

Appendix A

Technical Supplement to the Transportation Discipline Report

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FINAL

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Submitted to:



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Elliott Bay Seawall Project

TECHNICAL SUPPLEMENT TO THE TRANSPORTATION DISCIPLINE REPORT

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FINAL

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The Elliott Bay Seawall Project is a joint effort between the City of Seattle Department of Transportation (SDOT) and the U.S. Army Corps of Engineers. To conduct this project, SDOT contracted with:

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City of Seattle
Technical Supplement to the Transportation Discipline Report

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ACRONYMS, ABBREVIATIONS, AND DEFINITIONS

AWV	Alaskan Way Viaduct
AWVRP	Alaskan Way Viaduct Replacement Project
DEIS	Draft Environmental Impact Statement
EBSP	Elliott Bay Seawall Project
FEIS	Final Environmental Impact Statement
LOS	Level of Service
NEPA	National Environmental Policy Act
SDOT	Seattle Department of Transportation
SEIS	Supplemental Environmental Impact Statement
SEPA	State Environmental Policy Act
USACE	U.S. Army Corps of Engineers
WSDOT	Washington State Department of Transportation

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IMPACT ANALYSIS FOR THE UPDATED PREFERRED ALTERNATIVE

The Supplemental Environmental Impact Statement (SEIS) considers the Elliott Bay Seawall Project (EBSP) construction occurring from June 2014 through the completion of Central Seawall construction in May 2016. It addresses proposed changes to Alternative C, the City of Seattle's Preferred Alternative, including construction sequencing, summer shutdown periods, pier access, and roadway configuration. Since some of these changes may have the potential to result in significant adverse impacts on the transportation system and parking supply, they are evaluated in this document.

The updates proposed to the Preferred Alternative are described in Chapter 2 of the S. The changes related to transportation can be generally summarized as follows:

- Roadway improvements would extend one block farther south to S. Main Street—this will facilitate a more seamless tie-in with the adjacent roadway that is being restored by the Alaskan Way Viaduct Replacement Project.
- EBSP construction may continue through the summers.
- Most waterfront pier businesses on Piers 54 to 57 would close between October 2014 and June 2015. This would reduce the number of temporary access bridges needed during construction in Zone 3.
- The sequence of active construction zones would be different from that assumed in the Final Environmental Impact Statement (FEIS). The FEIS assumed Phase I construction would extend from Virginia Street to Madison Street, and Phase II construction would extend from Madison Street to S. Washington Street. Current plans for Phase I construction would also include Yesler Way to S. Main Street. Since that portion of Alaskan Way would be completed during Phase I, it would not be included in Phase II. However, roughly a half block from Union Street southward would also be included in Phase II.
- A new access route for Colman Dock is proposed. Rather than using a U-turn at Madison Street and entering Colman Dock from the north, the new route would take advantage of additional ferry queuing space on the original Alaskan Way to the south and have all ferry-bound traffic enter Colman Dock from the south. More details are provided in subsequent sections.

This memo begins by describing baseline conditions for the analysis—including a discussion of why the baseline year continues to be 2010 (as it was in the Draft Environmental Impact Statement [DEIS] and FEIS) rather than 2013—and of how conditions have changed in the interim. This is followed by an evaluation of how the proposed updates to the Preferred Alternative could affect traffic operations and other transportation modes in the project area. The memo concludes with a discussion of mitigation measures.

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CHAPTER 1. PROJECT DESCRIPTION

1.1 BACKGROUND

The Elliott Bay Seawall Project (EBSP) Final Environmental Impact Statement (EIS) was published in March 2013; it evaluated a No Action Alternative and three potential build alternatives for the project. As required by the Washington State Environmental Policy Act (SEPA), the build alternatives represented different ways of accomplishing the project purpose of protecting the shoreline and upland areas from damage due to coastal storms and seismic events, and improving the nearshore ecosystem of Elliott Bay. The three build alternatives (Alternative A, Alternative B, and Alternative C) encompassed a range of design ideas to establish “bookends” for the project, thereby capturing a suite of potential options and effects.

Alternative C was identified by the City as the Preferred Alternative and continued into final design and construction. Since publication of the FEIS, several changes have been proposed to the project design and construction methods. The City has determined that the proposed changes have the potential to result in significant adverse impacts that were not evaluated in the FEIS, and therefore is preparing a Supplement Environmental Impact Statement (SEIS) to review only those project elements that have changed from the Preferred Alternative.

This addendum supplements the Transportation Discipline Report from the FEIS. It discusses the potential impacts on transportation from the Updated Preferred Alternative. Material already covered in the FEIS, including affected environment, impact analysis, and mitigation, is not reproduced in this document.

1.2 UPDATES TO THE PREFERRED ALTERNATIVE

The Preferred Alternative consists of three major components, including a new seawall, improvements to aquatic habitat, and enhanced upland areas. The Updated Preferred Alternative proposes changes to two of these components: the seawall and aquatic habitat. The proposed changes are summarized below; please see Chapter 2 of the SEIS for more detail.

Table 1-1 provides an overview of the differences between the Preferred Alternative and the Updated Preferred Alternative. Figure 1-1 at the end of this chapter depicts a typical construction sequence for the Updated Preferred Alternative.

1.2.1 Seawall

The seawall would be replaced as planned under the Preferred Alternative. However, the extent of the setback would change somewhat in Zones 1 and 2. The 15-foot setback in Zone 1 would be eliminated; instead, the existing gravity wall would be demolished down to the appropriate level to provide support for the habitat beach. In Zone 2, the setback would range from 10 to 15 feet landward, similar to the setback in Zone 3. The setback in all other zones would remain the same.

TABLE 1-1 PROPOSED CHANGES TO THE PREFERRED ALTERNATIVE

Project Feature	Preferred Alternative	Updated Preferred Alternative
Project Design		
Seawall improvements	15-foot landward setback in Zone 1	No setback in Zone 1 and slightly reduced setback in Zone 2
Roadway improvements	Southern terminus at S. Washington Street	Southern terminus at S. Main Street
Habitat improvements	Extended habitat benches between each of the piers	Modifications to minimize adverse effects, accommodate operational constraints at Colman Dock, and avoid conflicts with navigation
Construction Schedule		
Construction completed	Target completion date: mid-2016 Two summer shutdown periods (Memorial Day – Labor Day 2014 and 2015)	Target completion date: mid-2016 Work may continue through summers to ensure timely completion of the project
Waterfront business closures	Potential temporary closure of two businesses	Closure of most businesses on Piers 54 to 57, currently planned for the nine month off-peak period between October 2014 and June 2015
Pier access	Temporary access bridges to all piers required throughout construction	Reduced number of temporary access bridges during construction in Zone 3
Construction Methods		
Ferry Queuing	Ferry-queuing provided on Alaskan Way, north of Colman Dock, between Madison Street and Yesler Way	Beginning in summer 2014, ferry-queuing would switch to south of Colman Dock, between Yesler Way and S. Jackson Street
Temporary containment	Sheet pile containment wall would be installed prior to jet grouting and removed at the end of construction	Containment provided by sheet pile, turbidity curtain, and/or other methods as feasible and appropriate to protect water quality. Containment wall would be cut to allow a portion to remain as vertical support for the habitat bench in some areas
Zone 1 beach stability	Geotextile used to support aquatic materials and increase stability of existing soils	Geotextile and sheet piles to support aquatic materials and increase stability of existing soils
Water management	Intermittent dewatering in excavation zone landward of existing seawall	Up to continuous dewatering in all excavation areas behind containment wall

Project Feature	Preferred Alternative	Updated Preferred Alternative
Soil improvement	Jet grouting from on top of the existing roadway, prior to excavation	Jet grouting from on top of the existing roadway or within the excavated work zone in some areas along the seawall
Construction sequence	See Figure 2-10 in the Final EIS	See revised typical construction sequence example in Figure 1-1

1.2.2 Habitat Improvements

In response to conflicts with adjacent uses, the overall extent and design of the expanded habitat benches would be changed in the Updated Preferred Alternative.

The habitat beach located in Zone 1 is in close proximity to the Washington Street Boat Landing, which is a historic property listed in the National Register of Historic Places. To minimize the adverse effect to this property, the size of the beach, height of the confining rock sills, and extent of the riparian plantings would be slightly reduced. The beach would also be shifted slightly southward to provide a larger setback from Colman Dock. In addition, aesthetic design elements or treatments may be incorporated into the natural features of the beach in a form consistent with its purpose to enhance riparian and intertidal habitat.

