



60% Design Submittal Narrative

ODOT | K19786 I-205: I-5 – OR 213, Phase 1

Combined I-205 Freeway Widening and Abernethy
Bridge Project

ODOT EA: PE003013

HDR Project # 10063137

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Figure 1. Project Phasing 1



Acronyms

ADA	Americans with Disabilities Act
CIA	Contributing impervious area
CPM	Contract Plans Manual
CRCP	Continuously reinforced concrete pavement
CTE	Construction Time Estimate
DEQ	Department of Environmental Quality
DSL	Department of State Lands
FAHP	Federal-Aid Highway Program
FDAP	Final Design Acceptance Package
FHWA	Federal Highway Administration
HCA	Habitat Conservation Area
NB	Northbound
NEPA	National Environmental Policy Act
NLTH	Non-linear time history
NMFS	National Marine Fisheries Service
NPS	National Park Service
NROD	Natural Resource Overlay Districts
NTR	Noise Technical Report
ODOT	Oregon Department of Transportation
Project	I-205: I-5 – OR 213
PS&E	Plans, Specifications, & Estimates
PSOR	Preliminary Signal Operations Review
ROW	Right-of-Way
SB	Southbound
SHPO	State Historic Preservation Office
TCP	Traffic Control Plan
USACE	US Army Corps of Engineers
USCG	US Coast Guard



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1 Executive Summary

This project will bring seismic resiliency and operational improvements to the I-205 corridor from the I-205/OR213 Interchange to the I-205/Stafford Road Interchange. From when the planning phase of the project began in July 2017 until the summer 2019, the project was envisioned to be designed and constructed via two separate packages as follows:

Package A: Abernethy Bridge improvements, including the OR43 interchange improvements and auxiliary lanes between OR43 and OR213.

Package B: Approximately six miles of additional lanes added to I-205 between OR43 and Stafford Road.

As project engineering work progressed beyond the September 2018 Final Design Acceptance Package, construction costs were anticipated to be funded during the June 2019 Oregon legislative session. When that did not occur, ODOT responded by revising the project phasing in August 2019 to advance more operational/capacity improvements and benefits of the Abernethy Bridge investments into the first design and construction package, which facilitates greater staged construction and funding flexibility. To that end, below is an updated phasing diagram that identifies the new “Phase 1” and “Phase 2” design/construction limits with key project features for each phase listed below.

Figure 1. Project Phasing



I-205: I-5 – OR 213, Phase 1

Phase 1 begins at the I-205 OR213 Interchange and extends to the I-205 10th Street Interchange. From I-205 MP 10.21 to MP 6.59, this phase consists of:

- Adding a third northbound (NB) and southbound (SB) Lane to I-205
- Adding a NB Aux Lane from OR99E to OR213
- Abernethy Bridge Widening and Seismic Retrofit



- NB Main Street Bridge Widening
- Broadway Street Overcrossing Bridge Removal
- West A and Sunset Overcrossing Bridge Replacements
- I-205 NB Rock Blasting Operations (West A to Sunset)
- OR99E Ramp Reconfigurations (All Ramps)
- OR43 Interchange Ramp Reconfiguration and Roundabout installation
- Removal of redundant OR43 NB entrance ramp
- ATM improvements at MP 8.25/8.29 SB and NB at Sunset
- Constructing eleven new sign structures (Sign Bridge and Cantilever)
- Installation of new high mast lighting from OR213 to 10th Street

The design and construction of this phase is/will be budgeted under Key# 19786. The Construction Phase is not currently funded, but the key design work milestones are listed below.

- 60% Plans Submittal – August 3, 2020
- 90% Plans and Specifications Submittal – March 8, 2021
- 98% Plans and Specifications Submittal – August 30, 2021
- 100% Plans Specifications Submittal – December 28, 2021
- Bid Date – April 21, 2022

I-205: I-5 – OR213, Phase 2

Phase 2 begins at the I-205 10th Street Interchange and extends to the I-205 Stafford Road Interchange. From I-205 6.59 to MP 2.73, this phase consists of:

- Adding a third NB and SB Lane to I-205
- Replacing mainline bridge pairs at Borland, Tualatin, and Woodbine
- Retrofitting and raising mainline bridge pairs at Blankenship and 10th Street
- Constructing Sound Walls A and B
- Adding ATM improvements at MP 4.1 NB at Johnson
- Constructing six sign structures (Sign Bridge and Cantilever)
- Adding ramp lighting at the I-205 Stafford Road Interchange

The design of this phase is budgeted under Key# 19786 and the construction will be budgeted under Key# 21401. The Construction Phase is not currently funded, but the key design work milestones are listed below.

- 60% Plans Submittal – November 20, 2020
- 90% Plans and Specifications Submittal – October 29, 2021



- 98% Plans and Specifications Submittal – April 22, 2022
- 100% Plans and Specifications Submittal – August 5, 2022
- Bid Date – December 1, 2022

2 Project Management

As noted earlier, the design phase of this project is fully funded under Key# 19786. Construction funding, however, has yet to be identified. As a result, on July 20, 2020 ODOT Management elected to delay significant Phase 1 design efforts beyond the August 3, 2020 Phase 1 60% Design Submittal. Similarly, Phase 2 will be delayed beyond its 60% Design Submittal. Upon identification of construction funding, it is envisioned that the project design will recommence with the intention of having construction of at least Phase 1 begin 18 to 24 months thereafter with final design, right-of-way (ROW) acquisition, utility relocation coordination, and contracting efforts concluding within that timeframe.

As such, below is a list of the major Phase 1 design tasks that are being impacted by this delay along with a description of what work will/will not continue beyond the Phase 1 60% Design Submittal.

Task 1 - Project Management

Support will be provided to ODOT Management on an as-needed basis. Minor coordination/support will be provided to ODOT reviewers during the 60% design review period. The 60% comment resolution process is suspended until recommencement of the Project; therefore, design team review, preparation of initial dispositions, and comment resolution meeting efforts will not be undertaken. A Construction Cost Index (via AMD7) will be prepared and minor support will be provided to the ODOT Tolling Team and I-205 Third Party Cost Estimator.

Task 2 - Survey

All survey work is considered complete at this time and no additional survey work is anticipated beyond July 2020.

Task 3 - Environmental Services

Approval of the City of Oregon City Land Use Permit has been obtained “with conditions”. Support will be provided to prepare responses to these City conditions on ODOT’s behalf. The Hazardous Materials Program will continue to conclusion as will efforts to complete the US Coast Guard (USCG) Abernethy Permanent Bridge Permitting process. Wall E/F noise analyses and all other permitting and environmental preparation/approval efforts are suspended.

Task 4 - Public Involvement / Public Information

Minor coordination resources are being provided to collaborate with the ODOT Public Involvement Team to assist with messaging the project design and construction delay to stakeholders and the public. All support for noise wall voting is suspended.



Task 5 - Utilities Coordination

Utility impacts assessment work has been accomplished in conjunction with the 60% design submittal. All additional conflict identification/resolution work and external utility franchise coordination, including with the South Fork Water District, is suspended.

Task 6 - Geotechnical / Geological Design Services

Draft-Final Geotechnical Engineering Reports (GERs) are being submitted in conjunction with the Phase 1 60% design package as are draft Abernethy Bridge ground improvement plans, unique spec outlines, and GDR/GDS plans. Work associated with additional CPT testing at Pier 8 is currently underway (via AMD8) and the testing results and subsequent analysis will be integrated into the Draft-Final Abernethy GER which will be submitted thereafter. All other geotechnical work is suspended, including subterranean explorations that will be needed in the future at Walls A2 and A3 via amendment.

Task 7 - Hydraulics and Stormwater

60%(+) Stormwater and Abernethy Creek Relocation Plans and Reports are included with the Phase 1 60% design package. Future design work is suspended, including the vetting of maintenance access requirements for proposed water quality facilities located beneath the Abernethy Bridge on the City of West Linn side of the Willamette River.

Task - 8 Highway Design

60%(+) Roadway/Americans with Disabilities Act (ADA) Curb Ramp/Temporary Erosion and Sediment Control (TESC) Plans are being provided with the Phase 1 60% design package. Future design work is suspended, including support to obtain ODOT approval of outstanding ADA Curb Ramp design exceptions.

Task 9 - Bridge and Structures Design

60%(+) Bridge/Wall/Traffic Structure Plans and 90% design of the Abernethy Bridge are being provided with the Phase 1 60% design package. Work associated with the Abernethy Bridge independent non-linear time history (NLTH) modeling and check to compare global seismic bridge behavior with the design NLTH model will continue in order to validate the overall retrofit strategy effectiveness. The independent design checking of the Abernethy Bridge design, including design/plans development of expansion joints, drainage, and replacement bearings, is suspended as is the post-earthquake design analysis which will be required via an amendment when design work recommences.

Task 10 - Traffic Engineering & Management

60%(+) Traffic/ATM/Illumination design, Draft Transportation Management Plan, and Draft Traffic Control Plans are being provided with the Phase 1 60% design package. Future design efforts are suspended, including all MAC and Stakeholder coordination, approvals, and Inter-Governmental Agreement (IGA) preparation efforts.



Task 11 - Design Acceptance Package (DAP)

Design support to check future City of West Linn planning and engineering documentation for future roundabouts at intersections in close proximity to I-205 along 10th Street and OR43 is suspended.

Task 12 - Roadside Development

60% Landscaping Plans and Draft-Final Corridor Aesthetics Plan (CAP) are being provided with the Phase 1 60% design package. The 60% landscaping plans have already been updated to reflect City of Oregon City Land Use Permit approval conditions. Beyond that, future design work and CAP vetting with ODOT and the Stakeholders is suspended.

