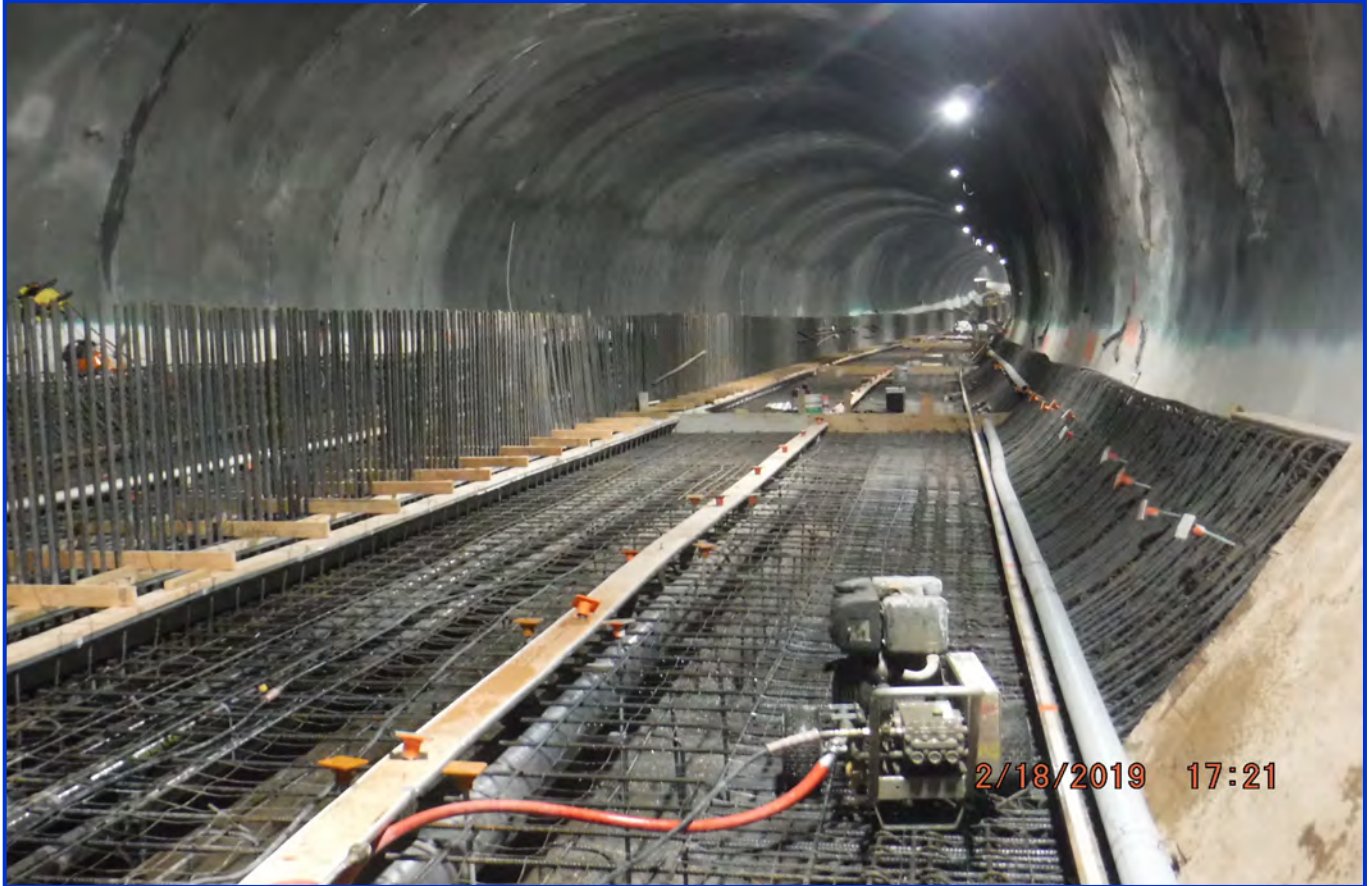


Progress Report

Link Light Rail Program



Downtown Bellevue Tunnel - rebar work and tunnel invert completed and awaiting concrete pours

February | 2019





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SOUND TRANSIT LINK LIGHT RAIL CURRENT SERVICE AND FUTURE EXTENSIONS

Link Light Rail

Future service:

- Everett–Seattle–West Seattle
- Redmond–Seattle–Mariner
- Ballard–Seattle–Tacoma
- Issaquah–Bellevue–South Kirkland
- Tacoma Dome–Tacoma Community College

In service:

- Univ. of Washington–Angle Lake
- Tacoma Dome–Theater District

○ New station
 P Added parking
 ○ Existing station
 H Existing parking
 ○ Provisional light rail station



Link Light Rail Program Overview



University Link Extension (U-Link): This project is a 3.15-mile light rail segment which is located entirely underground with tunnels traveling from Pine Street, under the I-5 freeway to an underground station at Capitol Hill, continuing north beneath SR 520 and the Montlake Cut to an underground station on the University of Washington campus, near Husky Stadium. The Sound Transit Board adopted the baseline capital budget of \$1.76B in July 2008. Revenue Service began on March 19, 2016.

Northgate Link Extension: The University of Washington Station (UWS) to Northgate project is a 4.3-mile extension of light rail from the UWS north under campus via twin-bored tunnels to an underground station at NE 45th Street continuing to an underground station at NE 65th Street and via tunnel, retained cut and elevated sections to Northgate. Revenue Service date is September 2021. The Sound Transit Board adopted the baseline capital budget of \$2.13B originally in 2012 and revised the baseline budget to \$1.89B in October 2015.

Lynnwood Link Extension: Lynnwood Link Extension extends light rail 8.5 miles to Snohomish County along I-5 from Northgate Mall in Seattle to the Lynnwood Transit Center, with four new light rail stations. The configuration includes at-grade, elevated, and retained cut/fill alignment. The Sound Transit Board adopted the baseline capital budget of \$2.77B on May 24, 2018.

East Link Extension: East Link Extension expands light rail to East King County via I-90 from Downtown Seattle to the Overlake Transit Center area of Redmond, with stations serving Rainier Avenue/I-90, Mercer Island, South Bellevue, Downtown Bellevue, Overlake Hospital, the Bel-Red corridor, Overlake Village and the Redmond Technology Center (formerly Overlake Transit Center). Revenue service to the Redmond Technology Station is forecast for June 2023 with a tunnel route in Downtown Bellevue. The Sound Transit Board adopted the baseline capital budget of \$3.67B in April 2015.

Downtown Redmond Link Extension: This project builds a new light rail from the Redmond Technology Station to downtown Redmond by 2024. Light rail will travel along SR-520 with two new stations in southeast Redmond, at Marymoor Park, and downtown Redmond. The ST Board adopted the baseline capital budget of \$1.53B on October 25, 2018.

West Seattle and Ballard Link Extensions: The West Seattle & Ballard Link Extensions are voter-approved projects under the ST3 Plan. West Seattle segment includes 4.7 miles of light rail from downtown Seattle to West Seattle's Junction neighborhood. It includes five light rail stations. The route will run primarily on elevated guideway with a new rail-only bridge over Duwamish River. The Ballard segment includes 7.1 miles of light rail from downtown Seattle to Ballard's

Market Street area. It includes nine light rail stations. The route will run through a new downtown Seattle rail-only tunnel, elevated guideway, and a rail-only bridge over Salmon Bay. The current budget for these projects through completion of Preliminary Engineering is \$286M.

South 200th Link Extension: S. 200th Link Extension consists of a 1.6-mile extension of the light rail from the SeaTac/Airport Station to an elevated station at South 200th Street. The Project was developed through a design-build delivery strategy. The Sound Transit Board adopted the baseline capital budget of \$383.2M in 2011. Revenue Service began on September 24, 2016.

Federal Way Link Extension: The Federal Way Link Extension adds approximately 7.8 miles of light rail from the Angle Lake Station in the City of SeaTac to the Federal Way City Center. The extension generally parallels SR 99 and I-5 freeway with stations at Kent/Des Moines, South 272nd Star Lake park-and-ride and the Federal Way Transit Center. The Sound Transit Board adopted the baseline capital budget of \$2.45B on September 27, 2018.

Hilltop Tacoma Link Extension: The Hilltop Tacoma Link Extension is a 2.4 mile extension of the existing Tacoma Link system from the Theater District in downtown Tacoma to the Hilltop neighborhood. The extension will travel at-grade along Stadium Way, North 1st. Street, Division Avenue, and Martin Luther King Jr. Way. The Sound Transit Board adopted the baseline capital budget of \$217.3M in September 2017.

Tacoma Dome Link Extension: This project will extend light rail from the Federal Way Transit Center in the City of Federal Way to the Tacoma Dome area in the City of Tacoma a total distance of approximately 9.7 miles, generally along or near I-5 with three elevated stations at South Federal Way, Fife, and East Tacoma, and one at-grade/retained station at the Tacoma Dome. The budget for this project through completion of Preliminary Engineering in June 2019 is \$125.7M.

Link Operations and Maintenance Facility East: This project located in the City of Bellevue, includes a 160,000 square foot operations and maintenance facility that will maintain, store and deploy and expand light rail fleet, including seven LRV service bays, a LRV wash facility and storage for up to 96 light rail vehicles. The ST Board adopted the baseline capital budget of \$449.2M in July 2016.

Light Rail Vehicle (LRV) Fleet Expansion: This project includes the design, manufacturing, inspection, testing and delivery of 152 low floor LRVs for service requirements of Northgate, East Link and Lynnwood Link Extensions. The Sound Transit Board adopted the baseline capital budget of \$733M originally in 2015 and revised the baseline budget to \$740.7M in April 2017 to allow for the procurement of 30 additional vehicles.

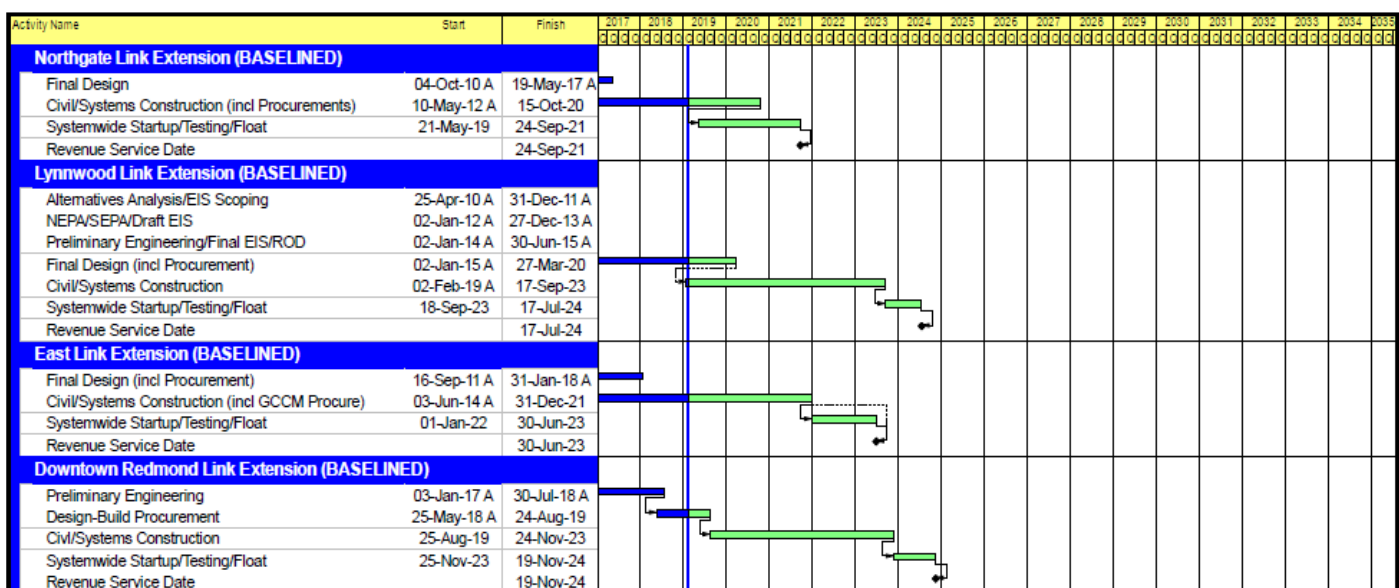
Program Budget

Project figures for active projects are represented in millions below.