To reduce potential conflict with existing boat moorage businesses in Zone 3, the waterward extent of the expanded habitat bench north of Pier 56 would be reduced. Also in Zone 3, the expanded habitat bench north of Pier 54 would be removed because it is located on privately owned property.

In Zone 6, the expanded habitat bench north of Pier 69 would be eliminated from the project design to minimize potential impacts to existing moorage space managed by the Port of Seattle. The expanded habitat bench north of Pier 66 is being evaluated for its potential to affect future moorage opportunities.

Despite the changes, the habitat enhancements are still expected to meet the project purpose of improving the nearshore habitat of Elliott Bay.

1.2.3 Upland Improvements

The Updated Preferred Alternative would not change the project's upland improvements.

1.2.4 Construction Schedule

Construction of the Central Seawall began in November 2013. Due to the seawall's importance as critical infrastructure and as a foundation for other independent waterfront improvement projects, the City is committed to completing Central Seawall replacement in 2016.

Because project construction is a complex and dynamic process, it is susceptible to schedule changes due to changed field conditions, availability of materials, extreme weather events, and many other factors. To ensure that the project is completed on time, construction is now likely to continue through the summers of 2014 and 2015. The most critical construction activities would continue as needed

during the summer months to recover any time lost to unanticipated schedule delays; additional efficiencies would also be gained by eliminating the need for demobilization and remobilization.

Summer activities could range from minor utility and roadway work to jet grouting and seawall reconstruction. The City would strive to minimize impacts on waterfront businesses, residents, and visitors by limiting summer activities to the greatest extent feasible that is consistent with timely project completion, and by implementing the access and wayfinding measures described in Chapter 8 of the Final EIS.

As described in the EIS, access to the piers will generally be provided throughout project construction. However, most businesses on Piers 54, 55, 56, and 57 are now expected to close for a period of approximately nine months, currently planned to extend from October 2014 through June 2015. This closure would eliminate many challenges related to maintaining pier access across an expansive construction zone and would thereby allow construction to proceed more efficiently. The Great Wheel and Argosy Cruises would remain open during this period; along with some office spaces (Argosy Cruises may move its passenger access to nearby piers). Limited access to Piers 54 through 57 would be provided during the business closure period for those businesses that remain open; access to all facilities on these piers would be available before and after the closure period. Access to the piers located outside of the business closure area would be maintained throughout project construction by way of temporary structures or revised access points.

With these modifications, Central Seawall construction is anticipated to be substantially complete by mid-2016, the target completion date identified in the EIS. However, if unanticipated delays were to occur, it is possible that final construction activities could continue after that date until the project is completed.

1.2.5 Construction Methods

1.2.5.1 Ferry Queuing during Construction

A new access route for Colman Dock is proposed as part of the Updated Preferred Alternative. Beginning in summer 2014, the U-turn at Madison Street would be eliminated; instead, all ferry-bound traffic would enter Colman Dock from the south. The new route would provide ferry-queuing spaces on Alaskan Way to the south. This change would relocate the ferry-queuing lanes to an area outside of the active work zone, and it could provide more queuing space than the Preferred Alternative. Relocating ferry-queuing lanes to the south would also provide additional space for parking within the project area.

1.2.5.2 Temporary Containment

Use of the temporary containment wall has changed in two aspects since the FEIS.

- The temporary containment wall would be used where feasible. However, other types of containment (such as a turbidity curtain) would be used to isolate construction activities from Elliott Bay when a containment wall is not feasible.
- Rather than being removed completely, the containment wall would be cut off just below the top of the habitat improvements in most of Zone 4 and Zone 3.

1.2.5.3 Zone 1 Beach Stability

In coordination with Washington State Ferries, an analysis was done to address concerns related to the protection of Colman Dock from potential instability of the Zone 1 beach. The City concluded that additional geotechnical reinforcement would be necessary to strengthen the existing sediments and therefore increase the stability of the habitat beach. Before a geogrid reinforcement is placed, two parallel rows of sheet pile would be driven into the glacially overridden Quaternary deposits or dense soils. The geogrid and sheet piles would be buried beneath the mudline. The sheet pile rows would be positioned beneath the northern slope of the habitat beach, and each row would be approximately 100 to 200 feet in length. Vibratory pile drivers would be used for most of the installation, with only limited need for impact pile driving. In combination with the geogrid reinforcement, the sheet piles would stabilize the Zone 1 habitat beach, increasing stability during a seismic event and reducing potential impacts to adjacent structures.

1.2.5.4 Water Management

To create drier conditions for construction, the contractor has determined that a larger area would be dewatered. Dewatering generally involves pumping the water to a location where it can be settled and/or treated before discharge. The water treatment would occur onsite. Due to space limitations, treatment may be staged on land, as space allows, or on a barge, which most likely be located at Piers 62/63 (although its location could change based on construction requirements). Once treated to meet the water quality requirements specified by the Department of Ecology, the water would be discharged to Elliott Bay. In some cases, water may be discharged to the King County wastewater treatment system or disposed of offsite.

1.2.5.5 Soil Improvement

To enhance constructability and overall understanding of site conditions, substantial portions of the construction work zone would be excavated before jet grouting begins. This technique would reduce the number of potential obstructions, eliminate void spaces, and provide more reliability for the final jet grout column layout compared to jet grouting from the roadway surface. Jet grouting would still occur from the roadway surface in some areas where major excavation is not reasonable.

1.2.5.6 Use of Barges

In addition to the activities described in the FEIS, barges may also be used for staging of some construction processes. For example, tanks and ancillary water treatment equipment could be placed on a barge. This would allow these types of operations to occur in close proximity to the project area, but outside of the confined construction work zone.

1.2.6 Construction Sequence

As design has progressed and construction techniques have been further developed by the project team and the contractor, a modified construction sequence has been developed to increase efficiency. The

main construction steps described in the FEIS will continue to occur, but they may be in a different order in the overall construction sequence.

Figure 1-1 provides a typical overview of how the seawall would be built with the revised approach. Construction would generally follow these steps in sequence through the active work zone; however, the sequencing and execution would vary between the different seawall types. It is also important to note that not all of the steps would occur at each location, and the construction sequencing may change depending on the site conditions and other factors encountered and evaluated during construction.