Task 13 - Right-of-Way (ROW)

Appraisals for Files 1 through 11 have already been approved and uploaded into RITS. Preparation of the File 12 appraisal continues and will be posted to RITS upon approval. Vetting of maintenance access requirements beneath the Abernethy Bridge on the City of West Linn side and potential need for a 13th ROW file as identified in June 2020 White Paper is suspended. All other acquisition efforts are suspended until construction funding is identified, including any updating of appraisals that expire 6 months after being approved.

Task 14 - Plans, Specifications, and Estimate (PS&E)

Prior to assembly of the Phase 1 60% design package, a Constructability Review was performed by design team subject matter experts Kevin Parrish, Brett Schneider and Kevin Christensen. Comments received were documented and have been addressed during the Phase 1 60% design package QC/QA program. A Draft Phase 1 Construction Cost Estimate (CCE), Programmatic Construction Time Estimate (CTE), CTE, and unique spec outlines are provided with the Phase 1 60% design package as well. Moving forward, minor support will be provided to ODOT reviewers to assist them during the Phase 1 60% review, but the entire comment resolution process is suspended.

The CCE and both CTEs were prepared based upon the current design schedule which identifies Phase 1 bidding on April 21, 2022. This date is significant because it establishes when and what work can be accomplished within the first Willamette River In-Water-Work Window (IWWW) in 2022 which drives the overall schedule duration. The overall construction duration timeframe is very impactful from a cost perspective because it establishes the midpoint of construction date which determines the number of years of inflation that must be accounted for in the Phase 1 and Programmatic CCE. As such, both of these key attributes will need to be reevaluated when design work recommences.

Task 15 - Bid & Award Assistance

All work associated with bidding Phase 1 is suspended.

Task 16 - Alternative Contracting

All work associated with vetting the A+C+D bidding process is suspended.



3 Survey

3.1 Survey Control

Control for this Project was established using a fast-static network and digital level loops. Control was incorporated into the record of survey and has been recorded with the Clackamas County Surveyor's Office, as SN2019-040. Future work consists of signing the survey control plan sheets, which are completed and awaiting signature.

3.2 Survey Retracement

Centerline and ROW surveys were completed and recorded as SN2019-040 with the Clackamas County Surveyor's office. No additional work is anticipated.

3.3 Topographic Survey

Topographic surveys were performed using conventional surveying methods for the limits identified in the statement of work for the non-paved surfaces. For the paved surfaces, constrained point clouds provided by ODOT Geometronics were used to extract the line work. Oregon One-Call was used to determine the locations of underground utilities. This task is considered complete.

3.4 ROW Engineering

Twelve locations have been identified by the design team as needing rights acquired. Descriptions and sketch maps were prepared, delivered, and approved by ODOT and no additional work is anticipated.

3.5 Future Items to Address

Items not included with this Phase 1 60% submittal that will be addressed in the future include:

- There is a possibility that additional survey data will be needed in support of future design efforts and will be addressed at that time.

4 Environmental Services

4.1 Environmental Permit Summary

National Environmental Policy Act (NEPA) clearance has been obtained for the entire Project. Deviations in design from Final Design Acceptance Package (FDAP) to the 60% package are generally consistent with the findings of the NEPA clearance. The following permits and approvals have been obtained for Phase 1:

- Oregon Department of Fish and Wildlife Fish Passage Plan approval



- National Marine Fisheries Service (NMFS) approval of Federal-Aid Highway Program (FAHP)
- Archaeological and Historic Section 106 approval
- Section 4(f) Temporary Occupancy and de minimis findings
- Section 6(f) resolution
- US Army Corps of Engineers (USACE) Section 404 permit
- Department of State Lands (DSL) Fill/Removal Permit
- Department of Environmental Quality (DEQ) 401 Water Quality Certification
- City of Oregon City Type II Land Use

The following permits and approvals have yet to be obtained:

- US Coast Guard Bridge Permit – The Preliminary Navigation Determination issued July 28, 2020 confirmed the proposed horizontal and vertical navigation clearances will meet the reasonable needs of navigation. Approval or final agency determination is subject to submittal of the bridge permit application.
- City of West Linn Land Use Approval – A Pre-Application Conference was held in July 2020. Conditional approval of the land use application has been obtained.

4.2 Aesthetics/Visual

Opportunities to develop corridor character within Phase 1 have been defined within the “Corridor Character Evaluation and Guidelines” document developed by the design team; however, elements contained within Nodes 1, 2, and 3 of the “Corridor Character Evaluation and Guidelines” have not been fully vetted or implemented into the 60% plans. The Project should consider these guidelines and strive to implement them into future design work.

4.3 Culverts

Except for the Abernethy Creek culvert, there are limited small culverts running below the freeway within the limits of Phase 1 at which the proposed temporary and permanent construction work will not trigger the Oregon fish passage statute. As included in the FDAP, the Project will relocate the portion of Abernethy Creek between the culvert outfall and the Willamette River and in doing so, will eliminate existing low fish passage barriers. The Phase 1 60% design package includes no impacts in addition to those included in the FDAP design and the permits obtained for the Project.

4.4 Wetlands

Wetlands are located within the Phase 1 project limits and will be impacted by the Project. These wetlands were outside the previous Package A limits and as a result were not included in the DSL/USACE permits or the DEQ 401 Water Quality Certification. These permits will need to be modified to account for wetland impacts and an updated Post-Construction Stormwater Management Plan will need to be submitted to account for treatment of the additional impervious surface area associated with the new Project limits.



4.5 Noise

The “Noise Technical Report” (NTR) found Noise Walls 6a, 7, and 12 (included in the plans as Noise Wall C, D, and E, respectively) met the Federal Highway Administration’s (FHWA) reasonable and feasible criteria for noise mitigation within Phase 1. The Project team completed voting among those receptors that would benefit from the construction of Noise Walls 6a and 7 and found that less than half of the participants voted in favor of either wall. These walls have therefore been eliminated from further consideration.

Voting among receptors that would benefit from Noise Wall 12 (Wall E) at the Grand Cove apartment complex in Oregon City has not been completed to determine if the wall should be constructed. An additional wall noted as Wall F in the plans has been determined to meet the FHWA reasonable and feasible criteria, but analysis was not included in the NTR. At the time of public knowledge of the Project (December 20, 2018) there was no building permit application for the next phase of Grand Cove apartment complex, the beneficiary of Wall F. If ODOT determines the next phase of the Grand Cove apartment complex should be included in the NTR, an amendment to the NTR will be required.

The planimetric location of these noise walls is shown on sheets C02A, C03A, and C04A, but detailed wall plans have not been prepared for this Phase 1 60% submittal.

4.6 Endangered Species

The Willamette River and Abernethy Creek contain Endangered Species Act federally listed Upper Willamette River Chinook and Steelhead and Lower Columbia River Chinook, Coho, and Steelhead species. The Project obtained FAHP approval from NMFS on October 30, 2018 for the entire Project. Modifications to the in-water piers of the Abernethy Bridge included in the Phase 1 60% design submittal will require the FAHP Notification to be updated. While the stormwater treatment locations within Phase 1 have been modified since the FDAP, the amount and extent of treatment from stormwater runoff from the contributing impervious area (CIA) has not been modified. ODOT will need to consider if this Project design modification should be handled through a Post-Construction notification or become part of the modified FAHP Notification update.

Peregrine falcons are known to use the Abernethy Bridge for reproduction. The Project will coordinate with the Animal and Plant Health Inspection Service and the Audubon Society as design progresses to determine an appropriate strategy to avoid or minimize harm.

4.7 In-Water Work

In the Willamette River, pile driving is only permitted from July 15 through October 15. General in-water work construction is restricted to the in-water work window from July 1 through October 31 with the following exceptions:

- Oscillation of drilled shafts may occur from July 1 through December 31 except for installations within Abernethy Creek,
- Construction of the drilled shafts may occur year-round if isolated, and



- Installation of removal of barge spuds may occur year-round.

Abernethy Creek, currently located adjacent to Sportcraft Landing Park, will be relocated to accommodate the large diameter (currently designed as 12-foot-diameter) drilled shafts and columns at Pier 2 that would be placed within the existing creek alignment. There have been no design modifications since FDAP.

McLean Creek will be impacted by the expansion of the Abernethy Bridge pier footings. As permitted, the work will be isolated from the actively flowing channel if water is present.

4.8 Archaeological and Historic

There are known archaeological sites in the vicinity of the Abernethy Bridge on both banks of the Willamette River. Subsurface archaeological investigations have been completed and the State Historic Preservation Office (SHPO) has concurred with the Section 106 finding of “No-Adverse Effect” for archaeological resources.

Several buildings are determined to be eligible for listing on the National Register of Historic Places and others may be eligible for listing. These are located to the west of the Willamette River near the OR43 Interchange modifications. SHPO has concurred the Project will have “No-Adverse Effect on Historic Properties.”

The Project remains consistent with the Section 106 findings.

4.9 River Navigation

Along with maintaining access to the boat ramp at Sportcraft Landing Park, the Project is required to maintain safe passage for recreational and commercial boat traffic in the Willamette River. The Project will maintain horizontal and vertical clear zones within the main navigation channel to facilitate the passage requirements of Oregon State Marine Patrol and the US Coast Guard; however, there will be temporary and permanent modifications to the regulated navigation channel. A bridge permit amendment and construction plan approval will be required from the US Coast Guard. The USCG published a public notice of the Project on June 3, 2020; this included the minimum requirements for temporary and permanent navigation envelope. On July 28, 202 the USCG issued a Preliminary Navigation Determination which confirmed that the proposed horizontal and vertical navigation clearances will meet the reasonable needs of navigation. Additional coordination will be required to obtain the bridge permit approval once the construction approach and construction timing is solidified.

Coordination with the Oregon State Marine Patrol will be required to determine additional measures to mitigate impacts to boater safety. The Project team has recommended ODOT seek a permanent rule modification from State Marine Board (defined as any rule that is active for more than 6 months) to establish a no wake zone around the Project area. Should the Project decide to pursue a permanent rule change, the Project team should plan for a minimum of 6 months to allow for a State Marine Board determination.