project	Authorized Project Allocation	Commitment to Date	Incurred to Date	Forecast to Complete	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
University Link Extension	\$1,756.0	\$1,518.6	\$1,509.3	\$35.5	\$1,554.1	\$202.0
Northgate Link Extension	\$1,899.8	\$1,646.8	\$1,382.8	\$200.6	\$1,847.4	\$52.4
Lynnwood Link Extension	\$2,771.6	\$451.0	\$334.5	\$2,320.7	\$2,771.6	\$0
East Link Extension	\$3,677.2	\$3,043.3	\$1,740.1	\$633.9	\$3,677.1	\$0
Downtown Redmond Link Ext.	\$1,530.0	\$40.0	\$27.3	\$1,490.0	\$1,530.0	\$0
West Seattle and Ballard Link Ext.	\$285.9	\$33.0	\$27.5	\$252.9	\$285.9	\$0
South 200th Link Extension	\$383.2	\$332.2	\$328.9	\$0.5	\$332.6	\$50.6
Federal Way Link Extension	\$2,451.5	\$112.2	\$93.2	\$2,339.4	\$2,451.5	\$0
Hilltop Tacoma Link Extension	\$217.3	\$183.6	\$50.5	\$33.7	\$217.3	\$0
Tacoma Dome Link Extension	\$125.7	\$14.0	\$8.8	\$112.0	\$125.9	\$0
Link O & M Facility: East	\$449.2	\$357.3	\$197.5	\$91.9	\$449.2	\$0
LRV Fleet Expansion	\$740.7	\$655.7	\$88.6	\$85.0	\$740.7	\$0
Total Link	\$16,288.2	\$8,387.5	\$5,789.0	\$7,596.0	\$15,983.5	\$305.0

Program Schedule

Schedules for active projects are summarized below.

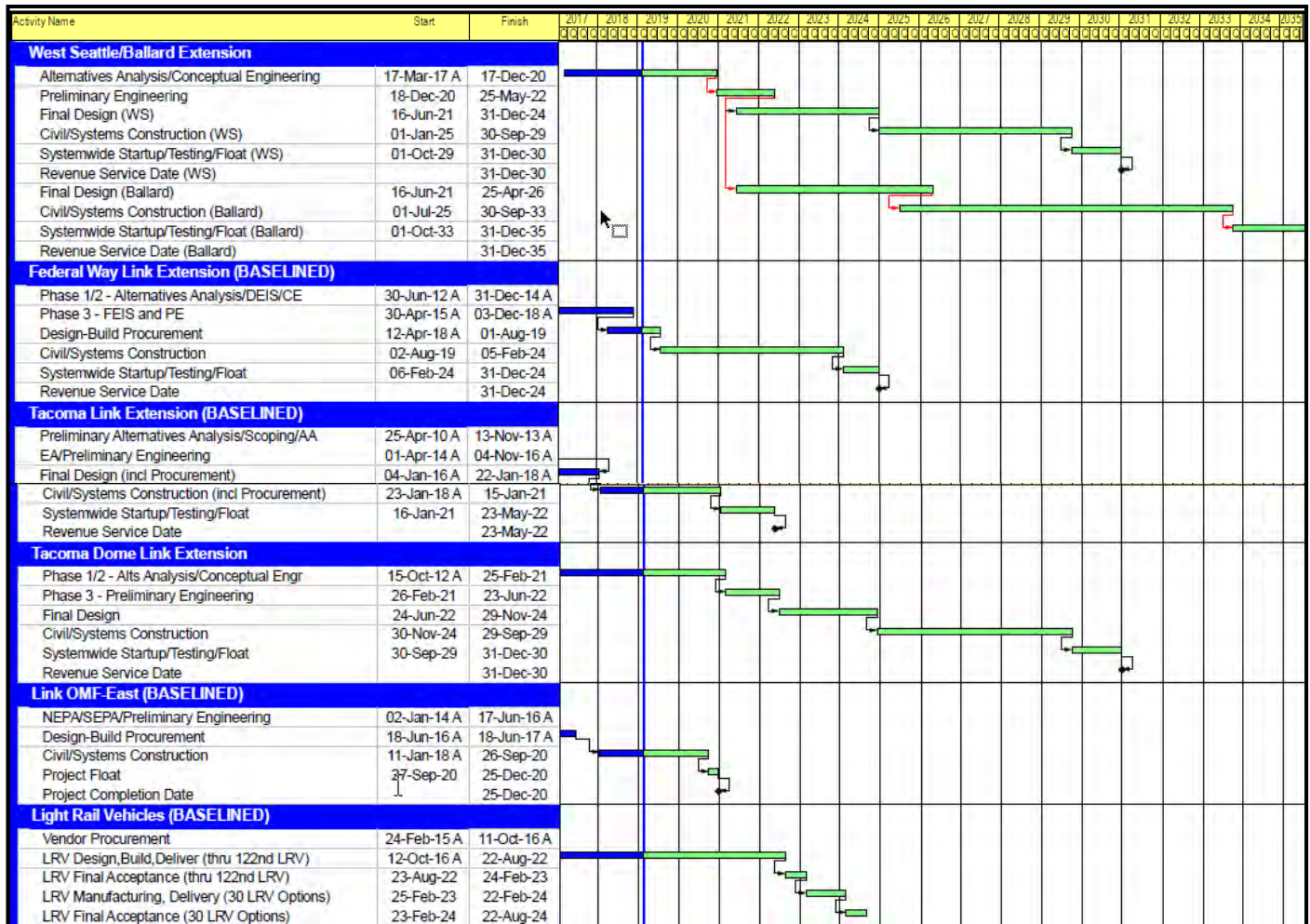


Link Light Rail Program Overview



Program Schedule

Schedules for active projects are summarized below.



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Link Light Rail University Link Extension

Project Summary

Scope

Limits 3.15-mile extension of the Initial Segment light rail transit (LRT) system from the Pine Street Stub Tunnel (PSST) in downtown Seattle to University of Washington (UW) campus near Husky Stadium.

Tunnels Two twin bored tunnels. Two contract segments: U220 starts at Husky Stadium, continues beneath SR 520 and the Montlake Cut south to the Capitol Hill underground station. U230 commences at Capitol Hill Station and proceeds south under the I-5 freeway to the PSST.

Stations Two underground center platform stations – Capitol Hill (U240) and University of Washington (U250). U240 is approximately 65' underground with three station entrances. U250 is about 100' below ground, with three station entrances and connections to the UW campus by a pedestrian bridge.

Systems 27 LRV; direct fixation tracks, signals, traction electrification, and SCADA communications

Budget \$1.948 billion including finance cost (capital subtotal of \$1.756 billion)

Schedule Revenue Service began March 19, 2016



Map of Project Alignment

Key Project Activities

- Certificate of Occupancy (C of O): University Link continues to operate under a temporary certificate of occupancy until all permit requirements are fully met. All C of O for stations has been issued. The request for system wide C of O for the University Link has been submitted and is awaiting Seattle Fire Department's determination.
- Continue negotiation with Capitol Hill Station Contractor on commercial issues.
- Miscellaneous follow-on commitments and restoration work remains including but not limited to the following: Additional UW escalator work, Decommissioning of monitoring wells, restoration of the Systems staging area on Pine Street, power reliability and vibration monitoring and other follow up on various minor commitments from the Record of Decisions.
- Before and After Study continues to progress. FTA's recommended "on to off" data collection to expand the survey data to more accurately reflect total ridership were incorporated. Study to complete by summer 2019.

Project Cost Summary

The project cost is summarized below in two cost categories. The first table summarizes costs in accordance with Sound Transit's budget Work Breakdown Structure (WBS). The second table summarizes costs in accordance with the FTA's Standard Cost Categories (SCC) format. The figures in both tables are shown in millions.

University Link's projected Estimated Final Cost (EFC) including Finance Cost remains at about \$1.75B. As the project inches closer to close out, the timing for expenditure becomes less predictable. This period, the project expenditure came in at about \$780K increasing the total direct expenditure to just under about \$1.51B (Finance Cost excluded). Current activities continues to pertain to close out and miscellaneous follow on work. The construction EFC continues to be approximately \$1.02B. This trend continues to hold as the project is substantially complete with only miscellaneous follow on scope and commercial issues remaining. The Total Incurred to Date for the Construction Phase is approximately \$992M and LRV is at about \$99.2M. Cost of LRV repairs were excluded from this project and tracked independently.

Cost Summary by Phase

Project Phase	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$115.23	\$113.55	\$83.49	\$83.15	\$88.20	\$25.35
Preliminary Engineering	\$24.39	\$24.26	\$24.26	\$24.26	\$24.26	\$0.00
Final Design	\$77.94	\$90.31	\$87.96	\$86.77	\$89.17	\$1.14
Construction Services	\$68.53	\$94.81	\$86.88	\$86.57	\$88.71	\$6.11
3rd Party Agreements	\$18.65	\$18.65	\$11.65	\$11.31	\$13.23	\$5.42
Construction	\$1,180.00	\$1,158.18	\$998.70	\$991.56	\$1,021.84	\$136.34
Vehicles	\$103.91	\$103.91	\$99.19	\$99.19	\$101.91	\$2.00
ROW	\$167.33	\$152.33	\$126.43	\$126.43	\$126.79	\$25.54
Capital Total	\$1,755.97	\$1,756.01	\$1,518.56	\$1,509.25	\$1,554.10	\$201.90
Finance Cost	\$191.71	\$191.71	\$191.71	\$174.87	\$191.71	\$0.00
Project Total	\$1,947.68	\$1,947.72	\$1,710.27	\$1,684.13	\$1,745.81	\$201.90

Totals may not equal column sums due to rounding of line entries.

Construction commitment under the SCC format remains relatively unchanged at about \$985M. Construction SCC expenditures to date is just above \$980M this period mostly attributed to other miscellaneous follow on work project level commitments prior to close out. Total capital cost incurred to date including non-construction cost (SCC 60 thru 90) now just under \$1.51B or about 86% of total project budget scoped (Finance Cost excluded). Total project cost incurred to date at the end of this period including Finance Cost is at \$1.68B. The financing cost incurred to date is about \$175M. University Link EFC continues to be projected to close out with at least \$200M under budget excluding financing cost.