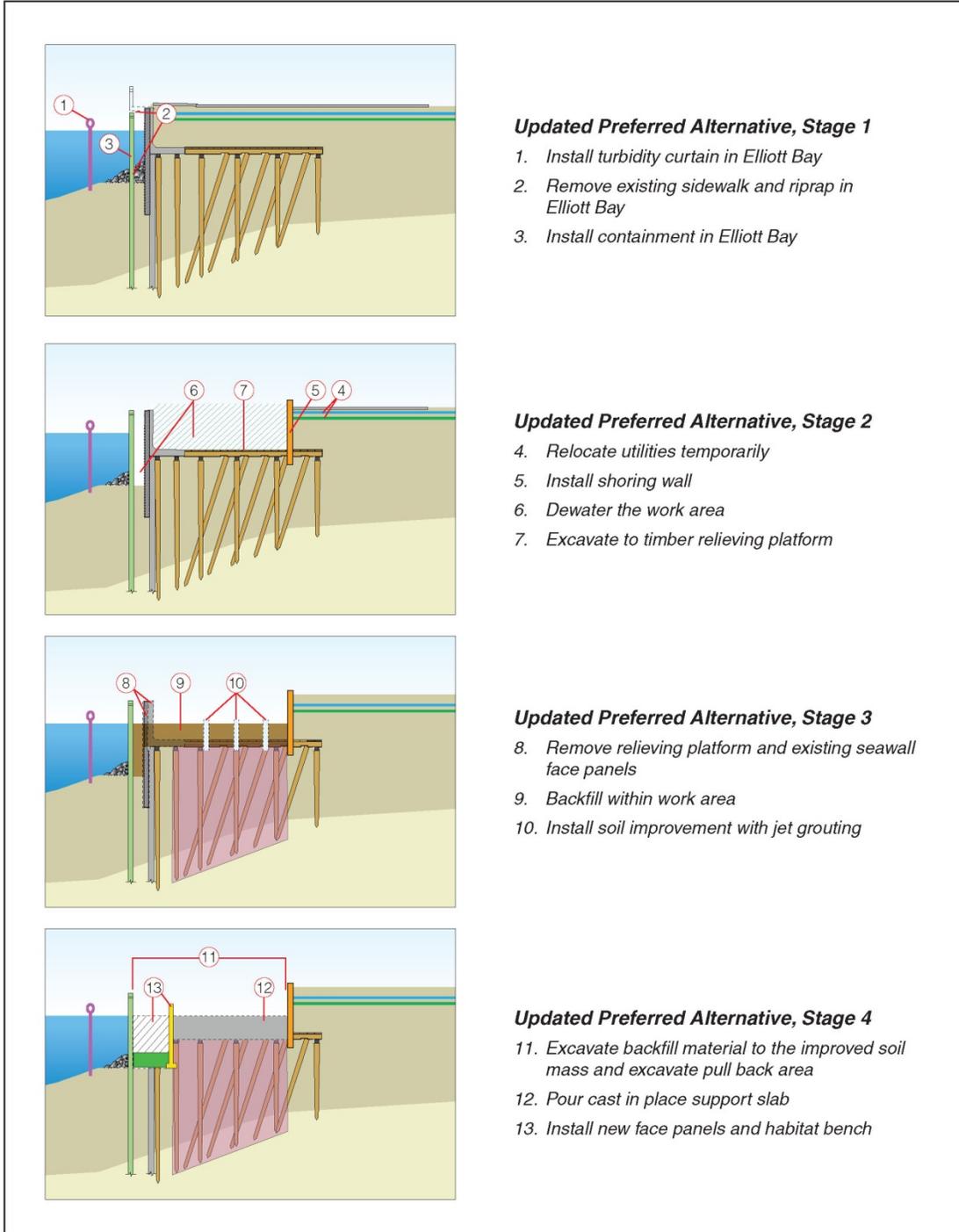


Figure 1-1 Typical construction sequence for the Updated Preferred Alternative

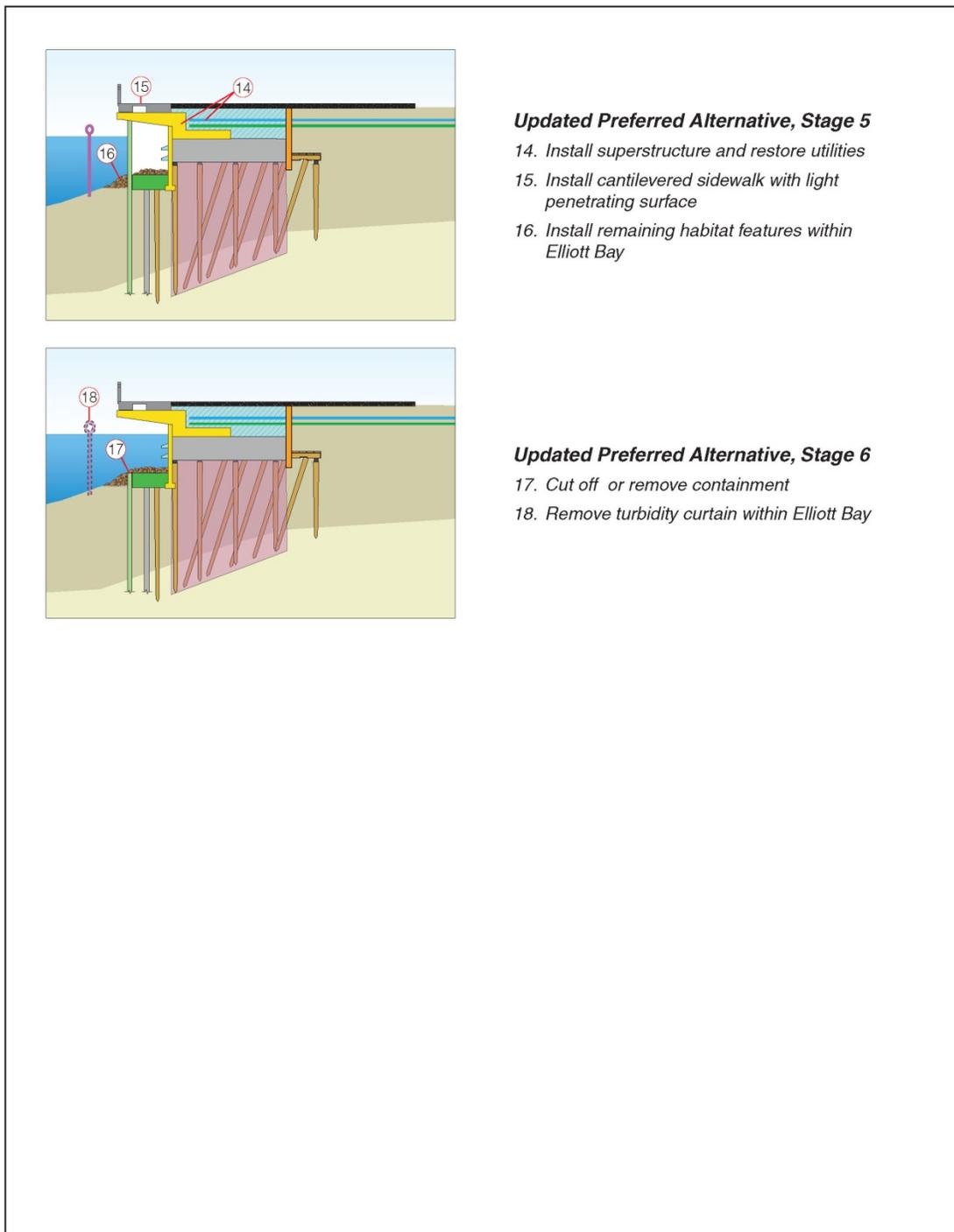


Figure 1-1 Typical construction sequence for the Updated Preferred Alternative (continued)

CHAPTER 2. AFFECTED ENVIRONMENT

2.1 BASELINE CONDITION

The FEIS identified conditions on the ground in 2010 as the baseline for measuring Central Seawall construction-related impacts. While the transportation network in the study area has changed since 2010 due to ongoing Alaskan Way Viaduct Replacement Project (AWVRP) construction, these changes would only be temporary without the EBSP, and Alaskan Way would be restored to its original alignment upon completion of AWVRP construction. Because the EBSP would postpone restoration of Alaskan Way, this analysis continues to use the FEIS definition of “existing conditions” as 2010 rather than 2013. Using the 2010 conditions as a baseline ensures that impacts are described in relation to the original Alaskan Way environment.

Because traffic and parking conditions in the project area have been altered by the start of AWVRP construction, it might seem more logical to use the most recent conditions as a baseline. However, if EBSP activities were compared to the transportation network in place in 2013, some impacts may be understated or not identified at all. For instance, parking impacts of the EBSP would be understated if a 2013 base year were used because AWVRP construction has removed parking spaces beneath the Alaskan Way Viaduct (AWV), which would be restored after the project if not for EBSP construction. If the 2013 conditions were used as the baseline, fewer parking impacts would be identified because those spaces would not have existed in the baseline. By using a 2010 baseline, when those spaces did exist, the analysis fully discloses the project’s impacts.

The following two subsections explain the changes that have occurred in the local roadway network, and the resulting changes in traffic volumes, between 2010 and 2013.

2.1.1 Changes to Local Roadway Network between 2010 and 2013

As discussed in the introduction to this chapter, the current conditions (as of Fall 2013) in the study area differ from those in 2010. This section briefly describes how the transportation network has changed.

The study area north of Spring Street remains as it was in 2010, while substantial changes in the transportation network have taken place south of Spring Street. Alaskan Way through traffic is now being routed to the temporary road under the AWV between Spring Street and S. King Street. Traffic is routed from the original Alaskan Way alignment to beneath the AWV south of Spring Street. At S. King Street, the detour continues onto Railroad Way S.