4.10 Local Land Use

Oregon City has issued a conditional approval of the Type III Land Use application on July 15, 2020 for the Project components within their jurisdiction. Conditions to comply with the approval can be found in the Notice of Decision. The Phase 1 60% roadside development plans have been updated to comply with the applicable conditions of approval.

A public Pre-application Conference with the City of West Linn Planning Department was held on June 20, 2019. The City indicated that the Project will need to demonstrate code compliance as it relates to the designated Habitat Conservation Areas, Water Resource Areas, and floodplain management areas. The Project has not applied for a land use decision for the proposed actions within West Linn.

4.11 Environmental Justice

The Environmental Justice Technical Memorandum noted one block group within Phase 1 that contains a minority population that is meaningfully greater than the reference population. Project public outreach determined the only likely population within the area of potential impact with the potential to be impacted are isolated populations located in the immediate vicinity of the OR43 Interchange. The Project is not anticipated to disproportionately adversely affect environmental justice communities located near the OR43 Interchange. The finding of no disproportionate and adverse effect remain valid.

4.12 4(f) and 6(f) Resources

Jon Storm Park and Sportcraft Landing Park located on the east bank of the Willamette River are considered 4(f) resources. FHWA concurred with a 4(f) de minimis for impacts to both parks based on the anticipated project impacts being temporary, and not substantially disrupting the functions of the park. Since the signing of the 4(f) de minimis impact document, the Project concluded that a permanent easement would be required to accommodate the overhang of the Pier 3 bridge cap and the subsurface soil stabilization area. The 4(f) de minimis document should be updated to reflect these modifications.

Abernethy Bridge foundation installation efforts will require temporary occupancy for more than 180 consecutive days of a portion of Sportcraft Landing Park. Along with the protections afforded by 4(f), Sportcraft Landing Park utilized Land and Water Conservation Funds and is protected by 6(f) regulations. Coordination with both Oregon Parks and Recreation and National Park Service (NPS) determined that temporary occupancy will require a conversion. NPS has yet to make a determination of the conversion area. Coordination with Oregon City Parks Department, Oregon State Parks, and NPS will be required to resolve the conversion area.

On the west side of the Willamette River, the City of West Linn Parks and Recreation Department owns and operates West Bridge Park (a 4(f) resource) and the McLean House (a historic 4(f) and 6(f) resource). The Project will temporarily occupy West Bridge Park with a construction access road. The Project will improve the existing road through the McLean House property and utilize the road for construction personnel access for more than 180 consecutive days. Access impacts will be temporary, will provide a long-term benefit, and are unlikely to affect the limited recreational use of the property. A small, undeveloped portion of



the McLean House and Park property will be occupied for less than 180 days to facilitate crane operations necessary to set bridge beams on the OR43 exit ramp. NPS determined the use of McLean House property as proposed would not constitute a 6(f) conversion and FHWA concurred with the 4(f) Temporary Occupancy finding.

Since FDAP, the stormwater treatment strategy for the Project has been modified to include treatment elements under the Abernethy Bridge in the vicinity of Pier 9. Options for maintenance access have been provided to ODOT. Should ODOT decide to pursue a maintenance easement through the McLean House, the 4(f) and 6(f) determinations should be reevaluated.

4.13 Future Items to Address

Items not included with this Phase 1 60% submittal that will need to be addressed in the future include:

- Permits and Land Use Approvals to be obtained:
 - USCG Bridge Permit – Approval or final agency determination is subject to submittal of a bridge permit application.
 - City of West Linn Land Use Approval – The land use application is required to demonstrate code compliance as it relates to the designated Habitat Conservation Areas, Water Resource Areas, and floodplain management areas.
- Corridor character: Elements contained with Nodes 1, 2, and 3 of the “Corridor Character Evaluation and Guidelines” have not been fully vetted or implemented into the 60% plans.
- Wetlands: Wetlands outside the previous Package A limits but are now within the Phase 1 limits were not included in the DSL/USACE permits or the DEQ 401 Water Quality Certification. These permits will need to be modified to account for wetland impacts and an updated Post-Construction Stormwater Management Plan will need to be submitted.
- Noise Walls: If ODOT determines the next phase of the Grand Cove apartment complex should be included in the NTR, an amendment to the NTR will be required.
- FAHP Notification Update: Modifications to the in-water piers of the Abernethy Bridge will require an update to the FAHP Notification. ODOT will need to determine whether to seek FAHP Notification update or Post-Construction notification for revised stormwater treatment locations per the modified Project limits of Phase 1.
- Peregrine Falcons: The Project will need to coordinate with Animal and Plant Health Inspection Service and Audubon Society to determine the appropriate strategy to avoid or minimize harm to peregrine falcons known to use the Abernethy Bridge for reproduction.
- River Navigation: The Project team recommends ODOT seek a permanent rule modification from State Marine Board to establish a no wake zone around the Project area.
- 4(f) and 6(f) Resources: Should ODOT decide to pursue a maintenance easement through the McLean House, the 4(f) and 6(f) determinations should be reevaluated.



5 Public Involvement

5.1 Stakeholder Engagement and Communications

Since August 2018, stakeholder engagement has focused on three main areas:

- Ballot initiatives for park usage
- Sound walls
- RealTime sign construction (Phase 3 construction which will conclude Fall 2020)

5.2 Ballot Initiatives

The Project team provided information on two ballot initiatives for the Project's use of park space in Oregon City and West Linn. The passing of ballot measure 3-539 in Oregon City allows ODOT to make changes to the Jon Storm and Sportcraft Boat Ramp parks during and after construction as required by the Project. The passing of ballot measures 3-543 and 3-544 in West Linn allows ODOT to temporarily occupy a portion of the McLean House and Park (an area not used for events) during construction and temporarily occupy a portion of West Bridge Park during construction. All residents in Oregon City and West Linn received postcards notifying them of the opportunity to vote on the measures. An e-newsletter sent to the Project stakeholder list also provided more detailed information and linked to two fact sheets, one about the West Linn measures and one about the Oregon City measure. After a public vote on November 6, 2018, all measures passed with over 80 percent support.

5.3 Sound Wall Outreach

From February 2019 to April 2019, the Project team completed outreach to inform benefitted residents and property owners of the opportunity to vote for or against four proposed sound walls within the City of West Linn. The initial voting period took place from February 23 to March 23, 2019 for sound walls A, B, C, and D. Because walls C and D did not reach at least 50% participation by March 23, a second opportunity to vote was initiated for those two walls, from April 1 to April 19. Walls A and B passed with over 50 percent of the vote; Walls C and D did not pass. The following activities aimed to encourage voter participation: voting packets, door hangers, postcards, emails, three in-person information meetings, and a detailed webpage on the Project website that included visual simulations with and without the walls.

5.4 RealTime Sign Construction Outreach

From late fall 2019 to summer 2020, ODOT has been installing RealTime Information signs on I-205 between I-5 and OR 212 as part of the I-205 Widening and Seismic Improvements Project (Phase 3). The goal of the outreach before and during the construction was/is to proactively communicate with the public regarding the purpose and benefits of RealTime information signs and construction impacts around nighttime closures of I-205. The Project team conducted briefings for neighborhood associations and business groups in summer 2019 to let them know the work was coming. At most briefings, questions about the possible tolling of I-



205 to fund the Project were raised, and general opposition to tolling of I-205 was communicated.

Work has required nighttime closures of I-205 at five locations and included one full closure of I-205 and four directional closures. A newsletter was mailed to the Project area and the stakeholder database in mid-December 2019 to provide information about upcoming construction and guide them to the website for more information. The newsletter included the nighttime noise hotline number. Regular email notifications were sent including alerts prior to each nighttime closure and included detailed detour maps and directions. Information was also included in City of West Linn and City of Oregon City newsletters and on ODOT social media accounts.

5.5 Future Items to Address

Items not included with this Phase 1 60% submittal that will be addressed in the future include:

- The Project team has previously discussed river impacts during construction with the Clackamas County’s marine sheriff. The Project will need to continue with keeping the marine office staff informed as Project progresses.
- A “Corridor Character Evaluation and Guidelines” document was developed by the design team (NNA Landscape Architecture) that includes guidelines that will influence and guide decisions about required Project elements while remaining within the current Project budget. ODOT will lead outreach with local jurisdictions around opportunities included in the memo moving forward.

6 Utilities

6.1 Overview

Since FDAP, utility coordination has focused on utility impacts and their influence on the Project schedule near three locations: Abernethy Bridge area, Broadway Street Bridge and West A Street Bridge area, and Sunset Avenue Bridge. Additional work has been completed to update the utility conflict list and maps to account for the adjusted Phase 1 and Phase 2 limits.

Figures associated with the conflicts discussed in the following sections are available upon request.

6.2 Abernethy Bridge Area

6.2.1 Oregon City

CenturyLink Local has 2-4-inch conduits and a major concrete duct bank on the southern side of Pacific Highway that will be in conflict with Pier 1. The concrete fiber duct bank is approximately 12 feet deep and serves all of Gresham. CenturyLink Local also has underground cable along Clackamette Drive that will be in conflict with Pier 2 construction.



Relocation work may be able to take place prior to construction, but the relocation scheduling has not been confirmed.

NW Natural has a 4-1/2-inch steel gas line on the southern side of Pacific Highway that will be in conflict with Pier 1. The gas line will need to be relocated prior to construction.

Oregon City has a sanitary sewer force main that will be in conflict with the ground improvements near Clackamette Drive. The force main will need to be relocated prior to the ground improvements.

PGE provides underground service to Oregon City's lighting located under I-205. The underground power will be in conflict with the ground improvements and the construction staging area. Power will be de-energized prior to bridge construction and restored after the Project has restored the site.