Link Light Rail University Link Extension



Cost Summary by SCC

SCC Element	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
10 Guideway & Track	\$626.83	\$450.46	\$456.45	\$456.03	\$461.61	(\$11.15)
20 Stations	\$366.33	\$350.75	\$346.01	\$343.52	\$353.10	(\$2.34)
30 Support Facilities: Yards, Shops	\$7.01	\$24.83	\$23.55	\$23.47	\$24.80	\$0.03
40 Sitework & Special Conditions	\$59.03	\$67.39	\$57.43	\$54.92	\$56.77	\$10.62
50 Systems	\$69.63	\$116.42	\$102.17	\$101.85	\$102.40	\$14.02
Construction Subtotal (10 - 50)	\$1,128.82	\$1,009.85	\$985.61	\$979.78	\$998.67	\$11.18
60 Row, Land, Existing Improvements	\$167.33	\$126.60	\$126.43	\$126.43	\$125.77	\$0.83
70 Vehicles	\$99.76	\$100.16	\$99.87	\$99.87	\$100.16	\$0.00
80 Professional Services	\$306.41	\$346.58	\$306.63	\$303.17	\$318.02	\$28.56
90 Unallocated Contingency	\$53.65	\$172.81	\$0.00	\$0.00	\$11.48	\$161.33
Capital Total (10 - 90)	\$1,755.97	\$1,756.01	\$1,518.53	\$1,509.25	\$1,554.10	\$201.90
100 Finance Cost	\$191.71	\$191.71	\$191.71	\$174.87	\$191.71	\$0.00
Project Total	\$1,947.68	\$1,947.72	\$1,710.24	\$1,684.13	\$1,745.81	\$201.90

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Link Light Rail Northgate Link Extension

Project Summary

Scope

Limits The Northgate Link Extension consists of 4.3 miles of light rail extending from the University of Washington to Northgate.

Alignment The extension begins at UW Station, continues under UW campus, then north to a portal at NE 94th Street, then transitioning to an aerial structure north to Northgate Mall.

Stations U District Station (UDS)
Roosevelt Station (RVS)
Northgate Station and Parking Garage

Systems Signals, track electrification, and SCADA communications

Phase Construction

Budget \$1.899 Billion

Schedule Revenue Service: September 2021



Map of Project Alignment

Key Project Activities

- **Tunnel, Cross Passages, and Maple Leaf Portal (N125):** The Construction Management team continues to work with JCM to close remaining Changes and Claims. Safety & Quality Management has accepted and closed final reports for N125.
- **U District Station/UW Campus (N140):** In the north and south areas of the construction project, crews continued their focus on systems rooms for access turnover to the N830 Systems construction team.
- **Roosevelt Station (N150):** Hoffman crews commenced installation of glass masonry units at stair #9 and metal wall framing at stair #10. Crews continued framing walls, rough-in mechanical, electrical, and plumbing (MEP) in walls, hanging drywall, mud, taping and painting throughout the station. Construction crews backfilled utility trenches along 65th Street and 12th Avenue.
- **Northgate Station (N160): Guideway Substructure/Superstructure:** Punchlist is 78% complete. **Station:** Crews placed footing for Escalator pit on the north side of 103rd. **Garage:** Punchlist corrections continue with additional water-proofing done at an exterior of Stair 1.
- **Trackwork (N180):** Crews continue to work on minor punchlist items in work areas between the U of Washington and U District stations. At the U District Station platform level, crews completed the final alignment of the slabs. Between the U District and Roosevelt Stations, crews continue final line and grade work on rails. Direct Fixation track is complete through the Roosevelt platform.
- **Environmental:** Environmental and Safety Site Walks conducted on N160.

Closely Monitored Issues

- **N140 U District Station:** The first north emergency fan is scheduled to deliver on Mar. 2nd. Additional emergency fans are scheduled to be delivered and set March 8th.
- **Southbound Tunnel near Roosevelt Station:** A sinkhole was discovered above the SB tunnel on Feb. 19th near 12th Ave NE and NE 62nd St. The void was immediately filled with controlled density fill (CDF), and the area made safe. Services to nearby homes were not affected, and daily monitoring has confirmed there has been no further movement. Five verification boreholes will be bored to within 5 feet of the crown of the tunnel to further evaluate the issue.

Project Cost Summary

The project cost is summarized in two cost categories. The first table summarizes cost in accordance with Sound Transit's budget Work Breakdown Structure (WBS). The second table summarizes the project in accordance with the FTA's Standard Cost Category (SCC) format. The figures in both tables are shown in millions.

The Estimated Final Cost (EFC) for the project as of this reporting period is \$1,847.4 M, which is \$52.4 M below the current project budget, unchanged from last period. This period, approximately \$25.1 M was incurred, bringing the total project expenditures from \$1.35 B to \$1.38 B. Project commitments are at \$1.65 B with all major construction projects well underway.

Cost Summary by Phase

Project Phase	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$144.9	\$144.9	\$68.4	\$68.4	\$135.5	\$9.4
Preliminary Engineering	\$15.1	\$15.1	\$15.1	\$15.1	\$15.1	\$0.0
Final Design	\$132.2	\$132.2	\$120.5	\$116.1	\$134.7	\$(2.6)
Construction Services	\$118.3	\$118.3	\$103.1	\$78.5	\$110.4	\$7.9
3rd Party Agreements	\$11.8	\$11.8	\$9.8	\$6.9	\$11.4	\$0.4
Construction	\$1,343.0	\$1,343.0	\$1,229.2	\$997.2	\$1,334.4	\$8.7
ROW	\$112.3	\$112.3	\$100.7	\$100.7	\$106.0	\$6.3
Project Contingency	\$22.2	\$22.2	\$0.0	\$0.0	\$0.0	\$22.2
Total	\$1,899.8	\$1,899.8	\$1,646.8	\$1,382.8	\$1,847.4	\$52.4

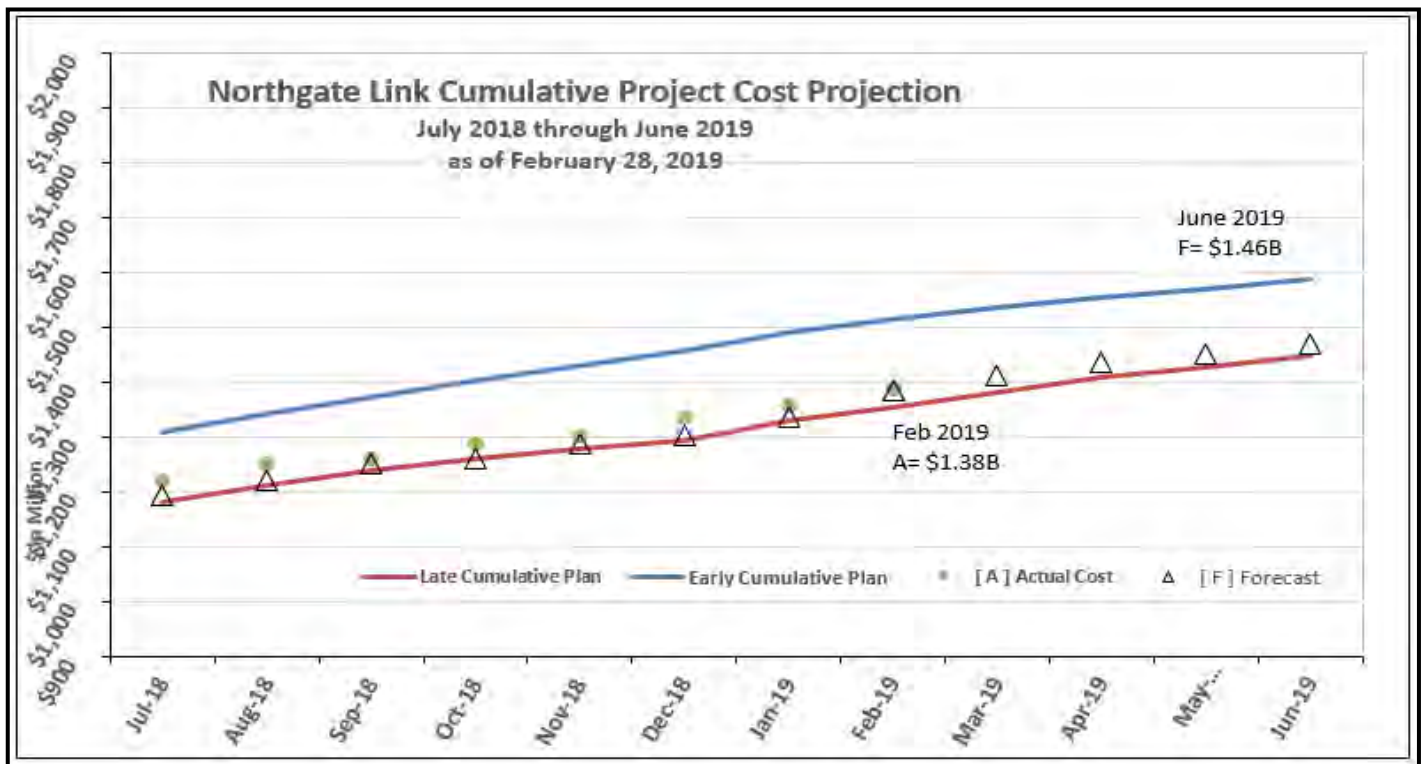
Cost Summary by SCC

SCC Element	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
10 Guideway & Track	\$595.6	\$548.2	\$512.8	\$487.6	\$533.9	\$14.3
20 Stations	\$376.1	\$425.1	\$423.7	\$314.7	\$448.2	\$(23.1)
30 Support Facilities: Yard, Shop	\$5.3	\$6.1	\$6.5	\$6.2	\$6.5	\$(0.3)
40 Sitework & Special Conditions	\$140.8	\$230.7	\$168.2	\$148.6	\$201.0	\$29.7
50 Systems	\$110.9	\$98.5	\$107.5	\$31.3	\$119.5	\$(21.0)
Construction Subtotal (10 - 50)	\$1,228.7	\$1,308.6	\$1,218.7	\$988.5	\$1,309.0	\$(0.5)
60 Row, Land, Existing Improvements	\$119.9	\$110.9	\$100.7	\$100.7	\$105.5	\$5.4
80 Professional Services	\$420.7	\$431.6	\$327.4	\$293.6	\$427.4	\$4.2
90 Contingency	\$130.4	\$48.7	\$0.0	\$0.0	\$5.4	\$43.3
Total (10 - 90)	\$1,899.8	\$1,899.8	\$1,646.8	\$1,382.8	\$1,847.4	\$52.4

Project Cash Flow Projection

The Northgate Link cost projection continues to progress within the planned expenditures as construction activities continue. This period's expenditure of \$25.1 M included \$23.1 M for the ongoing major construction contracts including the N140, N150, and N160 Station Finishes contracts, the N180 Trackwork contract, the N830 Systems contract, and other miscellaneous construction; \$0.5 M was incurred for civil and systems final design and design support during construction; and \$0.9 M was for construction management. The remaining expenditures were for third party coordination, permits, staff, legal, right-of-way and other direct charges.

Total project cost incurred to date reached \$1.38 B of which about \$997 M (72%) is attributed to the Construction Phase. The project cost is currently predicted to increase to approximately \$1.46 B by June 2019, reflecting continued active construction activities.



Risk Management

The Risk and Contingency Management Plan (RCMP) establishes a risk management and oversight process for identifying, assessing, and monitoring risks and develops risk reduction/mitigation plans. It provides a tool for the project team to proactively manage risks on the project. It is Sound Transit's responsibility to continuously monitor project status and associated risks.

The top project-wide risks are:

- Coordination with third parties (City of Seattle, WSDOT, UW etc.).
- Coordination of system installation, integration, and testing.
- Potential shortage of skilled labor and O&M support during startup and integration testing.
- Multiple contract interfaces/loss of interface float.