Spring Street presents a decision point for southbound drivers: they may continue traveling on the temporary road under the AWV or they may enter the ferry access lanes west of the AWV (on the original alignment of Alaskan Way). Through traffic is directed into a single lane between Spring and Madison Streets which continues under the AWV from Spring Street to Railroad Way S. Left turns may be made from the southbound lane at Marion Street (prohibited on weekdays from 3 to 7 pm), S. Main Street, and S. King Street. Vehicles authorized to enter Terminal 46 may make right turns from the southbound lane at S. Main Street and S. Jackson Street. Southbound ferry traffic remains west of the AWV on the original Alaskan Way alignment. Two lanes are provided for ferry traffic between Madison

Street and Yesler Way, at which point both lanes turn into Colman Dock. A third lane is provided between Columbia Street and Yesler Way to facilitate vehicle staging near the ferry terminal.

In addition to the southbound ferry access lanes, two lanes are reserved for southbound transit and emergency access on the eastern half of the original Alaskan Way alignment between Madison Street and Columbia Street. Beginning in late September 2013, routes 16, 66, and 99 were moved to First Avenue, with the nearest stops to the ferry terminal at Marion Street. Routes 16 and 66 no longer layover along the waterfront.

Northbound traffic on Alaskan Way is routed to the temporary road under the AWW from S. King Street to just south of Spring Street. Through traffic enters from Railroad Way S. and travels in a single lane to S. Washington Street. From S. Washington Street to Yesler Way, a northbound left-turn lane is provided in addition to the through lane. However, only authorized trucks, buses, and motorcycles are permitted to use the turn lane to enter Colman Dock at the Yesler Way intersection. From Yesler Way to Madison Street, two northbound lanes are provided: one is designated for ferry access and the other serves through traffic. At Madison Street, the inside northbound lane is provided for ferry-bound traffic to make a U-turn to enter the southbound ferry access lanes west of the AWW. At this point, through traffic transitions to the original northbound Alaskan Way.

South of Yesler Way, the sidewalk on the west side of the original Alaskan Way alignment is closed to accommodate AWVPR construction efforts. To the north of Yesler Way, this sidewalk remains unaffected by construction. The pedestrian and bicycle path that runs between the original Alaskan Way alignment and the AWW is detoured in several locations. Between Spring and Madison Streets, the pathway detours alongside the barriers (on the east side of the travel way) that guide traffic from the original Alaskan Way alignment to the temporary road under the AWW. The path is routed to the east side of the AWW over a series of former parking stalls (in use before AWVPR construction) and connects with the sidewalk on the north side of Madison Street. Pedestrians and bicyclists wanting to continue along Alaskan Way are directed to cross the east and south legs of the intersection of Madison Street and the roadway under the AWW. This leads pedestrian and bicycles back to the original pathway for travel between Madison Street and Yesler Way. At that point, the path is detoured to run alongside the eastern AWW pillars from Yesler Way to S. Jackson Street. At S. Jackson Street, bicycles and pedestrians can cross the temporary road and original Alaskan Way alignment (which is closed to traffic) to join a relocated Elliott Bay trail on the west side of Alaskan Way.

Transportation improvements have also been made outside the project area that influence traffic flow within it, primarily as a result of AWVPR construction. These include modifications to the Spokane Street Viaduct that add new ramp connections to First Avenue S. and Fourth Avenue S. These new connections provide the ability for traffic that would otherwise use the AWW to redistribute along other north-south streets accessing Downtown Seattle and the waterfront.

In 2010, there were 377 City-owned parking spaces under the AWW. As of September 2013, nearly all of the spaces under the AWW south of Spring Street have been removed to make room for travel lanes. Additional on-street spaces have been added along Alaskan Way between Virginia and Spring Streets, as well as under the viaduct north of Madison Street. A small number of parallel parking spaces have been

put in place between the pillars on the west side of the AWV, particularly for taxis and loading zones near Colman Dock. Together, these changes have resulted in a net loss of approximately 160 spaces since 2010. Parking east of the AWV adjacent to buildings has largely been maintained. Reaching those parking spaces requires vehicles to cross the pedestrian and bicycle path in some locations.

None of the roadway network changes have affected rail operations.

2.1.2 Changes in Traffic Volume between 2010 and 2013

Table 2-1 summarizes PM peak hour traffic volumes on Alaskan Way in 2010 and 2013. Consistent with the FEIS, these volumes are representative of conditions during the summertime, the period of the year with the highest travel demand on Alaskan Way even though construction was not originally proposed during the summer months. The 2010 volumes were presented as part of the FEIS. The 2013 volumes were compiled from new counts as well as Seattle Department of Transportation's (SDOT's) traffic volume database. Where noted, values were factored to approximate typical summer conditions.¹

On the temporary road beneath the AWV, traffic capacity has been reduced to one through lane in each direction by AWVRP construction. Although volumes have also decreased, the volume reduction has been smaller than the reduction in capacity. Thus, the 2013 roadway system in the Central Seawall area is equally or more constrained (and therefore more congested) than it was in 2010. For example, at S. King Street where there is only one through lane in each direction, the volume per through lane has increased from 555 to 630. At Yesler Way, the two-way volume per through lane has essentially stayed the same.² At the three locations included in Table 2-1 that are north of the temporary road, roadway capacity on Alaskan Way has not changed since 2010 although there has been some decrease in volumes due to the diversion of through traffic caused by the construction to the south. Consistent with the steady or increasing traffic volume per lane, overall traffic operations in the area affected by the AWVRP have stayed the same or degraded since 2010.

Therefore, using 2013 conditions as a baseline for identifying the impacts of Central Seawall construction could result in understating impacts from the EBSP. For example, an intersection that operates at Level of Service (LOS) D under 2010 conditions, but in 2013 has only a single lane in each direction and operates at LOS F, would also operate at LOS F under the EBSP construction scenario. Using the 2010 baseline results in an impact being identified because the intersection would fall from LOS D to LOS F. However, if a 2013 baseline were applied, no impact would be identified because the intersection would already be failing. This example illustrates the general relationship among the 2010 baseline, the 2013 baseline, and the EBSP construction scenarios.

¹ The factors were determined during the FEIS analysis after a review of seasonal variation along Alaskan Way over the past decade as well as input received from SDOT.

² This location is more nuanced due to capacity provided by the northbound ferry access lane. Observations suggest that the growth in northbound traffic is related to the ferry access lane which feeds into the U-turn at Madison Street. Southbound, the volume north of Yesler Way has dropped by exactly half since 2010 meaning that the volume per lane has stayed the same as 2010 conditions.

TABLE 2-1 ALASKAN WAY – PM PEAK HOUR VOLUME COMPARISON BETWEEN 2010 AND 2013

ID	Location on Alaskan Way	2010			2013		
		Volume	Number of Through Lanes	Volume per Lane	Volume	Number of Through Lanes	Volume per Lane
1	North of S. King Street ¹	2,220	4	555	1,260	2	630
2	North of Yesler Way ²	2,160	3	720	1,590 ³	2	795
3	North of Union Street	1,850	4	465	1,520	4	380
4	North of Lenora Street	1,810	4	455	1,460	4	365
5	North of Wall Street ²	1,570	4	395	1,660	4	415

¹ 2013 counts were collected on the temporary road during spring and converted to approximate summer conditions.

² 2013 counts were collected on the temporary road during fall and converted to approximate summer conditions.

³ An additional 620 vehicles travel southbound during the PM peak hour at this location to access the ferries along the pre-AWVRP alignment of Alaskan Way. As noted in the “2013 Transportation Conditions” section, this ferry access corridor is entered at Madison Street. Some vehicles enter by performing a northbound U-turn from the rerouted Alaskan Way, but many also enter directly from Madison Street westbound.

Source: Fehr & Peers and SDOT Traffic Count Database, 2013.

Using a 2013 baseline would not result in a full disclosure of traffic and parking impacts related to the EBSP because it would take advantage of the temporary constraints in the study area caused by the AWVRP. Therefore, choosing 2010 as the baseline is a conservative approach to identify impacts. Additionally, maintaining 2010 as the “existing” condition year ensures consistency with the previous analysis in the DEIS and FEIS.

2.2 DIVERSION ANALYSIS

As described above, the changes in the project roadway system between 2010 and 2013 have resulted in reduced traffic volumes on Alaskan Way. A portion of traffic has diverted from Alaskan Way to parallel routes to avoid the constrained roadway conditions associated with the AWVRP construction. To assess whether this shift has resulted in additional congestion on these parallel routes, a traffic diversion analysis was conducted. The analysis used screenlines, which sum traffic volumes from parallel routes to give an overall picture of drivers’ route choices.