6.2.2 West Linn

CenturyLink Local has a submarine cable near Abernethy Bridge Pier 6; the location has been estimated from record drawings. CenturyLink Local will abandon the submarine cable prior to construction and upgrade their existing infrastructure to accommodate the additional traffic.

PGE has underground power attached to Abernethy Bridge Pier 14, which will need to be decommissioned and reinstalled during construction. It is not currently known what the power is servicing and if a temporary power source will need to be provided. The power will need to be decommissioned prior to the construction of Pier 14 and reinstalled after the pier construction is completed.

West Linn has a 24-inch sanitary sewer located under I-205, near Abernethy Pier 8 and Pier 9, which will conflict with Piers 8 and 9 and the proposed ground improvements. The relocation of the 24-inch sanitary sewer will likely require relocating outside of ODOT ROW into the West Bridge Park land. Relocation will need to be completed prior to construction of Piers 8 and 9 and prior to ground improvements.

West Linn has a 24-inch waterline attached to the Abernethy Bridge. The design team has prepared construction sequencing plans that are intended to temporarily support the existing 24-inch waterline while its replacement is constructed in concert with the overall Abernethy Bridge reconstruction effort. In the future, these plans will need to be shared and vetted with the South Fork Water District who owns and operates this waterline.

6.3 Broadway Street and West A Street Bridges Area

CenturyLink Local has a fiber duct bank attached to the Broadway Street Bridge. The duct bank will need to be relocated to the new West A Street Bridge, after the West A Street Bridge is constructed and prior to the removal of the Broadway Street Bridge. The duration of the relocation work has not yet been provided.

NW Natural has a 6-5/8-inch high pressure gas line and a 2-inch steel gas line attached to the Broadway Street Bridge. The gas lines will need to be relocated to the West A Street Bridge, after the West A Street Bridge is constructed and prior to the removal of the Broadway Street



Bridge. The high pressure gas line cannot be shut off until the relocation is complete. Relocation work is expected to take 3 months to complete.

CBX, Comcast, and PGE are aerial between the Broadway Street and West A Street bridges. The poles are located outside of ODOT's ROW. PGE may need to install a taller pole and/or relocate the pole to provide additional clearance for drilling for the rock cut and blasting. Relocation work can be completed prior to construction.

NW Natural's pressure reducing station located between West A Street and Broadway Street is not expected to have direct impacts. The blasting plan needs to be reviewed to determine mitigation requirements.

The American Tower cell tower and building located between West A Street and Broadway Street is not expected to have direct impacts or need a temporary tower during blasting. However, this cannot be confirmed until the utility has reviewed the Project's blasting plan. The Project's blasting plan will need to limit the particle displacements to 0.01 inch near the electronics and microprocessor housed at the base of the tower.

West Linn has an 8-inch waterline attached to the West A Street Bridge, which can be shut off during construction. The waterline will be reinstalled on the West A Street Bridge, after the new bridge is constructed.

MCI has initiated planning to expand their network within the Project area. One option considered was to cross the river on the Abernethy Bridge. Another route included crossing on the West A Street structure. Currently, the Project includes extra conduits on the West A Street Bridge to accommodate future crossings, for which MCI requests four 2-inch conduits.

6.4 Sunset Avenue Bridge Area

CBX and Comcast are aerial diagonally across the bridge from the north western side of the bridge to the south eastern side of the bridge. The aerial cable will be in conflict with the removal of the existing bridge. An additional pole will be in conflict with the construction of Chestnut Street. The likely relocation will be to the northern side of the existing bridge and be completed after any necessary clearing, prior to the removal of the existing bridge and construction of Chestnut Street.

NW Natural has a 2-inch steel line on the existing bridge that will need to be relocated to the new bridge during construction. NW Natural can temporarily shut-off the line during construction between May and October, but the line must remain active during the winter months from November to April. The relocation will need to take place after the new bridge is constructed and prior to the removal of the existing bridge. If the relocation is scheduled to take place during the winter months, the project will be delayed in removing the existing bridge, until the relocation and abandonment is complete. If the relocation were to take place outside of the winter months, it can take place concurrently with bridge removal. The duration of relocation work has not yet been provided.

West Linn has a 6-inch waterline hanging on the existing bridge that will need to be relocated to the new bridge. The new bridge will need to be constructed prior to the relocation. The waterline can be shut off during construction, thereby allowing for the relocation work to be



completed concurrently with project construction. The duration for relocation work has not been provided.

West Linn has a 10-inch sanitary line on the existing bridge that will need to be relocated to the new bridge. The relocation will need to take place after the new bridge has been constructed and prior to removal of the existing bridge. The sanitary line will need to remain active until the relocation work is completed. The duration for relocation work has not been provided.

It would be preferable for the utility relocations off the existing bridge and to the new bridge to take place during construction, after subgrade grading is complete, and prior to paving. This may require including a utility phase to the project schedule. The duration of a utility phase has not yet been determined.

CenturyLink Local's previous indication of underground facilities under the existing northwestern bridge abutment and across I-205 was incorrect. They recently provided information that they have six 3-1/2-inch conduits in the northern sidewalk of the existing structure. CenturyLink will need to relocate to the new structure prior to removing the existing facilities.

6.5 Future Items to Address

Items not included with this Phase 1 60% submittal that will be addressed in the future include:

- Utility notices, conflict maps, and conflict lists will be finalized and sent to the utilities when the Project restarts.
- Relocation plans have not been received from the utilities as most utilities are waiting for the Phase 1 60% design plans and allocation of construction funding prior to designing their relocations. Proposed utility relocation locations have not been assessed, and will need to be addressed once received from the utilities.
- For future submittals, the current utility basemap will need to be updated to show ODOT utilities installed with construction of the Regional Active Traffic Management portion as existing infrastructure.
- The Sunset Bridge design will need to be updated to accommodate six 3-1/2-inch or larger conduits for CenturyLink's relocation.

7 Geotechnical

7.1 Bridge Replacement and Retrofit

Preliminary geotechnical investigations were performed for the Abernethy, Main Street, West A Street, and Sunset Avenue Bridges. Geotechnical preliminary design recommendations were then developed to support the seismic retrofit and widening of Abernethy Bridge and Main Street Bridge, and the replacement of West A Street and Sunset Avenue Bridges. Additional geotechnical investigations were performed and draft geotechnical reports developed to



support the Phase 1 60% design submittal via AMD6. Outlines of the ground improvement specifications including jet grouting and deep soil mixing were also developed.

For Abernethy Bridge, since FDAP, the bridge retrofit strategy has seen a couple of significant changes to the approved strategy, driven primarily by the extent of the subsurface soil conditions. Additional geotechnical explorations completed via AMD6 provide a more complete picture of the nature of the soils beneath the bridge. Ground improvements around Pier 8 have been developed based upon this additional information in addition to the previously identified improvements between Piers 2 and 3 and between Piers 8 and 9, due to the extent and amount of liquefaction and lateral spreading.

For the Main Street Bridge, no additional geotechnical explorations were performed as part of AMD6. No major changes have been made to the design as a result.

For the West A Street Bridge, no additional geotechnical explorations were performed during the Phase 1 60% design. The foundations for Bents 2 and 3, however, have changed from drilled shafts to spread footings for the Phase 1 60% design.

For the Sunset Avenue Bridge, an additional geotechnical boring was performed as part of the AMD6 program. Based on this information, the bridge abutments foundations have changed from drilled shafts to spread footings for the Phase 1 60% design submittal.

7.2 Retaining Walls and Highway Embankment

A geotechnical investigation was performed for Retaining Wall A1 and a portion of Retaining Wall A3. A preliminary geotechnical report was developed to support the FDAP submittal. Retaining Walls A2 and an additional portion of A3 were identified during development of the 60% design. To date, the geotechnical explorations called for in the Geotechnical Design Manual have not been completed. Information from nearby borings has been used for the design and plan sheet development up to this point in the design. A draft wall geotechnical report has been developed to support the Phase 1 60% design submittal. An additional geotechnical investigation will be required for Retaining Walls A2 and A3 to secure final design approval from ODOT in the future.

7.3 Rock Cut and Blasting

A geotechnical investigation and design evaluation for the rock cut was performed during FDAP design. Preliminary design recommendations were developed to support the FDAP submittal, but a geotechnical report was not provided as part of FDAP submittal. As part of AMD6, additional geotechnical investigations were performed. Base on the testing results, no major changes to the preliminary geotechnical recommendations for the rock cut are recommended. A draft geotechnical report for the rock cut is included as part of the Phase 1 60% design submittal along with a draft outline for blasting-related specifications.

7.4 Stormwater Rock Excavation

No geotechnical investigation work has been performed for the stormwater rock excavation purposes. A geotechnical evaluation was performed post FDAP design level based on the stormwater alignments identified in the 60% design submittal using existing available boring



information. Stormwater rock excavation considerations are included in the geotechnical report for Retaining Walls and Highway Embankment as part of the Phase 1 60% design submittal.

7.5 Sound Walls

Sound walls E and F are under consideration along SB I-205 in the vicinity of Main Street and to the east. Field explorations and geotechnical report have not been developed in support of these walls at this time.

7.6 Traffic Structures

Geotechnical field explorations were not performed during the FDAP design level. Geotechnical investigations for the traffic structures were performed as part of the AMD6 investigation program. A draft traffic structures geotechnical report is included with the Phase 1 60% design submittal.

7.7 Future Items to Address

Items not included with this Phase 1 60% submittal that will be addressed in the future include:

- All draft geotechnical reports will be finalized based on ODOT review comments.
- Development of geotechnical specifications including rock cut and blasting, jet grouting, and deep soil mixing will be required.
- Review of the final design plans and geotechnical related special provisions including drilled shaft, driven piles, micropiles, and retaining walls will be performed.
- Additional geotechnical investigations will be required for:
 - Retaining Wall A2 and A3;
 - Sound Walls E and F; and,
 - Stormwater rock excavation.

