open space land including Lincoln Park, Fauntleroy Creek Ravine, Fauntleroy Park and Kilbourne Park
- Neighborhood residential (NR) zones 1 through 3, which support low density residential development with variable lot sizes
- Lowrise (LR) zones 1 and 2 with mandatory housing affordability (M) requirements, which allow for more intensive residential development (including townhouses, rowhouses and small apartment buildings)
- A small Neighborhood commercial (NC1-40) zone which allows for mixed-use development up to 40 feet in height, combining residential units with small-scale commercial uses (like cafes or shops), also subject to mandatory housing affordability requirements

The 2040 LRP (WSDOT 2019) recognizes the need for critical preservation work to upgrade the Fauntleroy ferry terminal. The Washington State Legislature initially programmed construction funding for the Fauntleroy terminal in the 2025 to 2027 biennium.

5.9.3 Potential Impacts

5.9.3.1 Construction Impacts

All Level 3 alternatives would temporarily affect nearby existing land uses due to construction activity, including worker, vehicle and equipment movement to and from the site, noise and traffic

Figure 14. Existing Zoning Designations and Parks within PEL Study Area



disruptions. The parking area south of the dock and west of Fauntleroy Way SW may be used for contractor staging or storage. Construction may require traffic rerouting traffic resulting in delays and restricted mobility during the transport of equipment and materials to and from the construction site. While no adjacent land uses would be displaced during construction, increased noise and traffic would alter the terminal area and affect nearby parks and residential areas.

5.9.3.2 Permanent Impacts

All Level 3 alternatives would replace the existing Fauntleroy ferry terminal with a modernized facility. WSF does not anticipate any changes to existing zoning or land use, though some permanent right of way acquisition would be required for all Level 3 alternatives (see Appendix F for greater detail).

5.9.4 Next Steps

As part of the NEPA and SEPA environmental reviews, WSF will determine the project's consistency with applicable land use goals and policies, consult with the City of Seattle's Department of Planning and Development regarding consistency with the Seattle Shoreline Master Program and study the impacts of construction on ferry service.

5.10 Visual Quality and Aesthetics

An analysis of a project's impacts on visual quality and aesthetics evaluates how the project might visually affect the surrounding environment. This process includes considering the project's impacts on scenic resources, historic properties and the overall visual experience of people who view the landscape.

5.10.1 Data Sources and Collection Methods

The visual study area is 0.5- miles from the existing Fauntleroy ferry terminal. Existing conditions were documented using a combination of GIS mapping, photographs, field investigations and review of preliminary engineering plans.

5.10.2 Existing Conditions

Viewpoints from within the study area include Lincoln Park, Cove Park, Captain's Park, Brace Point Street End and nearby residential areas. Viewers include area residents, users of park facilities, pedestrians, transit users and motorists passing through the area. Key components of the visual environment include Fauntleroy Cove and views across Puget Sound of Vashon Island and the Olympic mountains, as well as the existing ferry terminal and other development around the shoreline.

5.10.3 Potential Impacts

5.10.3.1 Construction Impacts

Construction of all Level 3 alternatives would create temporary visual impacts during construction. Large construction equipment and construction activities such as increased truck traffic would be visible from viewpoints and by the viewers mentioned in Section 5.10.2.

5.10.3.2 Permanent Impacts

All Level 3 alternatives would expand the terminal footprint and be higher than the existing dock. Alternatives A and A-1, A-2 and A-3 would be larger than the existing facility but generally similar in scale and length. Alternatives B, B-1, B-2, B-3 and C would be between 226 and 250 feet longer than the existing dock, making them more visually prominent from nearby viewpoints.

5.10.4 Next Steps

WSF will conduct analysis in accordance with FHWA's visual impact assessment guidelines, including use of visual simulations, during the NEPA and SEPA environmental reviews to determine visual impacts on specific views and viewers for various key observation points.

6. Next Steps and Implementation

This section describes WSF’s process for advancing a project envelope based on Level 3 Alternatives B and B-3 into NEPA and SEPA environmental review, including additional design, analysis and community engagement to evaluate the potential environmental impacts of implementation. A discussion of planned projects within or near the Fauntleroy ferry terminal is provided for context and future coordination during NEPA and SEPA environmental review.

Section Overview

- Anticipated permits from federal, state and local agencies
- Coordination and outreach for NEPA process

6.1 NEPA Analysis and Documentation Recommendation

The planning analyses and decisions presented in this PEL study will be integrated into NEPA and SEPA environmental review in accordance with 23 U.S.C. 168, thereby reducing redundancy between the planning and environmental review stages and resulting in more efficient project delivery. Implementation of the alternative recommended for advancement would have both beneficial and adverse effects on the environment, as described in Table 8. Based on the analysis of existing conditions in the project study area, as well as coordination with the public and resource and permitting agencies and tribes, WSF and FHWA have determined that it is unlikely that the project would have any significant effects that cannot be mitigated. As such, it is recommended that a NEPA EA be completed to fully analyze the effects of the project, identify mitigation, engage the public and inform the decision makers.