Contingency Management

The Northgate Link project budget was baselined in 2012 with a total contingency of \$396.2 M.

Design Allowance (DA) was established to account for unquantified scope at the time of the cost estimate. DA has been fully depleted and all major contracts have been awarded.

Allocated Contingency (AC) is used to address risks, complexity and unforeseen conditions during the execution of work, including procurement.

Unallocated Contingency (UAC) is used to address general project-wide cost risks and uncertainties.

The current contingency drawdown is trending below the project drawdown in the 1st QTR 2019 with a total decrease of \$1.4 M this period following execution of change orders on the N140 and N160 Station contracts, and the N180 Trackwork contract. The UAC balance remains well above both the minimum contingency and the buffered (minimum plus 20%) contingency levels.

Contingency Status (Monthly)

Type	Baseline		Current Status	
	Amount	% of Total Budget	Remaining Amount	% of Work Remaining
Design Allowance	\$113.9	6.0%	\$0.0	0.0%
Allocated Contingency	\$184.0	9.7%	\$139.4	30.0%
Unallocated Contingency	\$98.3	5.2%	\$26.5	5.7%
Total:	\$396.2	20.9%	\$165.9	35.7%

Contingency by Type

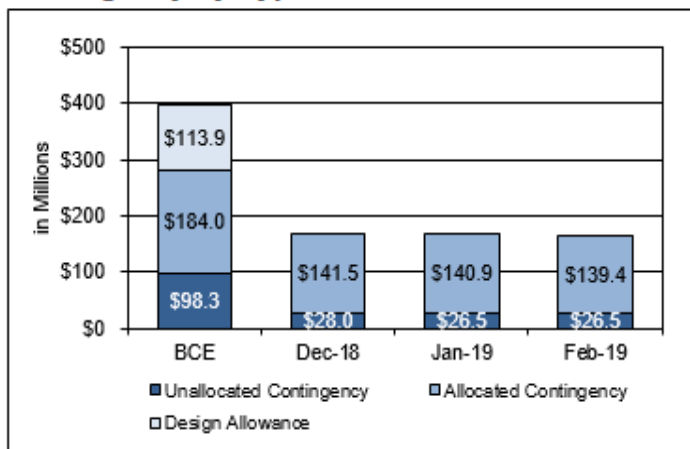
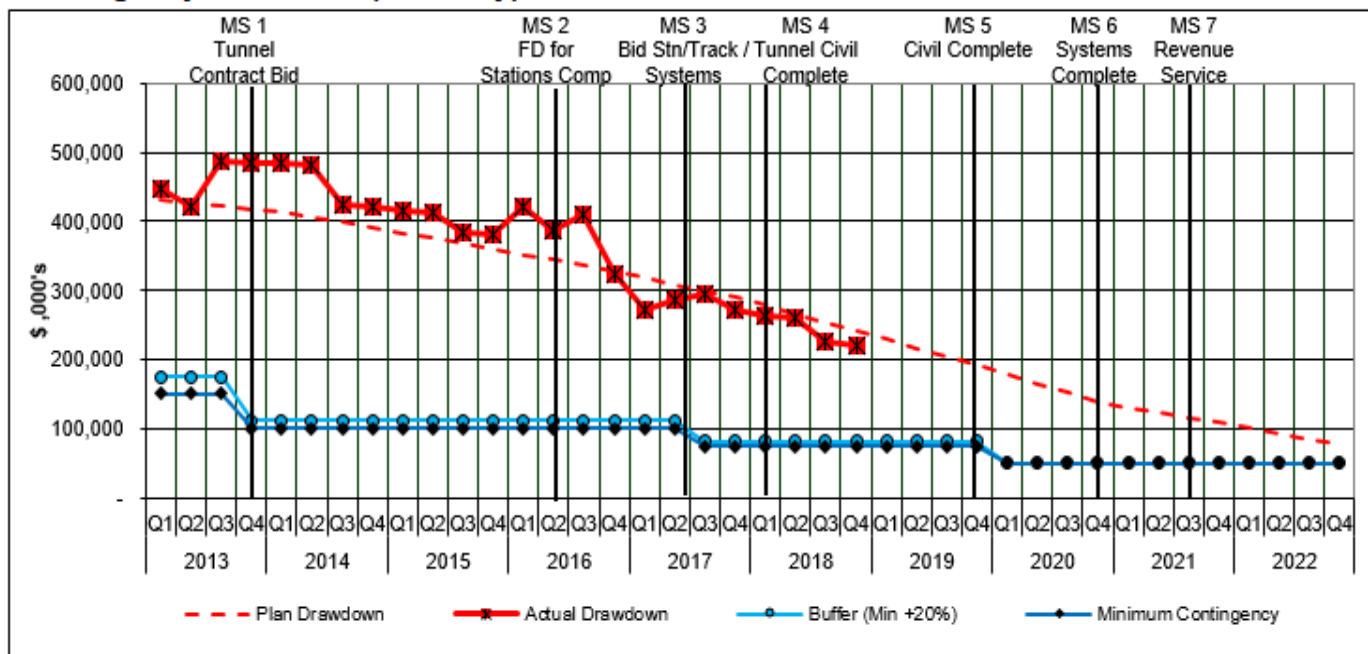


Table figures are shown in millions.

Contingency Drawdown (Quarterly)



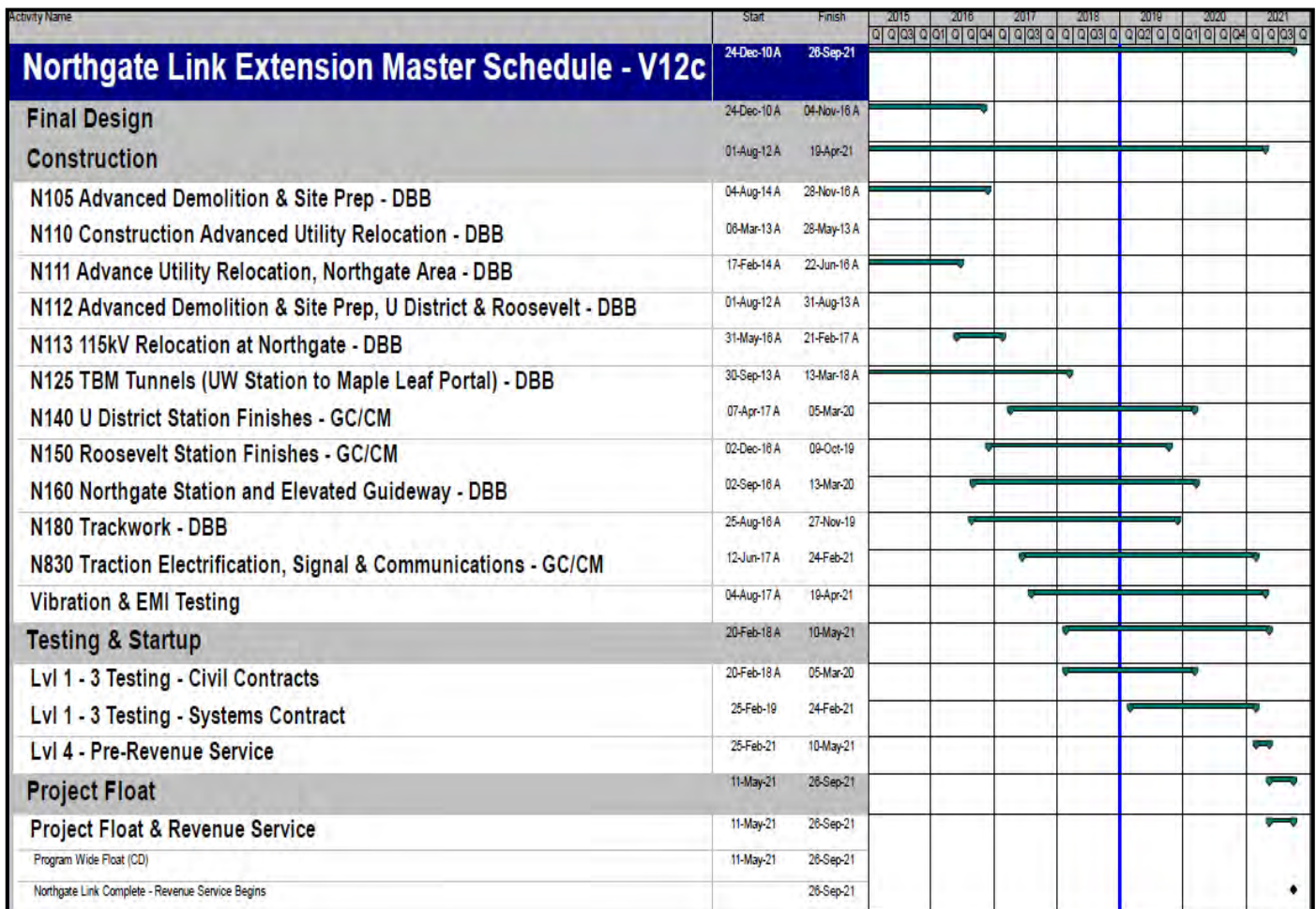
Link Light Rail Northgate Link Extension



Project Schedule

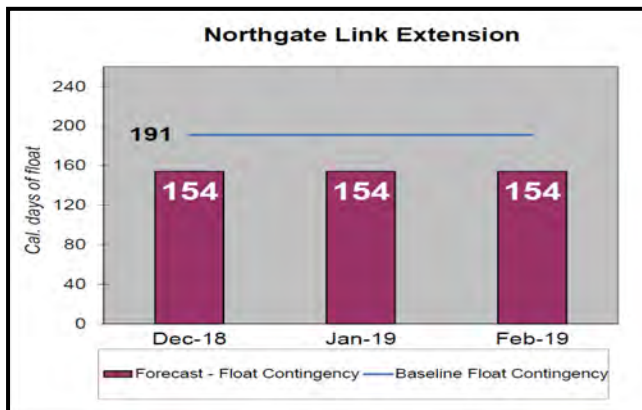
As of February 2019, all Northgate Link civil contracts are under construction and the calculated physical percent complete for all major construction contracts has increased from 76.8% to 78.1%.

The Northgate Link Extension remains largely on schedule for the period. Severe weather in early February has resulted in up to two weeks lost time/low productivity with the N160 contract potentially losing the most time. ST and the contractors are evaluating the impacts and working on recovery strategies. At this time, the project remains on schedule, in large part due to the coordination efforts made at the contractor level. Completion of the civil construction remains in late 3rd QTR of 2020, with Systems construction & testing currently forecast to be complete in late 4th QTR 2020 as planned. The Revenue Service date remains late September 2021.