Traffic diversion analysis was performed for two east-west screenlines:

- **Northwest of Wall Street** crossing Alaskan Way, Elliott Avenue, Western Avenue, First Avenue, Second Avenue, Third Avenue, Fourth Avenue, and Fifth Avenue.
- **North of Yesler Way/James Street** crossing Alaskan Way, Alaskan Way Viaduct, Western Avenue, First Avenue, Second Avenue, Third Avenue, Fourth Avenue, Fifth Avenue, and Sixth Avenue.

The 2010 volumes along Alaskan Way and parallel routes through Downtown were previously collected and discussed as part of the FEIS. The 2013 volumes were collected in September and factored to approximate typical summer conditions.³ It should be noted that the diversion discussed in this section is the result of AWVRP construction (and potentially other factors) as EBSP construction had not begun when this analysis was undertaken.

2.2.1 Wall Street Screenline

The Wall Street screenline gives an indication of traffic flow into and out of the northern portion of the study area. Table 2-2 and Figure 2-1 summarize the volumes across this screenline in the PM peak hour in 2010 and 2013. The north-south roadways east of Alaskan Way are combined as “parallel downtown routes” to clearly show how the net traffic has changed between Alaskan Way and alternate routes.

The total volume crossing the screenline grew by 12 percent between 2010 and 2013, with a growth of 6 percent on Alaskan Way. This location is nearly a mile north of the temporary road and has not been constrained by AWVRP construction. Travel on the parallel downtown routes grew by approximately 14 percent, suggesting that some diversion is occurring. However, the fact that traffic increased both on Alaskan Way and on the parallel routes indicates that part of the overall screenline increase represents background growth in traffic volumes.

TABLE 2-2 WALL STREET SCREENLINE – PM PEAK HOUR VOLUME COMPARISON BETWEEN 2010 AND 2013

Location	2010			2013		
	Southbound	Northbound	Total	Southbound	Northbound	Total
Alaskan Way	810	760	1,570	890	770	1,660
Parallel Downtown Routes	3,160	3,900	7,060	4,450	3,570	8,020
Total	3,970	4,660	8,630	5,340	4,340	9,680

Source: Fehr & Peers and SDOT Traffic Count Database, 2013.

³ The factors were determined during the FEIS analysis after a review of seasonal variation along Alaskan Way over the past decade as well as input received from SDOT.

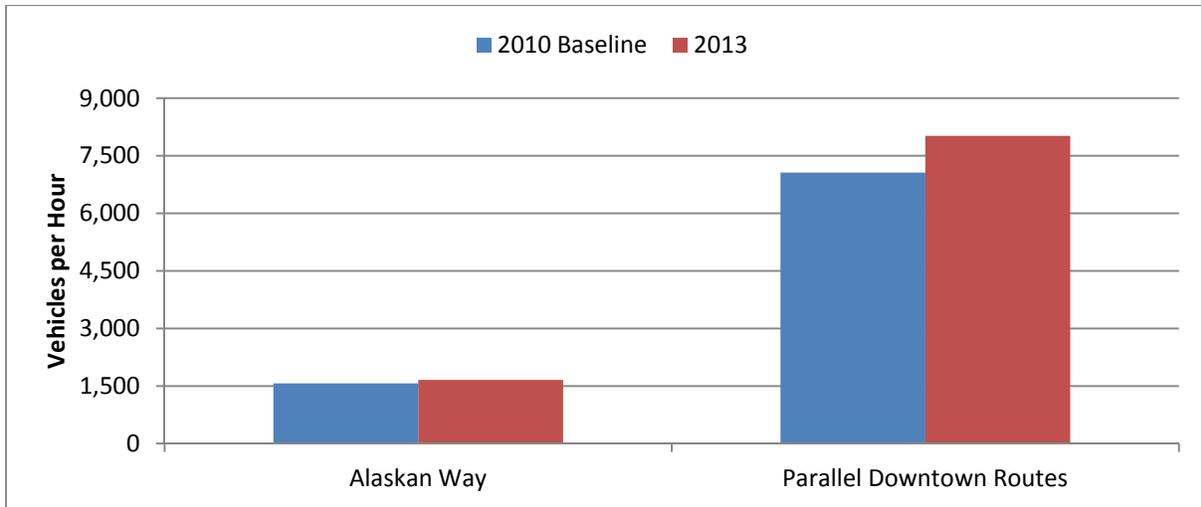


Figure 2-1 Wall Street Screenline – PM Peak Hour Volume Comparison between 2010 and 2013

2.2.2 Yesler Way/James Street Screenline

The Yesler Way/James Street screenline represents traffic flow through the southern portion of the study area. Table 2-3 and Figure 2-2 summarize the volumes across this screenline in the PM peak hour under 2010 and 2013 conditions. Volumes for Alaskan Way and the AWV are shown separately since capacity on both of those facilities has been reduced by AWVRP construction. The volumes on the remaining parallel routes are combined to show the net diversion effects.

The total volume crossing the screenline grew by 2 percent from 2010 to 2013. Traffic volumes decreased by 27 percent on Alaskan Way and 17 percent on the AWV, a total of about 2,290 vehicles during the PM peak hour. The traffic-carrying capacity of both facilities has decreased due to AWVRP construction activities, and much of the 2010 traffic volume has diverted to parallel downtown routes, which had a substantial volume increase of 37 percent. Compared to 2010, these parallel routes carry an additional 2,610 vehicles during the PM peak hour, which accounts for the diversion from both Alaskan Way and the AWV as well as a small amount of background traffic growth. In particular, First Avenue S. and Fourth Avenue S. have become more attractive routes because of the new connections to the Spokane Street Viaduct. A review of Washington State Department of Transportation (WSDOT) data indicates that daily traffic volumes on I-5 have remained steady from 2010 to 2013, indicating that most trips diverted from Alaskan Way and the AWV remain within the local network.

TABLE 2-3 YESLER WAY/JAMES STREET SCREENLINE – PM PEAK HOUR VOLUME COMPARISON BETWEEN 2010 AND 2013

Location	2010			2013		
	Southbound	Northbound	Total	Southbound	Northbound	Total
Alaskan Way	1,440	720	2,160	720	870	1,590
Alaskan Way Viaduct	5,400	5,000	10,400	4,470	4,210	8,680
Parallel Downtown Routes	3,960	3,110	7,070	5,910	3,770	9,680
Total	10,800	8,830	19,630	11,100	8,850	19,950

Source: Fehr & Peers and SDOT Traffic Count Database, 2013.

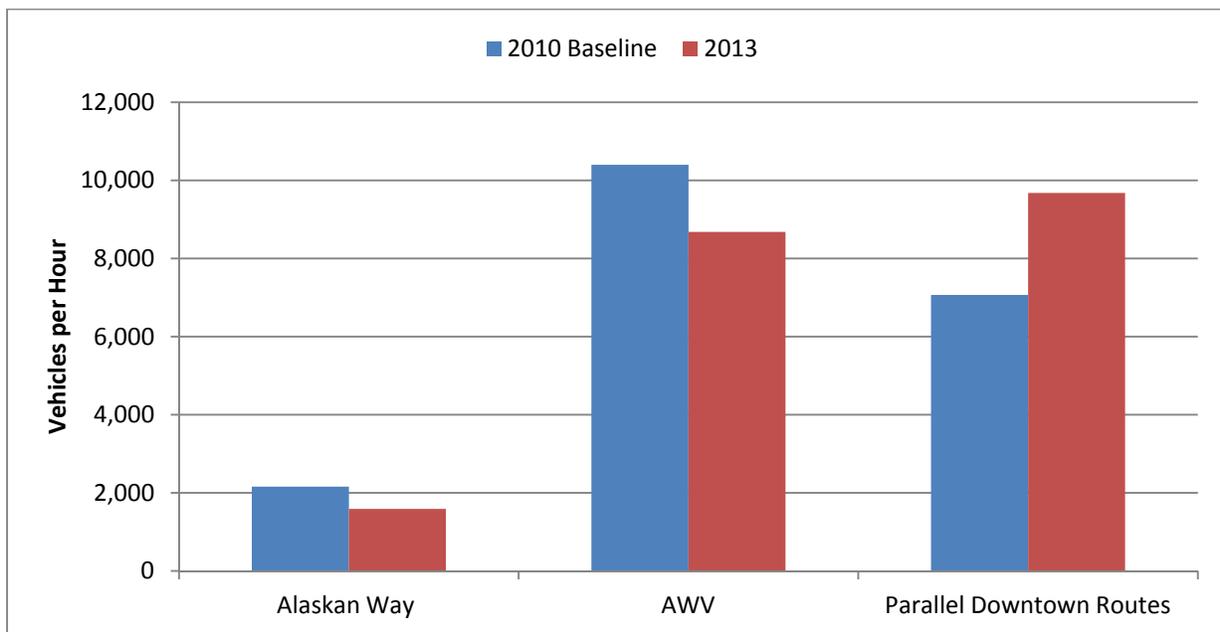


Figure 2-2 Yesler Way/James Street Screenline – PM Peak Hour Volume Comparison between 2010 and 2013

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CHAPTER 3. CONSTRUCTION EFFECTS

This section provides additional detail on how the updates to the Preferred Alternative would affect transportation during Phase I and Phase II of construction. Specific changes to the roadway network are discussed for each phase, followed by an analysis of how these changes would affect roadway operations, travel times, parking, and other aspects of the transportation system.