6.2 Anticipated Permits

Implementing the alternative recommended for advancement would require permits from federal, state and local agencies. Table 16 describes the anticipated permits, responsible agencies and project activities that trigger permits or approvals. WSF may identify other permitting requirements later in the design process.

Table 16. Anticipated Permits and Approvals

Procedural Requirement, Permit or Approval	Responsible Agency	Trigger
Federal		
NEPA Compliance	FHWA	Requires federal agencies to assess environmental impacts of proposed major federal actions before making decisions.
Clean Water Act Section 404 Permit	USACE	Required for work that discharges dredged and/or fill material into waters of the United States.
Rivers and Harbors Act Section 10 Permit	USACE	Required for construction of structures in or over navigable waters.
ESA Section 7 Consultation	NMFS and USFWS	Required when an action is conducted, funded or authorized by a federal agency that may affect a species listed as threatened or endangered under the Act or any critical habitat designated for such species.
NHPA Section 106 Consultation	DAHP	Requires federal agencies to consider the impacts on historic properties of projects they conduct, assist with, fund, permit, license or approve.
Department of Transportation Act Section 4(f) Compliance	FHWA	Requires that property from publicly owned public parks, recreation areas, wildlife or waterfowl refuges or historic site listed or eligible for listing on the NRHP not be used for transportation purposes unless there is no feasible or prudent alternative.
State and Local		
SEPA	WSF	Requires Washington State agencies to assess the environmental impacts of proposed major federal actions before making decisions.
Clean Water Act Section 401 Water Quality Certification	Ecology	Requires compliance with state water quality standards and verify before federal agencies issue a permit or license to conduct any activity that may result in discharge into Waters of the United States.
Clean Water Act Section 402 National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit	Ecology	Regulates direct discharges from “point sources” to surface waters, including discharges of stormwater runoff from construction sites more than 1 acre in size.

Procedural Requirement, Permit or Approval	Responsible Agency	Trigger
Coastal Zone Management Act Consistency Determination	Ecology	Requires that federal actions that are reasonably likely to affect any land or water use or natural resource of the coastal zone be consistent with enforceable policies of a state's federally approved coastal management program.
Shoreline Management Act Review	Ecology	Requires review of proposed substantial developments within designated shoreline zones (typically within 200 feet upland from the ordinary high-water mark) for consistency with shoreline planning policies and regulations.
Hydraulic Project Approval	WDFW	Requires that hydraulic projects (defined as those projects that will use, divert, obstruct or change the natural flow or bed of any of the salt or fresh waters of the state) be completed in a manner that protects fish and their aquatic habitats.
Aquatic Lands Use Authorization	WDNR	Required for projects taking place on or over state-owned aquatic lands.
Critical Areas Alteration Permit	City of Seattle	<p>Required when a project involves development in or near areas designated as Environmentally Critical Areas. These areas include the following:</p> <ul style="list-style-type: none"> • Landslide-prone areas (including steep slopes) • Peat settlement-prone areas • Liquefaction-prone areas • Abandoned landfills • Flood-prone areas • Wetlands • Riparian corridors • Fish and wildlife habitat

6.3 Mitigation Strategies

WSF proposed preliminary mitigation strategies for each environmental discipline based on the Level 3 alternatives, as reflected in Table 8. During the NEPA and SEPA environmental review, the project team will continue to evaluate ways to mitigate unavoidable environmental impacts, including avoidance, minimization and other mitigation measures. WSF will continue coordination with resource and permitting agencies, tribes and communities to refine mitigation strategies into actionable measures.

The recommended project envelope would impact eelgrass and macroalgae in nearshore waters by increasing overwater coverage compared to the No Build Alternative. This project envelope would also move the berthing structures farther offshore into deeper waters, consequently reducing or eliminating ferry propeller wash effects within Zone 2 (that is, the existing scour hole). The longer dock would eliminate erosion and sediment transport caused by ferry propeller wash, allowing eelgrass and macroalgae to reestablish in areas not covered by the dock. WSF will continue to explore in-place and in-kind mitigation opportunities for these impacts to eelgrass and macroalgae. Because the agencies and tribes are cautious about relying solely on eelgrass reestablishment for mitigation, if reestablishment is proposed as part of the mitigation strategy, a contingency plan for more active mitigation measures would be in place if the eelgrass does not reestablish within the anticipated areas within Zone 2.

Mitigation strategies for impacts on the built environment involve targeted outreach to local communities and property owners, coordination with local jurisdictions on other planned projects and collaboration with project partners to identify compensatory measures if needed (for example, noise barriers and historic resource inventory).