8 Pavement and Striping

8.1 Overview

Pavement Design for both Phase 1 and 2 was finalized April 30, 2019 by ODOT Pavements. ODOT Pavements is also slated to provide the specification language for the cement treated base or roller compacted concrete. Coordination with ODOT Pavements is needed to finalize the location of longitudinal concrete joints between Sunset Avenue and 10th Street. The new traffic control strategy does not utilize crossovers south of 10th Street, so staged construction is needed. To minimize the need of 10 feet+ of temporary throwaway asphaltic concrete widening, the joint has been placed in the middle of the “B” lane. Discussion is needed



regarding the acceptability of this approach and any additional detailing that may be required. Placing the joint on a lane line would require significant and costly temporary throwaway work and temporary retaining walls.

8.2 Future Items to Address

Items not included with this Phase 1 60% submittal that will be addressed in the future include:

- Additional details to be added include striping plans with callouts for legends, delineators, etc. Between the 60% and 90% submittals confirmation is needed regarding the type of striping needed, particularly if blackout striping will be required on continuously reinforced concrete pavement (CRCP) sections and if the ACP and CRCP sections will have the same or different striping types.
- Direction is required from ODOT to determine if continental crosswalks are the preferred treatment on OR99E and OR43.

9 Hydraulics and Stormwater

9.1 Stormwater

The stormwater design has been updated from FDAP to reflect the updates in the Project limits. Stormwater conveyance, water quality, and detention have been designed from OR213 to 10th Street. The Project will result in 63 acres of CIA that will require water quality treatment and detention where required. Approximately 61.5 acres of the CIA will be directly treated and 1.8 acres of non-CIA impervious area will be treated in order to offset the CIA that will be unable to be treated.

9.1.1 Oregon City

Three of the water quality facilities located in Oregon City connect to City stormwater systems and are required to be sized using the City's stormwater BMP Sizing Tool. Two of these facilities propose detention. The facilities will also meet ODOT design requirements.

To address comments from the Oregon City land use permit completeness review, Water Quality Facility #3 was revised to provide detention for the new impervious area in addition to water quality for the CIA.

The Project proposes to add and replace 500 feet of sidewalk and curb ramps along Main Street as part of the Main Street Bridge retrofit. It is not anticipated that this work will trigger stormwater management requirements.

9.1.2 Abernethy Bridge

The Abernethy Bridge design has progressed which subsequently introduced stormwater design complications. Drainage pipes cannot be designed to span the expansion joint at Pier 7, therefore deck drainage must be designed to limit the amount of surface flow that passes over



the expansion joint at this pier. This has resulted in the need to drop runoff beneath the bridge deck at Piers 8 and 10. Because of the bridge grade, it is not possible to convey this water back to the facilities at the OR43 interchange. Two facilities have therefore been conceptually designed to treat this stormwater runoff before outfalling into the Willamette River.

There is currently no official permanent maintenance access beneath the Abernethy Bridge in the City of West Linn. Access will be required to perform maintenance on these new treatment facilities beneath the bridge. There are multiple options for gaining a permanent access and the design team presented alternatives to ODOT in the memorandum titled “Maintenance Access Beneath Abernethy Bridge In West Linn” dated June 25, 2020 for vetting. At this time, a decision has not been made regarding how to provide maintenance access under the bridge.

At the east end of the bridge, stormwater pipes cannot be designed to penetrate the bridge abutment and the proposed pipes now convey the bridge deck runoff down the pier at the north and south sides of Pier 1. This resulted in redesigned water quality facilities within the 99E off/on ramp interchange.

Bridge ground improvements have been added on both sides of the river at Abernethy Bridge Piers 3, 8 and 9. The ground improvements propose to create a cementitious soil mixture in the entire area of the improvements up to the surface. These improvements have impacted the layout of stormwater facilities beneath the bridge because of the grid-like pattern of the borings with depth of over 40 feet that are injected with cement. On the Oregon City side, this work will likely require replacement of the existing 36-inch diameter stormwater outfall located in this area.

9.1.3 Future Items to Address

Between 60% and 90%, the design team will refine the stormwater design to provide more clarity in the following areas:

- Underground detention facility design will be further developed.
- Stormwater Management facilities maintenance access.
 - Subteam Meeting with maintenance to develop an access plan for each facility.
 - Access road grading plans.
- Bioslope stability concerns (also discussed in Highway Design Section).
- Bioslope design exception.
- Design of stormwater management facilities under Abernethy Bridge on the West Linn side of the river and providing maintenance access to facilities.
- Design of stormwater planter on Clackamette Drive.
- Diversion manholes and water quality outlet structures will have elevations and diameters of outlet pipes assigned.
- Addressing impacts from ground improvement areas and column footing retrofits.
- Preparing the pipe data sheets.



- Preparing a temporary drainage plan for the CRCP overlay area and Abernethy Bridge.
- Depending on when the Project resumes, there may be new design standards from ODOT, FAHP, DEQ, West Linn and/or Oregon City that the Project design may need to be updated for.
 - The largest potential for significant impacts would be within the OR43 interchange area. West Linn is updating their design standards to require treatment of a larger water quality design storm event.

Items not included with this Phase 1 60% submittal that will be addressed in the future include:

- Determine maintenance access requirements under the Abernethy Bridge.
- Obtain input from ODOT maintenance on how facilities behind guardrail should be designed to accommodate access.
- Confirm the type of water quality facilities to place beneath Abernethy Bridge in West Linn. Currently bioretention ponds are proposed; however, ground improvement restrictions may lead to investigating the use of proprietary structures.

9.2 Hydraulic Modeling

The design of the Abernethy Bridge substructure has been revised since FDAP as pier size and shape has been refined. Numbers of columns for Piers 8-10 has also been revised. Hydraulic models for the floodplain analysis and the scour analysis have been revised to model the latest bridge geometries. The Project still results in a no-rise condition and the modeled maximum scour depths are similar to the depths reported at the FDAP submittal.

To meet Oregon City's municipal code, there is a proposed cut area northeast of Jon Storm Park to offset the proposed fill in the floodplain along the NB lanes of I-205.

9.2.1 Future Items to Address

Items not included with this 60% submittal that will be addressed in the future include:

- Additional details regarding constructability will be included in the Abernethy Creek restoration sheets.
- The shaft cap for the southern column at Abernethy Bridge Pier 8 will require an equal volume of cut within the West Linn floodplain. This will need to be coordinated with the geotechnical and bridge design to determine how this can best be accomplished. Most of the floodplain above ordinary high water within ODOT right-of-way is within the ground improvement areas.
- Depending on when the Project resumes, a new effective Federal Emergency Management Agency (FEMA) floodplain may be in effect and the model may need to be revised.
- Modeled pier scour depths need to be incorporated into the bridge stability modeling to verify that scour counter measures are not required.



- Any additional revisions to the bridge substructure may require revisions to the hydraulic models.

10 Highway Design

10.1 Overview

Between the FDAP submittal in September 2018 and this Phase 1 60% design submittal, the Project limits have been adjusted from OR43 to the new Project limits at the 10th Street Overpass. Three general purpose lanes in each direction will now extend to 10th Street. The additional SB lane will become an exit only lane at 10th Street, and the third NB lane will be added as the "A" lane immediately north of the 10th Street Overcrossing. The Project will absorb the previous Package B design elements between OR43 to the north half of the 10th Street interchange. The 10th Street Bridge retrofits remain in Phase 2. Phase 1 absorbed major design elements including Broadway Bridge demolition, West A and Sunset Bridge replacements, rock blasting/excavation between West A and Sunset. The overall footprint of the previous Package B work items remain largely unchanged, they are merely added to Phase 1.

The pavement design was finalized in April 2019 by ODOT pavements. The sections represented in the Phase 1 60% design submittal have been updated to reflect that final pavement design memo.

Interchange geometries have been finalized for the OR99E, OR43, and 10th Street interchanges as well as the entrance and exit ramps to the NB viewpoint. At OR99E, the alignment and profile have been optimized to retain as much existing pavement as possible by using a grind/inlay with targeted widening. This will save material and construction costs and better allow for traffic staging without long-term closures.

At Jon Storm Park, the existing parking lot will be occupied by the Contractor as a staging area for a large portion of the construction duration. As such, the on-street parking on Clackamette Drive needs to be completed at the beginning of construction to provide additional public parking. Additionally, Clackamette Drive is planned for full reconstruction and realignment due to construction impacts. The shared use path between OR99E and Clackamette Drive will be extended further to the north to provide connectivity.

Three walls have been designed within the OR99E interchange area. The retaining wall between the NB entrance ramp and Main Street has been refined to accommodate the dual lane entrance ramp configuration and realigned NB exit ramp. The realignment of Clackamette drive requires two previous unaccounted for retaining walls. First, the addition of on-street parking on the east side requires a retaining wall to protect a historic stump and monument tree. Secondly, the reconstruction of Clackamette Drive now requires a retaining wall to protect the Abernethy Creek outfall adjacent to Jon Storm Park.

New impacts to Main Street have been identified through discussions with the City of Oregon City and refinement of the Main Street Bridge footings. New curb, sidewalk, and curb ramps have been added under the Main Street Bridge and extend to the south to provide connectivity to existing facilities.



Replacement of curb, sidewalk, and guardrail along both sides of OR99E has been added. The construction of the substructure for Abernethy Bridge will impact existing facilities and they will need to be reconstructed and brought up to standard.