3.1.1 Phase I

3.1.1.1 Changes in the Roadway Network

The FEIS divided the Central Seawall traffic analysis into two phases: Phase I and Phase II. Phase I would cover the timeframe from Fall 2013 to Spring 2015 and the area from Virginia Street to Madison Street. The SEIS covers only the timeframe from June 2014 through the completion of Central Seawall construction.

From July through September 2014, EBSF construction would not be shut down, as was assumed in the FEIS. The schedule change would affect the mitigation measures proposed and the duration of impacts, but would not affect the traffic impacts identified in the FEIS since summertime traffic and pedestrian volumes were used for all analyses. The three-lane temporary road beneath the AWW would be largely in place as described in the FEIS, but would stretch slightly farther to the north narrowing from four to three lanes south of Lenora Street rather than at Virginia Street. Given that there is no cross street at the location, this is not expected to make any substantial difference to the results presented in the FEIS. In addition, the portion of the temporary road south of S. Washington Street would not include the center emergency access/turn lane assumed in the FEIS. This condition reflects the way the roadway is currently configured as part of the AWWRP detour route. SDOT has been monitoring operations and plans to continue the current configuration since operations have been acceptable. However, if impacts on emergency responders are observed, SDOT may revise the detour route.

The most substantive proposed change from the FEIS is how ferry traffic would access Colman Dock. Rather than driving northbound on the temporary road to make a U-turn at Madison Street and travel in a southbound lane west of the AWW, ferry traffic would approach from the south and queue on the original Alaskan Way west of the AWW, where AWWRP construction will already have been completed. This dedicated ferry queuing space would stretch from Yesler Way to S. Jackson Street and would be four to five lanes wide. Ferry traffic would access the queuing space from westbound S. Jackson Street or from the southbound temporary road (in essence, a pair of right turns forming a U-turn at S. Jackson Street). Left turns into Colman Dock from the northbound temporary road at S. Jackson Street would be prohibited. Ferry traffic leaving Colman Dock from Marion Street and Yesler Way would turn directly onto the northbound temporary road rather than into a ferry egress lane west of the AWW, as described in the FEIS.

The proposed configuration has two major benefits. First, the dedicated ferry queuing space could be more than three times longer than what would be provided under the original plan, depending on final configuration. Second, removing the ferry lanes north of Yesler Way would allow additional area for temporary parking spaces on original Alaskan Way along the busiest part of the waterfront.

The new ferry queuing plan would remain in place for the duration of Central Seawall construction. With the proposed construction sequencing for the Preferred Alternative, the section of Alaskan Way from midblock between Union and University Streets to Madison Street would be under construction during Phase I. This is consistent with the assumptions made in the FEIS, which conservatively assumed that the entire length of Virginia to Madison could be affected during this phase. A pedestrian and bicycle path would be in place under the AWV from King Street to Yesler Way. From Yesler Way to Pike Street, the path would be immediately west of the AWV. Connections from that path would be provided to access the businesses that would remain open during that timeframe. Most businesses on Piers 54 to 57 would close between October 2014 and June 2015.

The following sections describe how the proposed changes to the Preferred Alternative would affect the transportation system.

3.1.1.2 Roadway Operations

The FEIS used summertime volumes for analysis to provide a conservative assessment of impacts. Therefore, the schedule revision to the Preferred Alternative affects only the duration of impacts, rather than the severity. However, the Colman Dock access revision would affect the location and severity of impacts.

As mentioned above, the dedicated ferry queuing space under the Updated Preferred Alternative is much larger than what was previously assumed. The total queuing space would be as large as 3,660 feet and would fit up to approximately 183 vehicles. The assumption in the FEIS was that only 1,075 feet of dedicated ferry queuing space would be provided. The proposed plan substantially reduces the potential for spillback into the general purpose lanes that was identified under the scenario evaluated in the FEIS. The FEIS noted that the summer construction shutdown would alleviate the queue spillback since the construction zone could be reallocated to ferry queue storage, which is no longer possible under the proposed schedule. However, data provided by Washington State Ferries in the FEIS indicate that this amount of queue storage would generally accommodate summery ferry volumes, although there may be occasional periods of spillback during the busiest days of the year.

With ferry queuing space provided to the south of Colman Dock instead of to the north, some vehicle travel patterns would change. Ferry-bound traffic from the south, including from I-90 and I-5 south of Downtown Seattle, would likely access the ferry queuing lanes from First Avenue S. and S. Jackson Street. The final design team conducted traffic operations analyses to evaluate how transportation facilities would perform with the revised traffic patterns under the proposed ferry queuing configuration.⁴

Results suggest that no additional intersections along the temporary roadway would be impacted during the AM peak hour. During the PM peak hour, the FEIS identified an impact at the intersection of Alaskan Way and S. King Street which is still expected to be the case under the proposed scenario. The Alaskan

⁴ Parsons Transportation Group used the Synchro/SimTraffic software package to test how redistributed traffic volumes would affect roadway operations. Recent developments in the final design have included actuated signals on the temporary roadway which contribute to improved operations.

Way/S. Jackson Street intersection was projected to operate at LOS E in the FEIS; the increase in volume on the southbound temporary roadway and westbound S. Jackson Street is expected to cause the intersection to degrade to LOS F, which would constitute an impact. Although no other intersections along the temporary roadway are expected to be impacted, the westbound approaches of numerous intersections would experience substantial delay due to minimal gaps in traffic on the temporary roadway.

The removal of the U-turn at Madison Street would improve operations north of Yesler Way (at the Marion and Madison signals), since traffic bound for Colman Dock would not be competing for capacity in the northbound lane. In particular, signal operations at the former U-turn location would be better than those reported in the FEIS since no U-turn phase would need to be served, increasing the green light time given to other movements.

Ferry-bound traffic from the north would be sharing the southbound lane with through traffic instead of being routed to a ferry holding lane west of the AWW as was originally assumed. This would result in more southbound congestion than was described in the FEIS. A ferry egress lane was also previously assumed to be in place west of the AWW. With the absence of that lane, traffic exiting Colman Dock would turn directly onto the temporary road. These influxes of northbound traffic would happen during relatively short time periods when a boat is unloading. Although operations at particular intersections may vary from what was described in the FEIS, the overall roadway system is expected to operate no worse than it would under the FEIS assumptions.

The increased volumes in the Pioneer Square area may cause additional delay for some individual movements at intersections, but overall traffic operations are not expected to degrade significantly from baseline conditions. The final design team considered how the new volume patterns would affect the First Avenue S. corridor from Yesler Way to S. Jackson Street. At Yesler Way, S. Washington Street, and S. Main Street, the volume increases are not expected to change overall intersection delay. The intersection of First Avenue S. and S. Jackson Street would have a volume increase on both its southbound and westbound approaches, resulting in a small amount of additional delay to the intersection. However, planning level analysis shows that the intersection will operate within the mild to moderate threshold as defined in Chapter 4 of the FEIS. Operations along First Avenue S. could be affected by varying levels of pedestrian activity at the intersections.