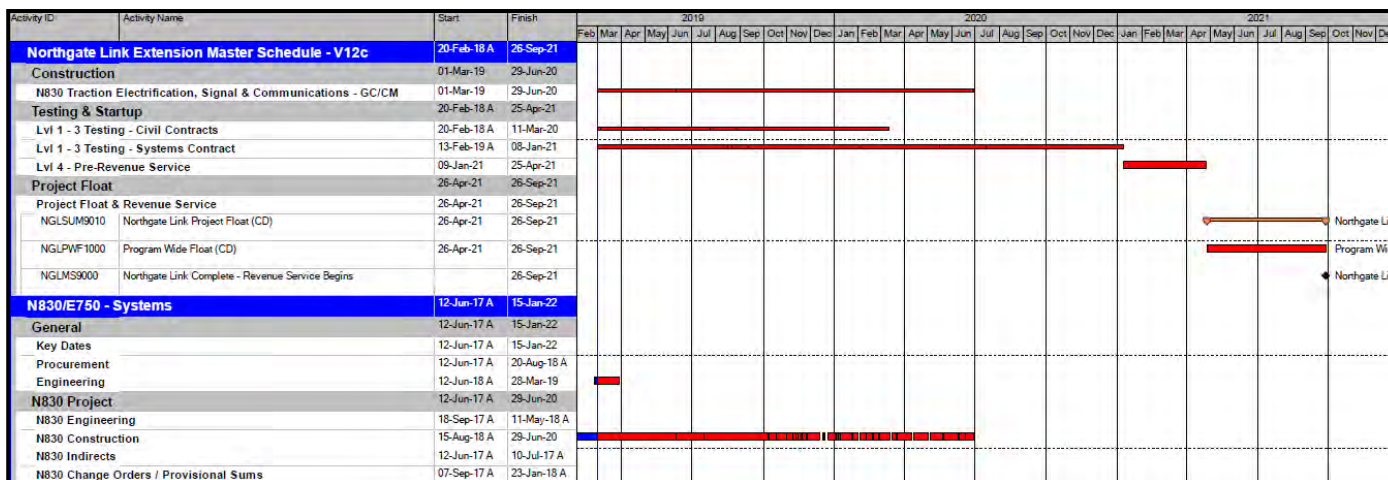
Project Float

The Northgate Link Project currently retains 154 days of unallocated project float. In light of recent changes and some delays incurred in both the civil construction and systems procurements, Sound Transit will be evaluating the overall schedule in the next few months and may use some of the float contingency.



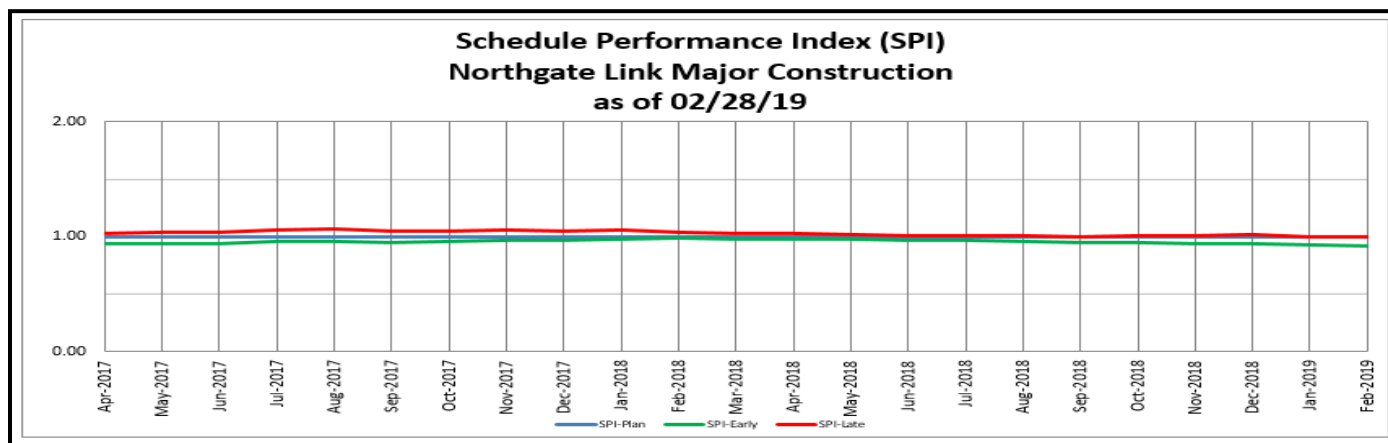
Critical Path Analysis

The critical path for the Northgate Link Extension is unchanged, running through the N830 Systems installations, then into the Testing & Commissioning proceeding the Pre-Revenue Service period. Extended durations for the procurement and building of Train Control systems is current driver of the critical path.



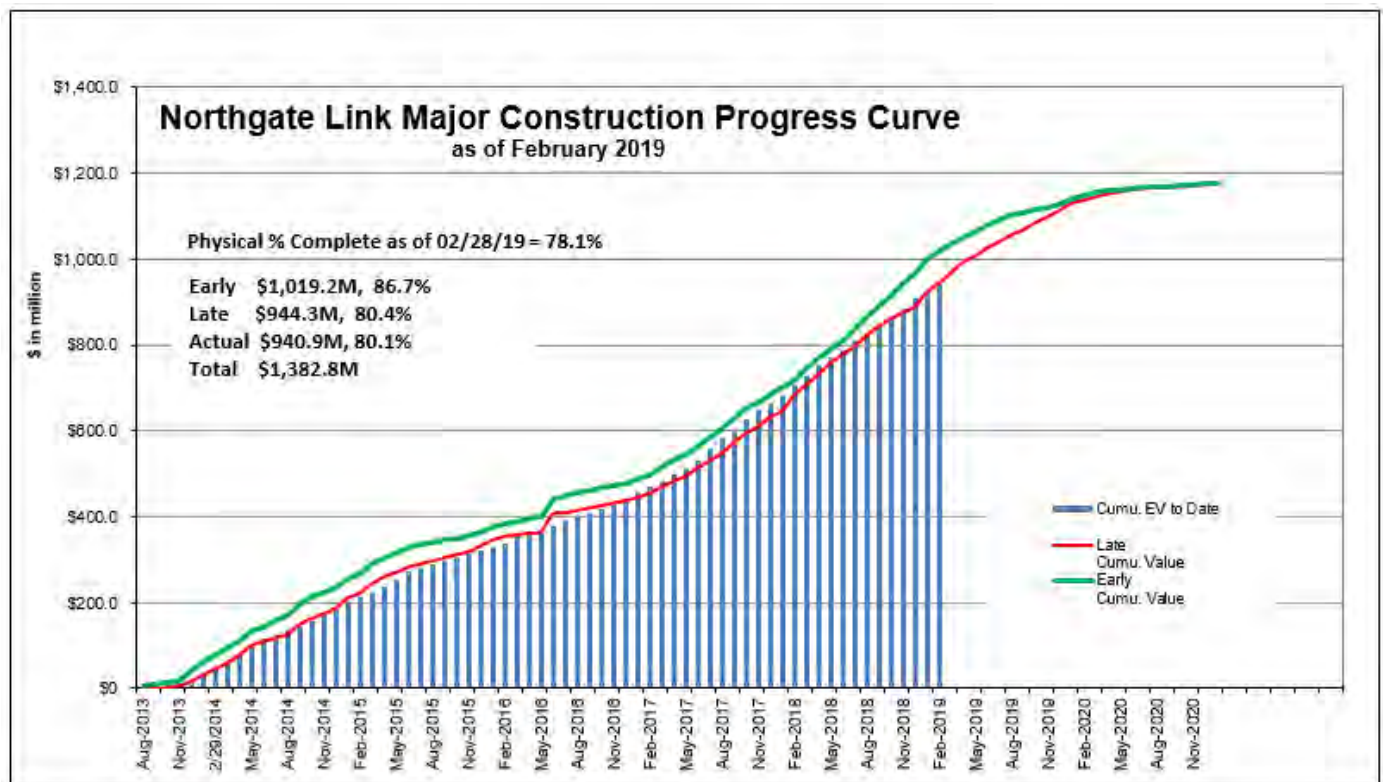
Schedule Performance Index

The early Schedule Performance Index (SPI) for the project is at 0.92 for this period, and the late SPI is at 1.00, unchanged from last period, showing that in general, performance is satisfactory. Both the early and late numbers have been trending within a range of 0.04 above or below the current period numbers for several months.



Cost Progress Analysis

All civil work in the tunnels is complete and all three station finishes contracts and trackwork are well underway. The Northgate Garage opened to the public in November 2018. Systems procurement continues for corrosion control and monitoring, and cable and switchgear installation is underway at UDS and RVS. Overall Northgate Link Major Construction percent complete analysis is based on a weighted measurement among the six major construction contracts' schedules, durations and costs. The graph below shows the aggregate cost progression for these construction contracts is trending appropriately between the early/late projections as drawn from the master schedule. The overall physical percent complete for Northgate Link construction is approximately 78.1% as compared to approximately 76.1% of contractual duration expended.



Community Outreach

University District Station (N140)

- Distributed construction alert for set up of an additional crane that was brought in to set structural steel needed for the station's north entrance escalators and stair.

Roosevelt Station (N150)

- Distributed construction alert for lane closures around the Roosevelt Station site to prepare the roadway for final restoration.
- Hosted an information table for the removal of the Kroll Crane on the Roosevelt High School field.

Community Outreach, continued

Northgate Station (N160)

- Shared Northgate Station NE 103rd Street closure construction alert with King County Metro and through City of Seattle Construction organizer, for distribution through their email list and Park & Ride alert pages.
- Published annual Northgate Link Extension project update to GovDelivery listserv and project page.

Sound Transit Board Actions

Board Action	Description	Date
	None to report this period.	

Construction Safety

Data/ Measure	February 2019	Year to Date	Project to Date
Recordable Injury/Illness Cases	3	3	107
Days Away From Work Cases	0	0	6
Total Days Away From Work	0	0	397
First Aid Cases	3	5	157
Reported Near Mishaps	4	9	130
Average Number of Employees on Worksite	535	-	-
Total # of Hours (GC & Subs)	85,054	171,139	4,211,167
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	7.05	3.51	5.08
Lost Time Injury (LTI) Rate	0.00	0.00	0.28
Recordable National Average	3.20	3.20	3.20
LTI National Average	1.30	1.30	1.30
Recordable WA State Average	6.40	6.40	6.40
LTI WA State Average	2.10	2.10	2.10

Note: Due to the timing of contractor's reporting periods, the current month's numbers above are a combination of actuals and estimates. All previous months' numbers are reconciled and replaced with actuals.

Link Light Rail

Northgate Link Extension

Major Construction Contract Packages

Below are the major construction contract packages for the project with a brief scope description of each.

N105 Advance Demolition and Site Prep - Demolition of Key Bank Building, removal of underground storage tanks and remediation of contaminated soil at UDS. Demolition site and site prep at strip mall near the NG Station. (Complete)

N111 Advanced Utility Relocation at Northgate Area - Relocation of 26kV and communication lines at the Northgate Station vicinity. (Complete)

N113 115kV Relocation at Northgate Station Area - Relocation of overhead electrical facilities at the Northgate Station area. (Complete)

N125 TBM Tunnels UW Station to Maple Leaf Portal - Tunneling work and support of excavation of station boxes for the U District and Roosevelt stations. (Complete)

N140 U District Station Finishes - Civil and architectural finishes work for the U District Station.

N150 Roosevelt Station Finishes - Civil and architectural finishes work for the Roosevelt Station.

N160 Northgate Station & Elevated Guideway & Parking Garage - Civil and architectural finishes work for the Maple Leaf Portal, the aerial guideway, and the Northgate Station and Tail Track. Construction of a 450 stall parking garage to be located at the south corner of the existing Northgate Mall surface parking lot at NE 103rd St. near 1st Avenue NE.

N180 Trackwork - Installation of all trackwork through two tunnels and three stations between UW Station and Northgate Station, including tail track.

N830 Track Electrification, Signals, Communication System - Installation of the major system elements – Traction Electrification, 26kV Distribution, Signals, and Communications.



N180 - Crews completed pulling rail onto the elevated deck south of Maple Leaf Portal.

Contract N140—U District Station Finishes

Current Progress

The N140 Contractor, Hoffman Construction, is continuing structural work below and above grade as well as mechanical, electrical, and plumbing (MEP) work below grade.