10.2 Future Items to Address

Items not included with this 60% submittal that will be addressed in the future include:

- All ADA ramp design and details will be updated to the current applicable ODOT standards at the time the Project recommences. The Project team is aware that the current ADA details shown in the BC sheets of the plans require design refinement to meet the new ODOT standards and preferences due out shortly after submittal of this 60% package. All curb ramps in the Project either meet current ODOT design standards, have approved design exceptions, or have design exceptions in the ODOT review process awaiting approval.
- Installation of drainage pipe across SB I-205, just north of Main Street Bridge. If open trenched (as expected), need to include CRCP repair details.
- Main Street Bridge widening – cross slope transition / match.
- Full extent of Abernethy Bridge column footing retrofits and excavation limits, specifically along both sides of OR99E. Pavement removal limits will need to be fully defined.
- Noise Walls E and F – design details. Currently referring to Standard Drawings, will need closer evaluation of shoulder/side slope to adequately detail the benching and foundation construction.
- Bioslope construction in the stone embankment section, which is required to construct the NB auxiliary lane, needs further evaluation for stability and constructability.
- Design refinement/acceptance/coordination with the City of West Linn for dead-ending Broadway on the north and south sides due to the bridge removal.
- Design refinements in the entrance/exit to the Viewpoint. Refinements may include low profile mountable curb traffic separators in the gore area to mitigate areas where cross-slope in the gore is at the limit of ODOT standard.
- The Project proposes a 9-inch CRCP overlay between West A Street and 10th Street. While the majority of the design profile is within 1/4-inch above the existing grade, there are areas where the differential approaches ± 1 inch. Further coordination with Construction and Pavements is necessary to determine the appropriate level of profile grinding, leveling course ACP, or nominal thickening of the CRCP section in these areas.
- Vetting of the tall single slope barrier details shown in the BB series of the plan sheets with ODOT Roadway Staff.
- Coordinate with Drainage designers to develop a temporary drainage strategy for the CRCP overlay.
- Identification of stone embankment locations on the profile sheets.



- The Project notes and estimate are based on the 2018 specification book per the direction of ODOT management. Notes, bid items, specifications, etc. will be updated to the current applicable specifications when the Project is restarted.
- Coordination with Phase 2 to finalize overlap between the two projects.
- Additional Project specific details:
 - Gore grading details for entrance/exit ramps
 - Grading details for Sunset/Chestnut intersection
 - Refinement of the Contaminated Media disposal sites and details
 - Refinement of the material handling site details for the rock cut spoils in the ODOT maintenance yard
- Voting for the noise walls needs to take place to determine their inclusion.
- A determination on the aesthetic treatments on noise walls, retaining walls, and structures.
- Finalize the paving limits on the OR99E SB Exit Ramp (“C2” Line). The limits can remain as is or extend to the ramp terminal. The guardrail run is being replaced so there is an opportunity for pavement width adjustments. Extending to the ramp terminal will require a design exception for lane and shoulder widths.
- The Project has submitted and received formal approval for eight design exception request. Twelve are currently in ODOT review or awaiting ODOT approval. Once the Project is restarted, obtaining approval on the remaining design exceptions is going to be one of the top priorities before progressing the design.
- The Contract Plans Manual (CPM) is currently in a state of development, thus the current Project drafting standards are a mix of direction from the CPM and the old Contract Plans Development Guide. At the restart of the Project, the drafting standards will be brought up to the current standards.

11 Bridges/Structures

11.1 Abernethy Bridge

Since FDAP, the bridge retrofit strategy has undergone significant changes to the approved strategy, driven primarily by the extent of the subsurface soil conditions. Additional geotechnical explorations were completed as part of the AMD6 investigation program and provides a more complete picture of the nature of the soils beneath the bridge. These issues have been presented to ODOT Bridge in a series of technical coordination meetings since FDAP. Specifically, the extent and amount of liquefaction and lateral spreading these soils will experience was determined, which lead to the following changes to the retrofit strategy:

- Ground improvements were needed around Pier 8, in addition to the previously identified improvements between Piers 2 and 3 and between Piers 8 and 9.



- The use of an outrigger bent at Pier 1 has been replaced with individual foundation retrofits and a new column on drilled shaft to support the widening.
- The size of the foundation elements (drilled shafts) supporting the outriggers had to be increased in some cases, and they had to be strengthened through the use of permanent structural steel casing at some piers.
- The bearings for the entire bridge had to be replaced with Isolation Bearings to enable the bridge to survive the movements in the substructure from the soil lateral spreading effects.
- The lateral spreading in the foundation soils will lead to a permanent lean to the bridge piers on either side of the river. The soils movement is so dramatic that it will cause the columns of the bridge to lean toward the river permanently after the Cascadia Subduction Zone earthquake. The condition has been evaluated in design and the bridge is anticipated to be safe for use in this condition after this earthquake.
- Due to the complex behavior of the soils and isolation bearings, the bridge had to be analyzed with a Non-linear Time History Analysis, which was previously only going to be used as a quality control evaluation method to verify the design
- In-water construction for Piers 3 through 6 require cofferdams. Subsequent to FDAP, cofferdam constructability was evaluated and conventional systems were found to be infeasible. A system that is perched above the riverbed and attached to the drilled shafts was identified. This type of system is considerably more costly than the traditional sheet pile system driven into the riverbed.

These factors combined to create a more complex seismic retrofit and an increase in the construction cost for this bridge.

11.2 Other Bridges

The designs for the Main Street, Broadway Street, West A Street, and Sunset Avenue Bridges are essentially complete, with minor plan sheet development yet to be completed. These design tasks have proceeded with no substantive change in design philosophy from the FDAP phase.

11.3 Retaining/Sound Walls

The outrigger bent retrofit at Pier 2 of the Abernethy Bridge led to the realignment of Clackamette Drive toward the river, which in turn lead to a retaining wall along Clackamette Drive to contain the embankment from spilling into Abernethy Creek.

Also related to work on the Abernethy Bridge, parking beneath the bridge along Clackamette Drive for Jon Storm Park was impacted, resulting in the need for additional parking along Clackamette Drive. The additional parking required a retaining wall on the east side of the road to protect the historic Abernethy Elm Stump.



The Main Street retaining wall, located on the outside of the I-205 N/B Exit Ramp to OR99E, is more complicated than anticipated due to this wall spanning over the Abernethy Creek pile culvert that passes beneath the wall.

11.4 Geotechnical

Seismic foundation movement at Pier 8 showed the behavior of this portion of the bridge as unacceptable, with excessive ground and pier movements to the south of the bridge. The ability of the bridge to be opened to traffic after the Cascadia Subduction Zone was questionable, which led to the need for ground improvements at this location to stabilize this foundation.

11.5 Future Items to Address

Items not included with this 60% submittal that will be addressed in the future include:

11.5.1 Abernethy Bridge

Due to the extremely complex behavior of this bridge, the independent check is a critical step to verifying the retrofit strategy and the changes described above. Of the retrofit components, the outrigger bents are the most significant to the successful retrofitting of this bridge to survive an earthquake and be usable afterward. The outriggers are supported on drilled shafts that are larger and deeper than any constructed in the country. Their structural composition, making use of concrete filled steel tubes, is also unique for the size of the shafts. Each of these factors was evaluated to the extent possible during the design phase to this point. However, these features point to the importance of the following:

- A constructability meeting with the construction industry, geotechnical consultants, and structural design staff to evaluate the design and identify risk mitigation measures to minimize construction issues.
- The structural design of the outrigger bents is critical to verify that each of these components will perform as designed and planned. ODOT has authorized a portion of this work, the independent check is verification of the NLTH Analysis and the associated design forces and displacements from that analysis. This step will verify that the bridge behavior in an earthquake has been accurately captured in the design process. The structural capacity of the various elements, however, will not be completed at this time.
- Due to the complexity of the bearing replacement with isolation bearings, the detailed design and plans for this work, including modifications to the superstructure and supports are underway but are incomplete at this time.
- Pier 6 is the location of the majority of the thermal expansion and contraction of the bridge. A multi-directional expansion joint will be installed to enable the bridge to be opened sooner after a Cascadia Subduction Zone event. This type of joint will require modifications to the bridge on either side of the joint. The design and plans for this work has not started.



- There are a number of plans and details for secondary features of the bridge that are not included in this submittal for expansion joints, lighting, slope paving.

Design of substructure elements is essentially complete with some ongoing reinforcement detailing to be completed at some piers along with the addition of design and plans for bearing pedestals that has not started. Approximately 4 additional design NLTH analysis cases will be completed shortly after the Phase 1 60% submittal to confirm the design of updated pier strengthening measures at Pier 8.

A bridge design deviation for the use of permanent casing on drilled shafts as a structural measure is in progress. ODOT Bridge has provided feedback on a draft design deviation and the design team is in the process of developing the requested additional information to support the design deviation. An updated design deviation will be available after the Phase 1 60% submittal. ODOT Bridge has indicated the design deviation will be approved.

Updates to the Project specific Bridge Seismic Retrofit Design Criteria are in progress and will be completed after the Phase 1 60% submittal. These updates are needed to incorporate the approach for evaluating the bridge in its deformed shape after the earthquake and address comments from ODOT Bridge reviewers on a previous version.

11.5.2 Geotechnical

Retaining Walls A2 and A3 were identified later in Project development. As a result, the geotechnical investigations called for in the Geotechnical Design Manual was not included in the scope of work so this work has not been completed. In the meantime, information from nearby borings has been used for the design and plan sheet development. These investigations will be required to secure final design approval from ODOT.

Ground improvement design around Pier 8 is currently based on limited borings at the pier for foundation design and NLTH input parameters. A more extensive subsurface investigation program has been completed for Piers 2 and 9, but not yet for Pier 8. This investigation is not required for design, but for better subsurface characterization to reduce construction claim potential. The draft Abernethy Geotechnical Report is anticipated to be delivered about one month after the Phase 60% submittal.

12 Sign Structures

Structures have been progressed since FDAP as follows:

12.2 New Cantilever Structures

Six new cantilever support structures for new SB and NB guide signs will be added on the mainline at MPs 8.55, 8.00, 7.70, 7.41, .21 and 6.70. A spread footing foundation is proposed and reduced where possible due to rock removal at some locations.