3.1.1.3 Travel Time

Travel times may vary from what was described in the FEIS based on the revision to Colman Dock access. In particular, southbound travel times would likely be slightly longer between Virginia Street and S. Jackson Street due to the addition of ferry-bound traffic to the through lane. Note that no impact threshold has been defined in relation to travel times. Travel times are based on summertime volumes. Therefore, the revision to the Preferred Alternative construction schedule does not affect the analysis.

3.1.1.4 Freight/Overlegal

Freight and overlegal vehicles would operate largely as described in the FEIS, although between October 2014 and May 2015, there may be fewer freight vehicles needing to access the study area since many of

the businesses located on Piers 54 through 57 will be closed during this period. Freight and overlegal vehicles would access Colman Dock via westbound S. Jackson Street and the ferry queuing area rather than making the northbound left turn at Yesler Way.

The haul route would be shorter than described in the FEIS, stretching only along the active construction area between Union and Marion Streets. Although this would allow for additional space outside of that area to be used for parking, it would require construction vehicles to travel along longer portions of the temporary road than was originally assumed. The number of these vehicles is relatively small, but they may have a disproportionate effect on traffic operations given their size and speed.

The FEIS assumed that overlegal vehicles could use the haul route along the length of the active construction area. However, the haul route will be more limited than was originally assumed. SDOT will work with overlegal vehicle operators during their required permitting process to determine an acceptable route.

3.1.1.5 Parking

The FEIS identified parking losses due to space required for construction activities, placement of the temporary road, and ferry access lanes. The changes to the Preferred Alternative would likely result in a similar amount of parking during construction as described in the FEIS, but these changes offer the opportunity to locate this parking in the central waterfront area north of the ferry terminal, where ferry queuing was initially planned to occur. Since many of the businesses located on Piers 54 to 57 will be closed between October 2014 and May 2015, there will likely be reduced parking demand during that time.

The FEIS assumed that during the summer construction shutdown, some temporary on-street parking spaces would be replaced where construction had been taking place. Since the new schedule calls for construction through the summer, this mitigation measure will not be possible to the degree originally planned. However, parking spaces could be replaced along the portions of Alaskan Way where construction has been completed and where ferry queuing was previously assumed.

3.1.1.6 Pedestrian and Bicycle

A pedestrian and bicycle path will run west of the AWV north of Yesler Way and east of the temporary road south of Yesler Way. Access to businesses will be provided from this path via structures that will cross the active construction zone. The closure of businesses on Piers 54 to 57 between October 2014 and June 2015 would potentially eliminate the need to build some access structures. Businesses that would remain open—and thus would have access structures constructed—include the Great Wheel, Mithun, and Argosy Cruises (though Argosy trips may leave from other locations). In addition, Fire Station No. 5 will require an access structure. The Marion Street pedestrian bridge would remain in place. No new impacts to pedestrians or bicycles are expected based on the proposed revisions to the Preferred Alternative.

3.1.1.7 Safety

Safety conditions are assumed to be the same as described in the FEIS.

3.1.1.8 Transit

Transit operations and impacts are assumed to be the same as described in the FEIS.

3.1.1.9 Water Transit Services

As described in the roadway operations section, the temporary roadway is expected to operate acceptably in the AM peak hour, but have impacts at Alaskan Way/S. Jackson Street, and Alaskan Way/S. King Street during the PM peak hour. However, on the whole, this ferry queuing plan is expected to be no worse than that evaluated in the FEIS. The FEIS identified impacts to ferry operations, which are expected to occur under the Updated Preferred Alternative as well. The duration of impacts would be longer due to the construction schedule change. The FEIS schedule for construction would have affected only a portion of the cruise season, which runs from May through September. Under the new schedule, EBSP construction would not be suspended during the summer. Therefore, the Bell Street Pier Cruise Terminal traffic could be affected by EBSP construction-related congestion for the entire cruise season, rather than only the shoulders of the season. As previously stated, the FEIS used summertime traffic volumes, so the previous analysis accounted for a summertime impact. In other words, the type and severity of the impacts would not change compared to those stated in the FEIS.

As described in the FEIS, some Port of Seattle customers, suppliers, and staff would use the temporary roadway to travel to and from Port properties. Although they may be affected by construction-related congestion, no impacts are expected beyond those intersections already cited.

Argosy may relocate some portions of its business to other nearby piers in the vicinity of its existing location, or perhaps even to South Lake Union Park.

3.1.1.10 Rail

Rail operations are assumed to be the same as described in the FEIS, which anticipated no impacts.

3.1.1.11 Emergency Services

Emergency service operations north of Yesler Way are expected to be the same as described in the FEIS. South of Yesler Way, operations would be different due to the absence of the center emergency access lane. However, this configuration has already been operating acceptably as part of the AWVRP detour, so no significant impacts are expected.

3.1.1.12 Event Traffic

Event traffic operations would be affected differently by the Updated Preferred Alternative from what was described in the FEIS due to the change in travel patterns caused by the revised ferry queuing plan. However, the FEIS already identified that the EBSP would disrupt routes used by event traffic, especially event-related pedestrian activity. Thus, no new impact is expected from the Updated Preferred Alternative. Mitigation measures will be tailored to accommodate event traffic under the proposed ferry queuing plan.

3.1.2 Phase II

3.1.2.1 Changes in Construction Schedule and Roadway Network

In the FEIS, Phase II covered the timeframe from Fall 2015 to project completion in 2016 and the area from Madison Street to S. Washington Street. The current assumptions differ in two ways:

- Construction for the Updated Preferred Alternative would occur through the summer of 2015 with no construction shutdown, so Phase II would begin in June 2015 rather than September 2015.
- The area under construction during Phase II would include a half-block section of Alaskan Way south of Union Street and the three-block section of Alaskan Way between Madison Street and Yesler Way.

The schedule change would affect the mitigation measures proposed and the duration of impacts, but would not affect the traffic impacts identified in the FEIS since summertime traffic and pedestrian volumes were used for all analyses.

Although the segments of Alaskan Way under construction differ somewhat from those assumed in the FEIS, most of the fundamentals of the roadway network would remain the same. North of Pike Street, Alaskan Way would be restored to accommodate the original four-lane cross section. However, depending on the contractor's phasing decisions, this stretch of roadway may be temporarily striped to maintain three travel lanes and angle parking for the duration of construction. This would mitigate parking impacts, but shift the transition between the original Alaskan Way and the temporary road farther north; in essence lengthening the section of three-lane temporary road compared to the FEIS assumptions. As under Phase I, the temporary road would not have a center emergency access/turn lane south of Yesler Way. The current configuration has proven to operate acceptably and would be continued unless operations degrade.

A pedestrian and bicycle path would be in place from Yesler Way to S. King Street east of the temporary road and from Pike Street to Yesler Way immediately west of the AWV. Connections from the path west of the AWV would be provided to access businesses along the waterfront piers. The waterfront businesses that would close the previous year would reopen in July 2015 and stay open throughout the duration of Central Seawall construction. The primary change would be the Colman Dock access plan, which would be in place as described for Phase I.

This section describes how the Preferred Alternative would affect the transportation system.

3.1.2.2 Roadway Operations

The FEIS used summertime volumes for analysis to provide a conservative assessment of impacts. Therefore, the schedule revision to the Preferred Alternative affects only the duration of impacts, rather than the severity. However, the Colman Dock access revision would affect the location and severity of impacts.

Colman Dock ingress and egress would operate as described for Phase I. The additional dedicated ferry queuing space would be particularly beneficial during the summer months when ferry queues are at

their peak. This substantially reduces the potential for spillback into the general purpose lanes that was identified under the scenario evaluated in the FEIS. The FEIS noted that the summer construction shutdown would alleviate the queue spillback since the construction zone could be reallocated to ferry queue storage, which is no longer possible under the proposed schedule. However, data provided by Washington State Ferries in the FEIS indicate that this amount of queue storage would generally accommodate summer ferry volumes, although there may be occasional periods of spillback during the busiest days of the year.

As described previously, the final design team conducted sensitivity tests to evaluate how traffic may operate under the proposed ferry queuing configuration.⁵ Results suggest that no additional intersections along the temporary roadway would be impacted during the AM or PM peak hours. The Alaskan Way/Marion Street would still be one of the more congested intersections as described in the FEIS. However, the proposed configuration is not expected to cause the intersection to fall below LOS E. Although no other intersections along the temporary roadway are expected to be impacted, the westbound approaches of numerous intersections would experience substantial delay due to minimal gaps in traffic on the temporary roadway.