- Continued focus on Milestone (MS) 3 and 3.1 Systems Rooms for access turnover to N830.
- Continued fit up work and welding of north escalator 7/8 circulation tube structural framework.
- Continued placing Z-girts at platform level west art wall.
- Continued MEP rough-in at south entry slab on grade.

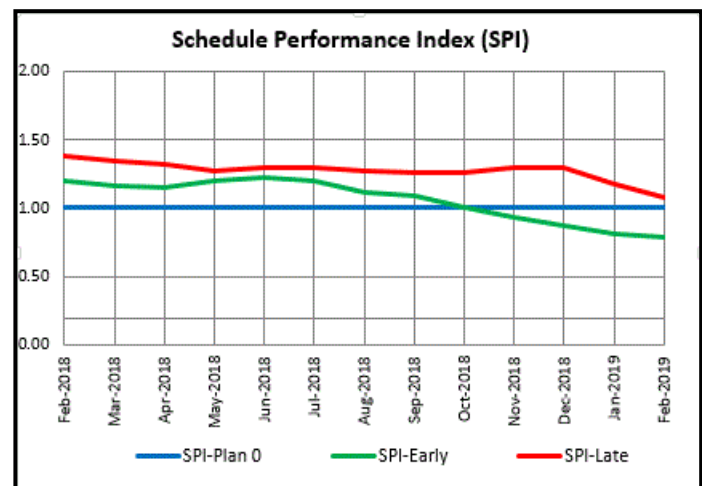
Schedule Summary

Hoffman is currently forecasting a substantial completion of March 11, 2020, fifteen days late. Turn over of the Station TPSS and Main Electrical Room remain key to Systems access and the achievement of Permanent Power. The critical path for N140 remains in the North Headhouse. ST is currently working with Hoffman to resolve and mitigate delays resulting from the re-design of the Stem Walls at the North Headhouse and weather impacts resulting from the snow storm in early February.

Activity Name	OD	RD	Start	Finish	2017					2018				2019				2020
					Q1	Q2	Q3	Q4		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
N140 - U-District Station Finishes	773	262	10-Feb-17 A	11-Mar-20														
MILESTONES	0	0	11-Mar-20	11-Mar-20														
Milestone 4 - Substantial Completion	0	0		11-Mar-20*														
PRECONSTRUCTION	0	0	17-Jul-17 A	17-Jul-17 A														
Precon - Site Access Granted (Construction NTP)	0	0	17-Jul-17 A															
CONSTRUCTION	773	262	10-Feb-17 A	11-Mar-20														
Structure	743	232	10-Feb-17 A	29-Jan-20														
EXTERIOR SHELL / SKIN	172	129	28-Dec-18 A	30-Aug-19														
INTERIORS	370	216	23-Jul-18 A	07-Jan-20														
ELEVATORS	210	210	15-Mar-19	14-Jan-20														
ESCALATORS	386	201	18-Jun-18 A	24-Dec-19														
STAIRS	337	133	10-May-18 A	06-Sep-19														
SITWORK	400	216	18-Jun-18 A	15-Jan-20														
START-UP & COMMISSIONING	165	165	18-Jul-19	11-Mar-20														

Schedule Performance Index

This period, the SPI early is at 0.79 and the SPI late is 1.07. The early index indicates that the contractor continues to perform behind plan when compared to the baseline schedule and cash flow and is expected to trend the same way next period.



Next Period's Activities

- Continue to focus on Milestone (MS) 3 and MS 3.1 Systems Rooms for access turnover to N830.
- Commence work on the deck soffit for Work Directive (WD) 44A.
- Commence erection of structural steel at entry level.
- Commence sealing walls.
- Complete installation of insulation and heat trace on plumbing.
- Continue waterproofing of basement level.
- Continue focus on MS 3 and 3.1 rooms for turnover to N830.
- Commence penthouse metal framing.
- Complete slab on grade for portion of entry level.
- Continue MEP rough in at platform level.
- Commence stair 1 and 2 install.

Closely Monitored Issues

- **Additional stairs from intermediate level to the platform:** The 100% design was received last month and has been sent to the GC/CM for estimating and updating the schedule. They are planning to have the pricing and schedule complete by the end of March. The 100% design has also been sent to Sound Transit's estimator.
- **Work Directive 044A—Lid Level Stem Walls & 0053 North Plenum Insulation & Doors:** Due to mitigation measures that have been implemented, current indications are that this change will have minimal impact to the N140 construction schedule and will not impact the follow-on contracts. The CM team is coordinating with N830 to keep them informed of the schedule dates for the systems rooms.
- **Request for Change 107 Roof Deck Composition for System Supports:** The contractor's revised design for supporting mechanical and electrical facilities, including seismic bracing is an improvement from the original design but still involves a lot of structural steel. The design team confirmed the contractor's approach and did not have any comments. Awaiting an update on cost and schedule.

Cost Summary

Present Financial Status	Amount
N140 Contractor—Hoffman Construction	
Original Contract Value	\$ 159,836,688
Change Order Value	\$ 1,303,290
Current Contract Value	\$ 161,139,978
Total Actual Cost (Incurred to Date)	\$ 90,174,877
Financial Percent Complete	56.0%
Physical Percent Complete	58.0%
Authorized Contingency	\$ 7,991,834
Contingency Drawdown	\$ 1,303,290
Contingency Index	3.6



UDS – Metal Decking at North Entrance.

Contract N150—Roosevelt Station Finishes

Current Progress

Hoffman Construction (HCC) continues to focus on interior mechanical and electrical installations, vertical transportation, and utility work. On-going work this period includes:

- Continued work on stair 9 walls. Commenced installation of glass masonry units at stair 9.
- Continued CMU installation at north entrance and infill of openings throughout the station.
- Continued framing walls, rough-in mechanical, electrical, and plumbing (MEP) in walls, hanging drywall, mud, taping and painting throughout the station.
- Continued installation of sprinkler work and wall tile installation in high bay center area.
- Backfilled utility trenches along 65th Street and 12th Avenue between 65th & 66th Streets.

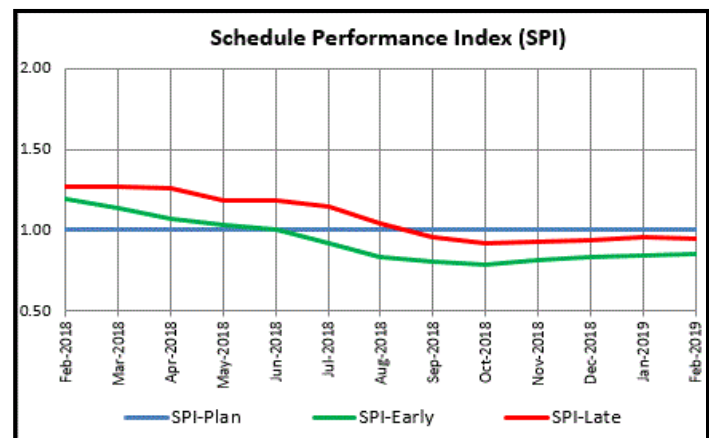
Schedule Summary

The N150 December schedule update continues to forecast a ten day late Substantial Completion date. The critical path is unchanged, driven by the North Headhouse Roofing, Elevator and Stair installation. Near critical work includes the South Headhouse finishes, and North Headhouse finishes. ST is working with HCC to resolve weather delays due to snow in February.

Activity Name	OD	RD	Start	Finish	2017				2018				2019				
					Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
N150 - Roosevelt Station Finishes	748	185	02-Dec-16 A	19-Nov-19													
MILESTONES	0	0	30-Sep-19	30-Sep-19													
MILESTONE 3 - SUBSTANTIAL COMPLETION OF ALL WOR	0	0		30-Sep-19*													
PRECONSTRUCTION	0	0	02-Dec-16 A	02-Dec-16 A													
ISSUE CONSTRUCTION NTP	0	0		02-Dec-16 A													
CONSTRUCTION	701	185	13-Feb-17 A	19-Nov-19													
MOBILIZATION	578	27	13-Feb-17 A	21-May-19													
STRUCTURE	598	20	13-Feb-17 A	19-Jun-19													
INTERIORS	384	146	23-Mar-18 A	25-Sep-19													
HEADHOUSE	387	149	21-Mar-18 A	30-Sep-19													
BUS SHELTER	30	30	11-Mar-19	19-Apr-19													
BIKE CAGE	13	13	24-May-19	12-Jun-19													
ELEVATORS	193	131	01-Nov-18 A	05-Sep-19													
ESCALATORS	113	51	03-Dec-18 A	10-May-19													
STAIRS	184	149	04-Sep-18 A	30-Sep-19													
CP-31	447	55	19-Feb-18 A	19-Nov-19													
CONSTRUCTION ACCESS INFILL	68	68	22-May-19	27-Aug-19													
START-UP & COMMISSIONING	151	131	15-Feb-19 A	04-Sep-19													
SITE RESTORATION	328	143	07-Jun-18 A	20-Sep-19													
ARTWORK	237	99	15-Aug-18 A	22-Jul-19													
CLOSEOUT	106	106	29-Apr-19	26-Sep-19													
N830 TRACTION ELECTRIFICATION, SIGNALS, C	40	0	01-Nov-18 A	28-Dec-18 A													

Schedule Performance Index

This period, the SPI early is at 0.80 and the SPI late is 0.90. The early index indicates that the contractor continues to perform behind plan when compared to the baseline schedule and cash flow and it is expected to continue this trend next period.



Next Period's Activities

- Continue setting elevator 1 platform, entrances and machine room.
- Complete build-out of escalators 7 & 8. Commence rough-in of escalators 5 & 6.
- Continue work on stair 9 walls including east wall tile. Complete installation of glass masonry units at stair 9.
- Continue CMU installation at north entrance and infill of openings throughout the station.
- Continue framing walls, rough-in MEP in walls, hanging drywall, mud, taping and painting throughout the station.
- Continue setting electrical panels, terminating branch circuits and lighting rough-in throughout the station.
- Continue installation of sprinkler work and wall tile installation in high bay center area.
- Commence backfill of utility trenches along 12th Avenue from 66th to 67th Streets.
- Deliver and install north emergency fans EMFN-03, 04 & 05.
- Prep for SPU water tie-in.

Closely Monitored Issues

- **450h Fans (3 Located at North Station):**
The first north emergency fan is scheduled to for delivery the first week of March, with the second delivery scheduled the following week. McKinstry working to schedule the heat test on a non-production unit to complete balance of testing required. McKinstry also working to remove blades from fans to get them polished. Design working on completing review of testing data.
- Design completed the balance of urgent electrical change notices.
- SCL is scheduled to commence pulling conductors in the duct bank to provide power to the SCL gear next month. SCL is working to confirm the schedule to energize equipment.
- CM is reviewing access to equipment for maintenance with Sound Transit Facilities and Operations. Site walk identified several potential issues such as verifying access to two overhead HVAC units and smoke heads, etc.

Cost Summary

Present Financial Status	Amount
N150 Contractor - Hoffman Construction	
Original Contract Value	\$ 152,291,184
Change Order Value	\$ 5,639,563
Current Contract Value	\$ 157,930,747
Total Actual Cost (Incurred to Date)	\$ 119,621,348
Financial Percent Complete	75.7%
Physical Percent Complete	73.0%
Authorized Contingency	\$ 14,614,559
Contingency Drawdown	\$ 5,639,563
Contingency Index	1.9



RVS—North Headhouse—Looking North..