12.3 New Structure Mounts to Existing Bridges

- MP 11.04 – Existing Bridge #09757: Replace guide signs. New frames are proposed. The sign support frames will be mounted to the edge and underside of the new concrete deck overhangs.
- MP 8.64 – Existing Bridge #097403: Replace SB and NB guide signs. New frames are proposed. The sign support frames will be mounted to the edge and underside of the new concrete deck overhangs.

12.4 New Sign Mounts on Existing Sign Bridges

The existing sign bridge located just north of OR213 was evaluated for the proposed sign configuration.

- MP 10.63 – Existing Sign Bridge #19256: It is anticipated that all the steel vertical supports attaching the guide sign to the truss sign bridge will be replaced along with the new signs. The existing sign bridge was evaluated for the proposed sign configuration and has sufficient capacity without structural retrofit or replacement. New signage will be mounted on new steel vertical frames mounted to the existing sign bridges
- MP 11.13 SB – Existing Sign Bridge #9816D: It is anticipated that all the steel vertical supports attaching the guide sign to the truss sign bridge will be replaced along with the new signs. The existing sign bridge was evaluated for the proposed sign configuration and has sufficient capacity without structural retrofit or replacement. New signage will be mounted on new steel vertical frames mounted to the existing sign bridges.
- MP 8.3 NB and SB – New Sunset Bridge (number to be determined)
- NB and SB VAS signs on the existing Sunset Avenue overcrossing. The new Sunset Avenue Bridge will be a steel girder bridge with a cast-in-place concrete deck. The sign support frames will be mounted to the edge and underside of the concrete deck overhang. The electrical conduits will be mounted to the underside of the deck overhang and concrete wingwalls.

12.5 Future Items to Address

Items not included with this 60% submittal that will be addressed later include:

- All details will be finalized by 90% Advanced Plans. Most designs are at an advanced stage currently in the 60% plans.

13 Traffic Engineering

13.1 Signals

Signal Plans have progressed in accordance with the ODOT Traffic Signal Design Manual and now display greater level of details and completeness. Intersection signal plans include design



modifications for pedestrian push buttons and exit ramp detections at the OR99E interchange signals and refined temporary detections for temporary work zone condition and permanent signal overall design at the OR43 SB ramp terminal. The four Phase 1 ramp meter plans for the NB and SB ramps of the OR99E interchange, the SB OR43 ramp, and the NB 10th Street ramp were modified based on the updated roadway design information. The signal plans also include ramp meter removal plans for the two I-205 NB entrance ramps from OR43.

The following preliminary signal operations approval request forms were submitted to Tiffany Slauter, ODOT Region 1 Traffic Operations Engineer, on July 22, 2020:

- Preliminary Signal Operations Review (PSOR) forms for modifying the four ramp meters noted above.
- PSOR forms for the removal of the two I-205 NB entrance ramps from OR43.
- The Preliminary Signal Operations Design form for installation of a temporary signal on OR43 at the I-205 SB exit-ramp

These request forms are required by ODOT to accompany with the 60% Signal Plans.

13.1.1 Future Items to Address

Items not included with this 60% submittal that will be addressed in the future include:

- Update to the forms submitted on July 22, 2020 and final approvals when the Project design resumes.
- Cabinet Prints for signals and ramp meters

13.2 Signing

Updates have been made to signing sheets since FDAP as follows:

13.2.1 LA Sheets

- Added new overhead ½ mile, 1-mile and 2-mile advance exit direction guide signs and a new overhead exit direction sign at the exit gore for 10th Street exit ramp in the SB direction of I-205. The 2-mile advance exit direction sign will be mounted on the West A Street Bridge whereas the other three signs will be mounted on new cantilever structures. The placement of the new cantilever for the exit direction sign at the exit gore is strategically determined to accommodate the future third travel lane extension through the 10th Street interchange to Stafford Road Interchange under Phase 2 (Package B2) so that the new cantilever will not need to be removed or replaced with construction of Phase 2.
- Added Variable Advisory Speed (VAS) signs currently under construction as part of Phase 3 (Package C). They are shown as existing on the signing plans.
- Added signs at the proposed OR43/I-205 NB exit ramp roundabout.
- Incorporated ODOT's comments from FDAP and regarding the Freeway Guide Sign Roll Map.



13.2.2 LB Sheets

- Completed the Sign Legend LB sheets with over 230 signs. The FDAP LB sheets had only 48 signs.

13.2.3 LC Sheets

- Added the Sign and Post Data Table.

13.2.4 Future Items to Address

Items not included with this 60% submittal that will be addressed later include:

- Investigate proper pedestrian and bike wayfinding signage for the new OR43 multi-use path.
- Evaluate sign supports for signs 82 and 152. Update quantities and cost estimate.
- Verify if the following signs have potential utility conflicts: Sign 25 (sheet LA04), Sign 135 (sheet LA09), Sign 164 (LA12), and Sign 173 (LA13).
- Develop specifications.

13.3 Illumination

Since FDAP, the following changes have occurred:

- Circuits, conduit sizing, and wiring were added to permanent lighting plans.
- Light poles have been adjusted to meet current design.
- Lighting infrastructure within girders were found to be in good shape; therefore, luminaires only will be replaced with LED.

13.3.2 Future Items to Address

Items not included with this 60% submittal that will be addressed in the future include:

- Analysis for temporary lighting will be finalized to address confirmed traffic control staging.
- Temporary lighting plans to be updated and designed for conflict areas only per discussion with ODOT. Previous approach prior to current level of temporary traffic control staging was to develop lighting along the complete corridor to essentially keep the same level of lighting throughout construction.
- Temporary lighting concept across the Abernethy Bridge will be barrier mounted. Update and coordinate temporary barrier mounted illumination details with structural designers for crossing the Abernethy Bridge.
- Confirm navigation lighting replacement luminaires and internal girder luminaire replacements.
- Coordinate on permanent lighting footings on Abernethy Bridge structure.



- Need to understand what will be required in rock areas to install luminaire footings.
- Revisit wall and light pole locations. Lights need to be on freeway side of walls.
- Size the electrical service panel breakers.

14 Traffic Control

14.1 Traffic Control Overview

Between the FDAP submittal in September 2018 and this Phase 1 60% design submittal, the Project limits have been adjusted from OR43 to the new Project limits at the 10th Street Overpass Structures. Because of this, the entire TCP strategy for the I-205 mainline needed to be entirely reworked since the previous method of using crossovers south of 10th Street was no longer viable. This submittal contains a full accounting of the staging and phasing required to construct all Project elements.

Temporary widening between Sunset and 10th Street is needed in both the NB and SB directions. Approximately 4-feet of temporary widening is need for NB and 7-feet for SB to allow for the construction of the CRCP overlay and account for the required lane and shoulder widths.

The Project assumes the following work items and associated closures/detours:

- Broadway Bridge demolition – full mainline closure required for removal of the structure.
- West A Bridge replacement – single lane with eastbound traffic only during the first phase of the replacement.
- Viewpoint – closure during CRCP operations for up to 3 weeks.
- Rolling slowdowns for rock blasting will impact NB and SB mainline as well as local roads. Current preferred blasting window of Sunday morning is from 9:00 AM to 11:00 AM. For estimating purposes the Project has assumed the contractor will be able to perform 2 blasts and associated RSMs within that window.
- 10th Street NB entrance/SB exit ramp – Single weekend ramp closures for each direction to construct CRCP overlay.

14.1.1 Future Items to Address

Items not included with this 60% submittal that will be addressed in the future include:

- The currently plans are intended to show the overall construction strategy. Alignment data, additional warning signs, cross sections, etc. will be added in the future once ODOT has confirmed the overall strategy.
- Subject to discussion and confirmation by ODOT staff:
 - Pinned vs. Unpinned temp barrier – The staging plans assume barrier placed on the existing pavement will be pinned. There is an underlying 8-inch CRCP slap below the



2-inch ACP wearing course. Once new pavement sections are placed the strategy uses unpinned barrier as to not damage the new pavement surface.

- CRCP longitudinal joint location – To minimize the throw-away temporary widening the staging plans assume a CRCP longitudinal joint in the middle of the “B” lane is acceptable. Based on earlier conversations with ODOT Pavements this would be acceptable with some additional joint detailing. Design team needs to confirm this with ODOT Pavements.
- Pinned temp barrier on Abernethy Bridge – Need to coordinate with Bridge and Traffic Control Plan (TCP) unit on an acceptable method to pin barrier to the bridge during construction.
- Median width – Plans use 6-foot-wide medians (2-foot shoulders with 2-foot-wide barrier).
- OR43 NB to 205 NB entrance ramp will be at a limited width of 16 feet for up to 6 weeks.
- Additional details for Sunset/Chestnut staging will be supplied at 90%.
- Coordination with ODOT about the Viewpoint interaction with crossovers and exit ramps is needed.

14.2 Detour Plans

The Detour Plans from FDAP included only a preliminary detour concept for the closure of OR43 between the I-205 NB and SB ramp terminals. The 60% Detour Plans now include signed detours for the following:

- Individual closure of each ramp at the OR43 interchange (Exit 8) and OR99E interchange (Exit 9).
- Closure of the I-205 NB exit ramp to OR213 and OR213 to I-205 SB entrance ramp.
- Closure of the I-205 SB exit ramp to 10th Street and 10th Street to I-205 NB entrance ramp.
- Closure of I-205 between OR213 and OR99E interchanges.
- Closure of I-205 Abernethy Bridge between OR99E and OR43 interchanges.
- Closure of I-205 between OR43 and 10th Street interchanges.
- Closure of Main Street underneath I-205, just north of OR99E.
- Closure of OR99E between the I-205 NB and SB ramp terminals.
- Closure of OR43 between I-205 NB and SB ramp terminals.
- Closure of West A Street.