The FEIS also assumed an egress lane west of the AWW from Yesler Way to S. Jackson Street. The absence of this lane would require traffic exiting Colman Dock to turn onto the temporary road at Yesler Way where ferry-bound traffic would also be located. This could contribute to southbound congestion; however, the effects are expected to be moderate. Although operations at particular intersections may vary from what was described in the FEIS, the overall roadway system is expected to operate no worse than it would under the FEIS assumptions.

As was the case under Phase I, the increased volumes in the Pioneer Square area would result in slightly more congested operations than those described in the FEIS. The final design team considered how the new volume patterns would affect the First Avenue S. corridor from Yesler Way to S. Jackson Street. At Yesler Way, S. Washington Street, and S. Main Street, the volume increases are not expected to change overall intersection delay. The intersection of First Avenue S. and S. Jackson Street would have a volume increase on both its southbound and westbound approaches, causing a small amount of additional delay to the intersection. However, planning level analysis shows that the intersection will operate within the mild to moderate threshold as defined in Chapter 4 of the FEIS. Operations along First Avenue S. could be affected by varying levels of pedestrian activity at the intersections.

3.1.2.3 Travel Time

Travel times may vary based on the revision to Colman Dock access. In particular, southbound travel times would likely be slightly longer between Virginia Street and S. Jackson Street due to the addition of ferry bound traffic to the through lane (as well as traffic leaving Colman Dock between Yesler Way and S. Jackson Street). Note that no impact threshold has been defined in relation to travel times. Travel times

⁵ Parsons Transportation Group used the Synchro/SimTraffic software package to test how redistributed traffic volumes would affect roadway operations. Recent developments in the final design have included actuated signals on the temporary roadway which contribute to improved operations.

are based on summertime volumes. Therefore, the revision to the Preferred Alternative construction schedule does not affect the analysis.

3.1.2.4 Freight/Overlegal

Freight and overlegal vehicles would operate largely as described in the FEIS. Freight and overlegal vehicles would access Colman Dock via westbound S Jackson Street and the ferry queuing area rather than making the northbound left turn at Yesler Way.

The haul route would be shorter than described in the FEIS, stretching only from Union to University Streets and from Madison to Yesler Way. Although this would allow for additional space outside of that area to be used for parking, it would require construction vehicles to travel along longer portions of the temporary road than was originally assumed. The number of these vehicles is relatively small, but they may have a disproportionate effect on traffic operations given their size and speed.

The FEIS assumed that overlegal vehicles could use the haul route along the length of the active construction area. However, the haul route will be more limited than was originally assumed. SDOT will work with overlegal vehicle operators during their required permitting process to determine an acceptable route.

3.1.2.5 Parking

The FEIS assumed that during the summer construction shutdown, some temporary on-street parking spaces would be replaced where construction had been taking place. Since the new schedule calls for construction through the summers, this mitigation measure will not be possible to the degree originally planned. However, parking spaces could be replaced along the portions of Alaskan Way where construction has been completed and where ferry queuing was previously assumed.

3.1.2.6 Pedestrian and Bicycle

As described in the FEIS, a pedestrian and bicycle path will run west of the AWV north of Yesler Way. Pedestrian access structures from the path would be constructed to Fire Station No. 5 and Colman Dock. In addition, the Marion Street pedestrian bridge would remain in place. Vehicular and pedestrian access structures would be constructed at Pier 57, Fire Station No. 5, and Colman Dock. The contractor would provide a restored sidewalk in Zone 3 during the summers to provide access to the commercial businesses.

3.1.2.7 Safety

Safety conditions are assumed to be the same as described in the FEIS.

3.1.2.8 Transit

Transit operations and impacts are assumed to be the same as described in the FEIS.

3.1.2.9 Water Transit Services

As described in the roadway operations section, the temporary roadway is expected to operate acceptably in the AM and PM peak hour so no new impacts to ferry-bound traffic are expected. On the whole, this ferry queuing plan is expected to be no worse than that evaluated in the FEIS. The FEIS identified impacts to ferry operations, which are expected to occur under the Updated Preferred Alternative as well.

Water transit services would operate largely as described under Phase I. However, the duration of impacts would be longer due to the proposed schedule for Phase II. The FEIS schedule for construction would have affected only a portion of the cruise season, which runs from May through September. Under the new schedule, EBSP construction would not be suspended during the summers. This means that Bell Street Pier Cruise Terminal traffic could be affected by EBSP construction-related congestion for the entire cruise season, rather than only the shoulders of the season. It is important to note that the FEIS used summertime traffic volumes, so the previous analysis accounted for a summertime impact. In other words, the type and severity of the impacts would not change compared to those stated in the FEIS. The current construction schedule would have Central Seawall construction completed in a similar timeframe to that assumed in the FEIS, though it could extend somewhat longer if necessary. The overall duration of impacts would be longer.

3.1.2.10 Rail

Rail operations are assumed to be the same as described in the FEIS, which anticipated no impacts.

3.1.2.11 Emergency Services

Emergency service operations north of Yesler Way are expected to be the same as described in the FEIS. South of Yesler Way, operations would be different due to the absence of the center emergency access lane. However, this configuration has already been operating acceptably as part of the AWVRP detour, so no significant impacts are expected.

3.1.2.12 Event Traffic

Event traffic operations would be affected differently by the Updated Preferred Alternative from what was described in the FEIS due to the change in travel patterns caused by the revised ferry queuing plan. However, the FEIS already identified that the EBSP would disrupt routes used by event traffic, especially event-related pedestrian activity. Thus, no new impact is expected from the Updated Preferred Alternative. Mitigation measures will be tailored to accommodate event traffic under the proposed ferry queuing plan.

3.1.3 Mitigation

3.1.3.1 Roadway Operations

All mitigation measures remain the same as stated in the FEIS, except that there would be no summer construction shutdowns.

3.1.3.2 Freight/Overlegal

All mitigation measures remain the same as stated in the FEIS, except freight and overlegal vehicles would access Colman Dock via westbound S. Jackson Street and the ferry queuing area rather than the northbound left turn at Yesler Way.

3.1.3.3 Business Access/Parking

As described in the FEIS, the City continues to develop and implement parking mitigation measures, including highly visible maps and signage along the waterfront to direct people to parking areas and striping of parking spaces in portions of the Alaskan Way right-of-way not being used for construction. Continued implementation of WSDOT's parking mitigation program for the Alaskan Way Viaduct, although not designed to address seawall project impacts, would provide the benefit of additional short-term parking spaces for waterfront visitors.

3.1.3.4 Pedestrian and Bicycle

All mitigation measures remain the same as stated in the FEIS, except that there would be no summer construction shutdowns. The City of Seattle is also working on plans for "pier posts," which would be pedestrian kiosks at key access points to help direct pedestrians to their destinations and provide information about the piers. These kiosks would serve both educational and wayfinding purposes.

3.1.3.5 Safety

All mitigation measures remain the same as stated in the FEIS.

3.1.3.6 Transit

All mitigation measures remain the same as stated in the FEIS.

3.1.3.7 Water Transit Services

All mitigation measures remain the same as stated in the FEIS, except that there would be no summer construction shutdowns.

One additional potential mitigation measure has been identified for the Bell Street Pier Cruise Terminal; note that this is an additional mitigation for the impact already described in the FEIS rather than corresponding to a new impact. A flagger could be stationed at the terminal during the periods when provisioning trucks must access the terminal. Provisioning trucks could approach from the north and the flagger could temporarily halt northbound traffic on the inside lane, allowing the trucks to swing into the inside northbound lane and make the turn onto the northern apron of the pier. This would remove the need for the trucks to approach through the construction zone.

3.1.3.8 Rail

As stated in the FEIS, no impacts to rail are anticipated, so no mitigation is identified.

3.1.3.9 Emergency Services

All mitigation measures remain the same as stated in the FEIS except that the center lane on the temporary road south of S. Washington Street may not be provided as a space for emergency vehicles. SDOT will monitor operations and work with the Fire Department to accommodate emergency response in another way if operations are adversely affected.

3.1.3.10 Event Traffic

All mitigation measures remain the same as stated in the FEIS.

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CHAPTER 4. OPERATIONAL EFFECTS

There is no change in operational effects from the FEIS.

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