Contract N160 – Northgate Station, Elevated Guideway, and Parking Garage

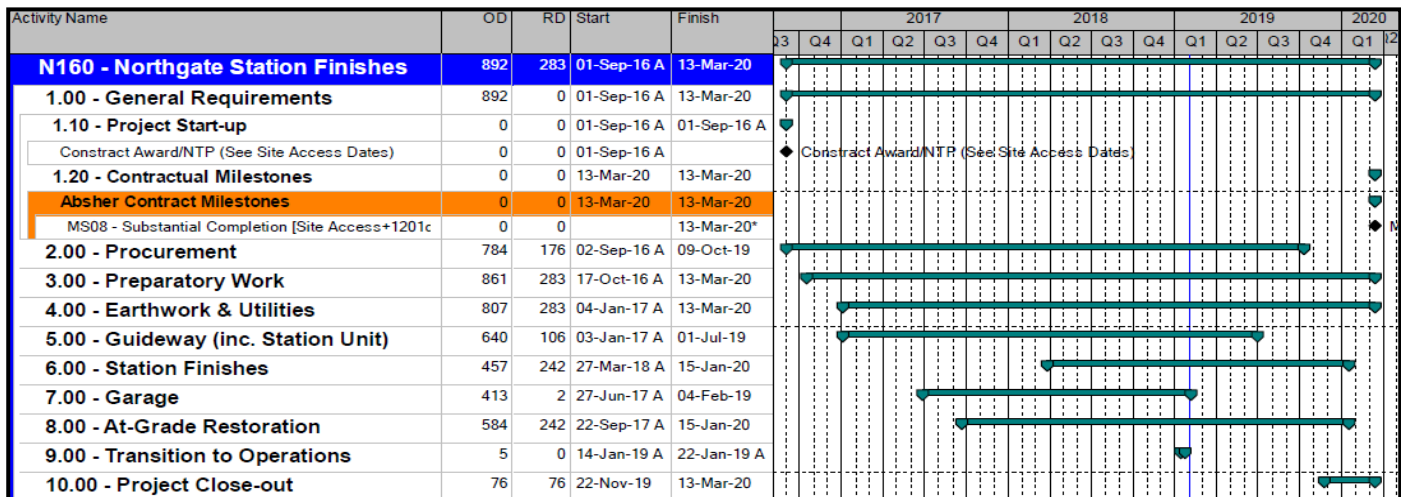
Current Progress

The N160 Contractor, Absher Construction, is continuing to prosecute work in all areas of the project. Accomplishments to date:

- Placed footing for Escalator #1 pit on north side of 103rd. Cantilevered footing over WSDOT signal conduits.
- Continued placing raceway conduit and boxes in Mezzanine walls.
- Continued electrical duct bank on east side of 1st Ave to vault V51. Inspection by SCL.
- Continued bio-retention wall on MSE #5. Moved forms from south end of west wall, to south end of east wall.
- Excavated and installed 8" DIP from CB-D8 to CB-D10.
- Completed setting structural steel columns and framing over Escalators 2 & 3.
- Continuing punchlist corrections and Emergency Generator Work Directive at Garage.

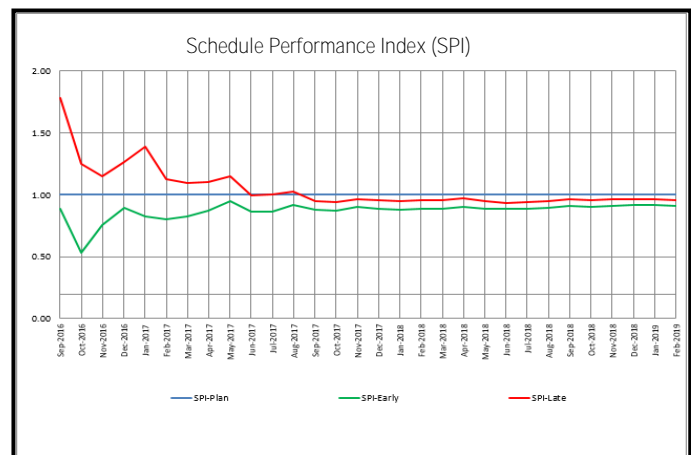
Schedule Summary

The project schedule for February retains a March 13, 2020 Substantial Completion date, 13 days late. Interim milestones for Systems contractor access have also slipped, in part due to changes in the fireproofing requirements, and in part due to weather impacts. ST is negotiating with Absher on resolution of the delays, and should complete the effort in March. The critical path is currently driven by the South Ancillary Building finishes.



Schedule Performance Index

This period, the SPI early is at 0.91, and the SPI late is at 0.96 (unchanged from last month). The early index indicates that the contractor continues performing slightly behind plan when compared to the baseline schedule. Overall work progress has remained within 0.03 of its current trend over the last year.



Link Light Rail Northgate Link Extension

Next Period's Activities

- **General Project Progress:** Hold Quality Task Force meeting.
- **Guideway Substructure/Superstructure:** Continue punchlist work.
- **Station:** Continue installation of Mezzanine wall sheathing, plumbing and electrical conduits. Continue Escalator 1 pit walls. Reinforce and place shotcrete at tiebacks. Continue underground electrical for North Ancillary Building and begin slab on grade. Complete structural steel at Escalator 2 and 3 lobby. Complete roof joist and decking at Mezzanine Ancillary Building.
- **North TPSS and Signal Bungalow:** Complete electrical duct bank to SCL Vault. Backfill footing drains. Continue electrical rough-in to MSE walls.
- **Parking Garage:** Continue punchlist corrections. Complete emergency generator tap. Correct leaking conduits at south wall. Install gabion baskets at west wall.
- **Utility & Drainage Work:** Continue forming and reinforcement for bio-retention structure at MSE wall 5. Coordinate Waterline installation work with Seattle Public Utilities (SPU).

Closely Monitored Issues

- Schedule slippage continues on elevated structure and station. Delays from 3-hr Fire Rating revisions and other work directives are being reviewed and mitigated.
- Review of Guideway deck grades and plinth bar locations found multiple elevation and tolerance issues. Irregularities have been corrected as needed by N180 as their trackwork progresses.
- Water leakage identified at the Garage has been under repair; contractor continuing with action to seal the leaks and repair waterproofing. Results are pending the next rain event.

Cost Summary

Present Financial Status	Amount
N160 Contractor - Absher Construction	
Original Contract Value	\$ 174,000,000
Change Order Value	\$ 7,749,509
Current Contract Value	\$ 181,749,509
Total Actual Cost (Incurred to Date)	\$ 139,559,401
Financial Percent Complete	76.8%
Physical Percent Complete	74.0%
Authorized Contingency	\$ 17,400,000
Contingency Drawdown	\$ 7,749,509
Contingency Index	1.6



Electrical conduit layout at South Ancillary Room below the main station area.

Contract N180 – Trackwork UWS to Northgate Station

Current Progress

The N180 Contractor, Stacy and Witbeck, Inc. (SWI) continues to prosecute the work as follows:

- Crews completed adjustments on 16Hz side pads and the final alignment of the slabs at UDS Platform.
- Crews continue final line and grade work on rails between UDS and RVS.
- Direct Fixation (DF) track is complete through Roosevelt Station.
- Crews continue constructing DF trackwork in both tunnels between RVS and MLP.
- Crews are installing the roof support edge angles, in preparation for the roof and grade beam pour at the MLP Tower.
- Crews have laid out the majority of the special trackwork in the pocket track area at Northgate Station.

Schedule Summary

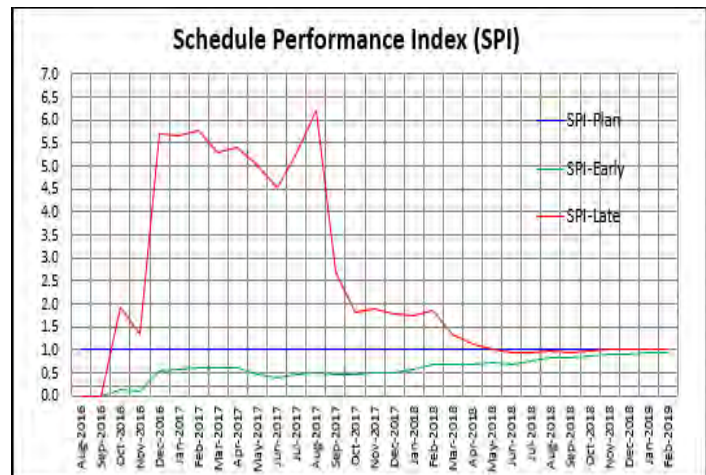
The N180 schedule for February continues to forecast an on-time completion of work. The critical path is driven by trackwork construction on the elevated guideway (Work Area 7).

Activity Name	OD	RD	Start	Finish	#6	2017				2018				2019			
						Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
N180 - Trackwork	792	163	25-Aug-16 A	18-Oct-19													
Milestones	0	0	18-Oct-19	18-Oct-19													
Milestone 7d - Substantial Completion of Work Area 7, 7.1, 7.2 (10/31/19)	0	0		18-Oct-19*													
Construction	767	129	25-Aug-16 A	02-Sep-19													
Mobilization	658	129	25-Aug-16 A	02-Sep-19													
Submittals	1071	10	25-Aug-16 A	01-Aug-19													
Procurement	553	45	07-Oct-16 A	02-May-19													
Work Area 1 (N06 - UWS to UDS Tunnels)	230	0	13-Nov-17 A	09-Oct-18 A													
Work Area 2.1 and 2.2 (N07 - U-District Station)	321	0	15-Dec-17 A	27-Feb-19 A													
Work Area 3 (N08 - UDS to RVS Tunnels)	222	0	05-Feb-18 A	18-Feb-19 A													
Work Area 4 (N09 - Roosevelt Station)	186	0	19-Mar-18 A	11-Jan-19 A													
Work Area 5 (N10 - RVS to MLP Tunnels)	306	78	28-Feb-18 A	19-Jun-19													
Work Area 6 (MLP and At Grade Guideway)	323	87	19-Mar-18 A	02-Jul-19													
Work Area 7 (Elevated Guideway South of NGS)	147	107	12-Dec-18 A	31-Jul-19													
Work Area 7.1 (N11 - Northgate Station)	72	58	07-Jan-19 A	21-May-19													
Work Area 7.2 (Elevated Guideway North of NGS)	124	97	08-Jan-19 A	17-Jul-19													

Schedule Performance Index

This period, the SPI early is at 0.94 (slightly up from 0.93 last month), and the SPI late is at 1.02. The expected performance is between early and late.

Due to late access to the tunnel, the contractor is behind the baselined schedule, but continues to meet their goals for early work such as material procurement and fabrications. Work performed in the field has to date met or exceeded forecasts.