The detour plans also include I-205 NB and SB weekend full regional directional detours during the directional Abernethy Bridge Transverse Launch.



14.2.1 Future Items to Address

Items not included with this 60% submittal that will be addressed in the future include:

- The Project will need to determine the duration of full closures of I-205 needed for the demolition of the full span Broadway Bridge and develop a detour plan. This will require re-engagement of the Mobility Advisory Committee to coordinate road and ramp closures.

15 Roadside Development

15.1 Landscaping

Since FDAP, the Roadside Development plans have developed to respond to Project demands. Various permit requirements have spurred a number of the additions:

- At the Abernethy Bridge, the JPA submitted to the USCG and USACE included riparian restoration planting requirements. The design team's response was to develop in coordination with ODOT staff an appropriate mix of species, avoid creating a future maintenance conflict by keeping trees away from the bridge, and adjust the plantings to meet the conditions created by a large overhead structure. The planting plans and details, plant lists, and seeding lists have been reviewed and approved by ODOT staff members and the permit has been submitted.
- To meet the Land Use Permit requirements of Oregon City, the Project added planting areas, plant lists, and planting details. In areas where the Project overlapped with Oregon City's Natural Resource Overlay Districts (NROD), mitigation plantings proportional to the Project disturbance were added. A number of required street areas along local streets that had Project impacts were added. This permit has been submitted and has received conditions of approval. Those conditions of approval have been reviewed and incorporated into the Project.
- When the Project boundaries shifted and Package A became Phase 1, a few areas were added that will require additional planting to meet the permit requirements of West Linn and WES. These Habitat Conservation Areas (HCAs) for Phase 1 consist of disturbances to wetland buffers that need to be replanted. The bulk of the HCAs are in Phase 2, with the largest area at the Tualatin River, which is why the design is not further developed. Plant lists and plans were just starting to be developed for this permit, with detailed placeholders on the plan sheets showing the first draft of the planting areas to be planted. As a placeholder, the HCAs are shown to be planted with the NROD planting mix to provide an approximate quantity for the 60% submittal. The planting details and plant list will need to be reviewed by Magnus Bernhardt and Ken Sargent (ODOT).

As the demands of planting and establishing for permitting were reviewed and discussed with ODOT staff, the request was made to review including some form of irrigation and extend the landscape establishment period to 5 years to correlate with the observation and reporting requirements of the JPA. It was determined that after Phase 1 and 2 were submitted for 60% review, an effort would be made to separate the Roadside Development into a separate contract for construction that would contract directly with a contractor for installation and



establishment of the landscape materials. To support this future effort, known irrigation equipment was added to the survey, but the feasibility and logistics of developing functional irrigation systems needs to be determined and the length of contract established.

Local jurisdictional needs at the Abernethy Bridge were considered beyond riparian restoration planting requirements for the JPA. Jon Storm Park, in Oregon City, will be heavily impacted during the construction of the bridge and used for staging. It is understood that the recreational facilities must be returned to their pre-construction state at this location. Construction staging will also be performed on the West Linn side of the Abernethy Bridge. The City of West Linn has requested to keep the access road and flat staging area underneath the bridge clear of planting for their future recreational needs post-construction. The 60% landscape plans reflect both of these desires.

As Project elements were developed and shared, it became clear that a strategy needed to be developed to guide decisions surrounding the aesthetics of the Project corridor. After a few meetings with ODOT staff and the Project team, a general strategy emerged that the Project would seek to maintain the overall character of the corridor using ODOT standards and replacing or enhancing the landscape material impacted by the Project. Further, the Project would not add elements for the sole purpose of an aesthetic enhancement; rather coherent choices would be made about required Project elements with a goal of retaining the positive characteristics of the Project corridor. A "Corridor Character Evaluation and Guidelines" memo dated July 14, 2020 was submitted to ODOT to confirm that their comments have been adequately addressed.

15.2 Future Items to Address

Items not included with this 60% submittal that will be addressed in the future include:

- The 60% plans are intended to provide a base level of planting along the corridor; any additional landscape development would need to be requested by a local City and come with an IGA for ongoing maintenance.

16 Right-of-Way

16.1 Overview

ROW acquisition needs remain the same as from FDAP: 12 ROW Files consisting of Fee acquisitions, Permanent Easements and Temporary Easements. Six of the acquisitions are from private property owners, three from the City of West Linn, two from City of Oregon City, and one from the DSL. Appraisals have been completed on all files except for the DSL/Sportcraft Landing - File 12 which is currently underway. Once the File 12 appraisal has been completed and approved by ODOT, all of the appraisals for the Project will go on the shelf and ROW activities will be suspended until construction funding has been identified.

In support of the File 12 appraisal, a marina specialty professional from Ballard Marine Construction hired to prepare an impact assessment specialty report. This report analyzes the current condition and functionality of the existing Sportcraft Marina improvements and



provides a cost to cure for proposed dock modifications that will allow the marina to stay accessible and operational throughout construction. From that report, there are no longer any relocation needs anticipated on this Project. The property owner will be obligated to remove all marina improvements from ODOT's acquisition area prior to the I-205 construction.

The City of Oregon City - File 11 6(f) conversion process is underway; a decision by National Parks on the conversion area is needed before ROW can move forward with the 6(f) appraisal process.

16.2 Future Items to Address

Items not included with this 60% submittal that will be addressed in the future include:

- Property specific construction obligation language will be developed and approved by ODOT Construction prior to and during negotiations which will be implemented in later plan sets.

17 Project Estimate and Specifications

17.1 Overview

In February 2020, ODOT and the design team underwent a cost reconciliation exercise. At that time, Joe Wolf (ODOT) reviewed the October 2019 Phase 1 and Phase 2 CCEs and analyzed percentage (%) based items, unit costs based on the given quantities, and below the line items such as inflation and construction engineering costs. In parallel, ODOT performed an independent cost estimate based on HDR's quantities. Based on these exercises, the design team updated the CCEs and have parlayed that input into the Phase 1 and Programmatic CCE prepared with the Phase 1 60% design submittal. Based on ODOT recommendations, major cost estimating assumptions that were implemented between October 2019 and February 2020 and have been carried forward include:

- Inflation has been increased from 3% to 3.5%
- The CE estimate was set at 15%
- Anticipated Items have increased from 1% to 3%
- A 4% Gross Receipts Tax was added below the line
- A 1% Carbon Cap Tax was added below the line

Since the February cost reconciliation exercise, several major items have been revised/updated. Specifically:

- TP&DT was decreased from 5% to 3% due to the completeness of the TCP and staging plans.
- Major temporary items for the Abernethy Bridge (temporary work bridge and access, transverse launch, etc.) previously carried in the 0500s were moved to the 0200s with the other temporary items.



- The amount of ground improvements at the Abernethy Bridge have increased due to expanded field investigations. Additionally, the large volume of spoils (60k CY +/-) from that work item will need to be treated as hazardous material and properly disposed.
- Costs for two sound walls (vote pending) were added as well as two additional retaining walls on Clackamette Drive.
- Below the line Contingency was decreased from 12.5% to 10% due to an increased level of design and confidence.

The estimate and provided CTE assume a midpoint of construction in 2024. At the chosen inflation rate from the cost reconciliation of 3.5%, each year of delay to the Project increases the Project cost by \$10,000,000 due to inflation alone. This figure does not include any increases to unit costs that may take place between now and the time the Project is bid.

Per the direction of ODOT Management, the Project uses the last iteration of the 2018 Bid Item list. In the future, bid items will be updated to the current version when the Project is restarted with 12 months of inflation removed for every year bid prices have been accounted for. Since the Design Verification Package, the Project has used Construction Variability Contingencies for every individual bid item to account for uncertainty in the quantity or unit cost. The practice has been maintained and percentage have been adjusted accordingly. Unknown contingencies continue to be carried below the line.

17.2 Future Items to Address

Items not included with this 60% submittal that will be addressed in the future include:

- Boilerplate specification markups are not provided at the direction of ODOT management for the Phase 1 60% design submittal. In lieu of boilerplate, the design team has provided and an outline of unique specifications the Project will need to prime ODOT counterparts and spec owners of the special design elements included in the Project that are not covered by ODOT specifications.

18 Construction Time Estimate

18.1 Overview

The CTE has been revised significantly from FDAP to reflect the August 2019 reorganization of the Project phasing as well as to account for design updates within the new Project limits.

As noted earlier, the bid date has been established as being April 21, 2022. Based on this date, there will not be sufficient time to complete Pier 3 within the first in-water work window due to the shortened lead time and requirements to minimize impacts to the adjacent Jon Storm Park. As such, Piers 5 and 6 are now shown first in the in-water pier sequence, followed by Piers 3 and 4, which are now assumed to be installed the following season during the second in-water work window. Additionally, this bid date impacts the timeline for the modifications to the Sportcraft Marina in the vicinity of Pier 3. The existing marina will need to be modified to remove conflicts prior to construction, which presents a risk to the Project. To understand the



risk that the property owner does not fulfill their ROW obligations to modify the marina prior to construction, a separate schedule has been prepared assuming the Contractor will have to make these modifications.

Work items immediately west of the OR43 interchange including the West A and Sunset Bridge replacements, Broadway Bridge demolition, and rock cut are still phased with the OR43 roundabout such that Broadway Demolition cannot commence until the OR43 roundabout has been constructed and functioning.

As the design is still a work in progress, the CTE includes assumptions based on similar experience on other projects and/or based on discussions with the Project team. As the design is progressed further, additional changes may need to be incorporated into the CTE.

18.2 Future Items to Address

Items not included with this 60% submittal that will be addressed in the future include:

- Several assumptions are to be confirmed/addressed:
 - Will the 24-inch waterline under the existing Abernethy Bridge be kept in service during work?
 - Will Sportcraft Marina work be performed under a separate contract or through this contract to mitigate risk?
 - Will permit conditions associated with 4F and 6F properties remain unchanged?