6.4 Coordination During the NEPA Process

WSF will continue engaging the public and agency partners as the project moves into NEPA and SEPA environmental review. WSF will share frequent project updates and hold regular community meetings to hear input on environmental analyses and inform key decisions. WSF will also invite resource agencies and tribes to participate as either Cooperating or Participating agencies during the NEPA and SEPA environmental review.

Other engagement activities, at a minimum, include the following:

- Continue government-to-government consultation with the tribes and initiate consultation under Section 106 of the NHPA regarding cultural resources
- Focus outreach to disadvantaged communities
- Maintain the project website with up-to-date information and project materials
- Hold online and in-person open houses to provide project progress updates to the surrounding communities and gather input
- Hold regular briefings with community organizations representing ferry-served communities and terminal neighbors

- Engage directly with project neighbors to share project progress updates and hear their input on aspects of the project that may directly impact them
- Coordinate with City of Seattle, King County, King County Metro and Sound Transit

6.5 Conceptual Design

The conceptual design WSF developed for the PEL study will be refined during the NEPA process to show the temporary footprint needed during different construction phases, construction staging areas and available right of way. The permanent footprint will show the location of improvements in and around the terminal, including earthwork limits. WSF will also include plan and cross-section views of the improvements. The conceptual design plans will be used as the basis for technical studies in each of the environmental disciplines included in the environmental document.

6.6 Implementation

If approved, WSF intends to build the project in phases to maintain essential ferry service during project construction. Most work is likely to occur in the water because the new terminal would be built in essentially the same location as the existing terminal, there is limited space for contractor staging and laydown.

6.7 Adjacent Planned Projects

The Fauntleroy Ferry Terminal Trestle and Transfer Span Replacement Project aligns with the following planning documents:

- WSF's 2021–2023 Sustainability Action Plan
- Seattle 2035 Comprehensive Plan
- 2040 Long Range Plan, which highlights the need for upgrades to the Fauntleroy ferry terminal

WSF will consider planned projects within or near the project study area during the NEPA phase, which include (but are not limited to) the following:

- Intersection Improvements at Fauntleroy Way SW: WSF is collaborating with the SDOT to improve the terminal intersection at Fauntleroy Way SW. The project aims to enhance safety and efficiency for road users by adding a traffic signal to the intersection. This work will be completed before the Fauntleroy Ferry Terminal Trestle and Transfer Span Replacement Project, with construction anticipated to occur in 2026.
- Fauntleroy Creek Culverts Replacement Program: SPU is replacing two aging culverts that convey Fauntleroy Creek at 45th Avenue SW and California Avenue SW to restore fish passage, improve creek resiliency to higher flows, enhance community connection and provide safer working conditions for SPU maintenance crews (SPU n.d.). The 45th Avenue SW culvert is in the mid-design phase, with construction planned from spring 2026 to spring 2028; the California Avenue SW culvert is currently in the planning and early design phases.
- Stormwater Management Improvements: The City of Seattle plans to upgrade aging stormwater management systems throughout the city, including in the Fauntleroy Creek basin, to reduce flooding and improve water quality. Most of the improvements in the Fauntleroy Creek basin are closed or substantially completed (City of Seattle n.d.-d).
- Fauntleroy Boulevard Project: This project aims to transform Fauntleroy Way SW into a safer, more efficient corridor for all modes of transportation. It includes new sidewalks, bike lanes and landscaping improvements along Fauntleroy Way between 35th Avenue SW and SW Alaska Street (approximately 2.65 miles northeast of the Fauntleroy ferry terminal). This project has been paused since 2018 and remains on pause as a currently unfunded project (City of Seattle n.d.-b). The Fauntleroy Boulevard Project is independent of the project and is unlikely to necessitate coordination during NEPA review.

6.8 NEPA Recommendation

Implementation of the alternative recommended for advancement would have both adverse and beneficial impacts to the environment, as described in Table 8. WSF recommends advancing a project envelope based on Level 3 Alternatives B and B-3, holding between 124 and 155 vehicles, as it would improve operational efficiency and minimize environmental impacts (including avoiding impacts to Cove Park) by moving the ferry slip to deeper water, allowing for the potential restoration of eelgrass and macroalgae around the dock. Based on the analysis of existing conditions in the project study area, the recommended project envelope and coordination with the resource and permitting agencies and tribes, WSF and FHWA have determined that the project is unlikely to result in significant impacts that cannot be mitigated.

A NEPA EA is recommended to fully analyze the impacts of the project, identify mitigation, engage the public and inform decision-makers. The EA process will determine if the project would have significant environmental impacts that cannot be mitigated and whether a Finding of No Significant Impact can be issued or an Environmental Impact Statement is required.

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