Link Light Rail Northgate Link Extension

Next Period's Activities

- **Work Area 1** - Minor punch-list activities continues, prepping for start of the thermite welding and Insulated joint install
- **Work Area 2.2** To begin installing fasteners, end separation pads, and rail.
- **Work Area 3** Crews to continue final line and grade work on rails
- **Work Area 4** - SWI will continue to utilize the CIP to coordinate their work at RVS/N150
- **Work Area 5** - Direct Fixation (DF) Track Construction in northbound & southbound tunnels will continue
- **Work Area 5.1** - 1. Temporary Electrical - TCP to install power pole approved by DPD, SWI working with SCL on timing of pole installation to coordinate the power swap
- **Work Area 6** MLP Stair Tower - Crews are installing the roof support edge angles, MLP Track Slab - Track blast will continue, pour into the final section of the acoustic foundation wall, continue duct bank work and water treatment system relocation
- **Work Area 7.1** - Contractor is working North to South to allow access from the MLP yard.
- **Work Area 7.2** - Crews to lay out the majority of the Special Trackwork in the pocket track area, direct fixation plinth work

Closely Monitored Issues

- The most notable monitored issue going forward appears to be the Direct Fixation track construction in work Area 5. Tracking to meet the substantial completion milestones, but it still needs to be monitored closely since it is the critical path for the project.
- Work Area 6 work is going to present difficulties due to the tightness of the work area and maintaining access to the tunnels during construction. Work Areas 7, 7.1 & 7.2 will present challenges of building track on a bridge deck constructed by another contract, with added complexity of staging concrete pours from below.

Cost Summary

Present Financial Status	Amount
N180 Contractor—Stacy & Witbeck	
Original Contract Value	\$ 71,455,950
Change Order Value	\$ 3,100,049
Current Contract Value	\$ 74,555,999
Total Actual Cost (Incurred to Date)	\$ 60,344,758
Financial Percent Complete	80.9%
Physical Percent Complete	83.0%
Authorized Contingency	\$ 10,718,393
Contingency Drawdown	\$ 3,100,049
Contingency Index	2.80



Placement of Direct Fixation Trackwork on the elevated deck at Northgate.

Contract N830 – Northgate Link Systems, Heavy Civil GC/CM

Current Progress

The N830 Contractor, Mass Electric Construction Co. (MEC), continues to prosecute the work as follows:

- The Contractor has mobilized to University District Station and started the HV Cable pulling from the MVSS room.
- At RVS, Pre-testing of the MVSS switchgear has commenced. Installation work is ongoing regarding the control cabling, batteries and battery charger.

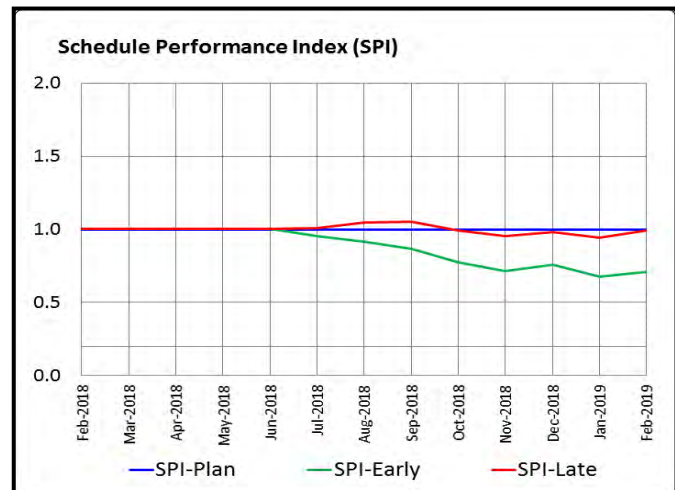
Schedule Summary

An updated N830 schedule for January is still pending. The December schedule update was submitted late but still forecasts an on-time completion. ST and MEC are working closely with the civil contractors to mitigate potential delays in access dates due to changes in the civil construction work. ST is continuing to work with the N180 contractor to confirm an early access date to the tunnels in order to begin systems installations.

Activity Name	OD	RD	Start	Finish	017	2018				2019				2020				2021						
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
N830/E750 - Systems	879	458	12-Jun-17 A	08-Jan-21																				
General	0	0	12-Jun-17 A	12-Jun-17 A																				
Key Dates	0	0	12-Jun-17 A	12-Jun-17 A																				
NTP - Notice to Proceed (NTP) Northgate and East Link	0	0	12-Jun-17 A		NTP - Notice to Proceed (NTP) Northgate and East Link																			
N830 Project	813	458	18-Sep-17 A	08-Jan-21																				
N830 Engineering	808	41	18-Sep-17 A	31-Dec-20																				
N830 Construction	747	458	20-Dec-17 A	08-Jan-21																				
N830 Milestones	0	0	31-Dec-20	31-Dec-20																				
MS#05 Northgate: Substantial completion of Northgate Li	0	0		31-Dec-20*																				
N830 OCS	475	340	10-Sep-18 A	09-Aug-20																				
N830 Traction Power / Substations Procurement	608	319	20-Dec-17 A	11-Jun-20																				
N830 Signals	447	331	15-Aug-18 A	29-Jun-20																				
N830 Communications	690	432	10-Feb-18 A	20-Nov-20																				
N830 Radio	444	197	09-Jul-18 A	21-May-20																				
N830 Trunk Fiber	405	288	28-Sep-18 A	29-Apr-20																				
N830 Testing and Commissioning	571	416	07-Sep-18 A	08-Jan-21																				

Schedule Performance Index

The Contractor performed slightly ahead of the late schedule (SPI 0.99) and behind the early schedule (SPI 0.71) in comparison to the baseline work plan.



Next Period's Activities

- Continue Procurement for Signal and Communication materials fabrication and installation.
- Continue development and reviews of engineering submittals covering all disciplines: Traction Power Substations (TPSS), Overhead Catenary Systems (OCS), Train Control Systems (TCS)/Signals and Communications.
- Continue meetings held between Systems and Civil Contractors to discuss and coordinate interface/access points for respective contracts.
- Complete As-Built drawings and Safety Certification for the Northgate Parking Garage.
- Continue MVSS work on Roosevelt Station.
- Ongoing inspections of OCS foundations on Eastlink.

Closely Monitored Issues

- The Construction Management Consultant (CMC) and Sound Transit (ST) continue to closely monitor the schedule of the procurement packages and to ensure it does not impact upcoming work activities.
- The CMC and ST continue ongoing coordination for the IDS cutover change from full shutdown to single tracking.
- ST and CMC will be closely monitoring the delivery of the MVSS Switchgear equipment associated with Roosevelt Station and the potential effects on installation, testing, and Milestone #3.
- ST, CMC, and the Systems Contractor closely monitoring and continue to work with the N140 project team to manage the later than expected access to the Above Grade System Rooms at University District Station and the potential effects on installation, testing, and Milestone #2.

Cost Summary

Present Financial Status	Amount
N830 Contractor - Mass Electric Construction Co.	
Original Contract Value	\$ 104,660,444
Change Order Value	\$ 687,611
Current Contract Value	\$ 105,348,055
Total Actual Cost (Incurred to Date)	\$ 29,343,649
Financial Percent Complete	27.9%
Percent Complete	32.0%
Authorized Contingency	\$ 5,233,022
Contingency Drawdown	\$ 687,611
Contingency Index	2.5

**The N830 and E750 Systems is a joint procurement. The Cost Summary table above represents N830 Systems only.*



Installation of Breaker to the Racked Position of MVSS at Roosevelt Station, 02/21/2019.

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Link Light Rail Lynnwood Link Extension

Project Summary

Scope

Limits North Seattle to Shoreline, Mountlake Terrace, and Lynnwood Transit Center

Alignment Lynnwood Link extends light rail 8.5 miles to Snohomish County along I-5 from Northgate Mall in Seattle to the Lynnwood Transit Center, with four new light rail stations. The configuration includes at-grade, elevated, and retained cut/fill alignment.

Stations Shoreline South/145th, Shoreline North/185th, Mountlake Terrace, Lynnwood City Center

Systems Signals, traction power, and communications (SCADA)

Phase Final Design

Budget \$2.772 Billion (Baseline May 2018)

Schedule Revenue Service: July 2024



Map of Lynnwood Link Extension Alignment.

Key Project Activities

- Received Conditional Use Permit consistency review from Mountlake Terrace on Feb. 12th; continuing to address corrections for re-submittal in mid-March.
- Held construction open house for L200 (Seattle and Shoreline), attended by over 200 community members, on Feb. 26th.
- Facilitated meeting with Edmonds School District staff to present bus parking relocation plan associated with L300 construction on Feb. 28th.
- Received Board approval to issue a contract for L300 early work with Skanska on Feb. 28th. Contract execution and notice-to-proceed (NTP) expected in March.
- Conducted quantity reviews with the L200 contractor (SKH) in advance of negotiations commencing in April.
- Began advertisement of public bid packages for both the L200 and L300 packages in advance of negotiations commencing in April.

Project Cost Summary

The project cost is summarized below in two cost categories. The first table summarizes costs in accordance with Sound Transit's budget Work Breakdown Structure (WBS). The second table summarizes costs in accordance with the FTA's Standard Cost Categories (SCC) format. The figures in both tables are shown in millions.

In February 2019, \$26.8 M was incurred, of which \$1.8 M was for advancing civil & systems final design, and \$3.7 M was for property acquisition and relocation. The remaining expenditures were for third party coordination, permits, staff, legal, and other direct charges.

Commitments and incurred costs under the construction phase are related to permits, utility relocation, early demolition and early work activity.

Cost Summary by Phase

Project Phase	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$98.2	\$98.2	\$29.0	\$28.8	\$98.2	\$0.0
Preliminary Engineering	\$39.1	\$39.1	\$39.1	\$39.1	\$39.1	\$0.0
Final Design	\$164.2	\$164.2	\$111.4	\$97.3	\$164.2	\$0.0
Construction Services	\$128.4	\$128.4	\$20.6	\$30.2	\$128.4	\$0.0
3rd Party Agreements	\$14.6	\$14.6	\$10.1	\$5.7	\$14.6	\$0.0
Construction	\$1,921.4	\$1,921.4	\$109.1	\$11.9	\$1,921.4	\$0.0
Light Rail Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$235.7	\$235.7	\$131.8	\$121.7	\$235.7	\$0.0
Project Contingency	\$170.2	\$170.2	\$0.0	\$0.0	\$170.2	\$0.0
Total	\$2,771.6	\$2,771.6	\$451.0	\$334.5	\$2,771.6	\$0.0

Cost Summary by SCC

SCC Element	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
10 Guideway & Track	\$791.8	\$791.8	\$0.0	\$0.0	\$703.1	\$88.6
20 Stations	\$333.8	\$333.8	\$0.0	\$0.0	\$333.8	\$0.0
30 Support Facilities	\$2.0	\$2.0	\$0.0	\$0.0	\$2.0	\$0.0
40 Sitework & Special Conditions	\$421.1	\$421.1	\$103.9	\$11.5	\$509.7	-\$88.6
50 Systems	\$244.4	\$244.4	\$0.0	\$0.0	\$244.4	\$0.0
Construction Subtotal (10 - 50)	\$1,793.0	\$1,793.0	\$103.9	\$11.5	\$1,793.0	\$0.0
60 Row, Land	\$235.7	\$235.7	\$131.8	\$121.7	\$235.7	\$0.0
70 Vehicles (Non-Revenue)	\$1.4	\$1.4	\$0.0	\$0.0	\$1.4	\$0.0
80 Professional Services	\$449.3	\$449.3	\$215.2	\$201.3	\$449.3	\$0.0
90 Unallocated Contingency	\$292.2	\$292.2	\$0.0	\$0.0	\$292.2	\$0.0
Total (10 - 90)	\$2,771.6	\$2,771.6	\$451.0	\$334.5	\$2,771.6	\$0.0

Link Light Rail Lynnwood Link Extension



Risk Management

The Risk and Contingency Management Plan (RCMP) establishes a risk management and oversight process for identifying, assessing, and monitoring risks and develops risk reduction/mitigation plans. It provides a tool for the project team to proactively manage risks on the project. It is Sound Transit's responsibility to continuously monitor project status and associated risks.

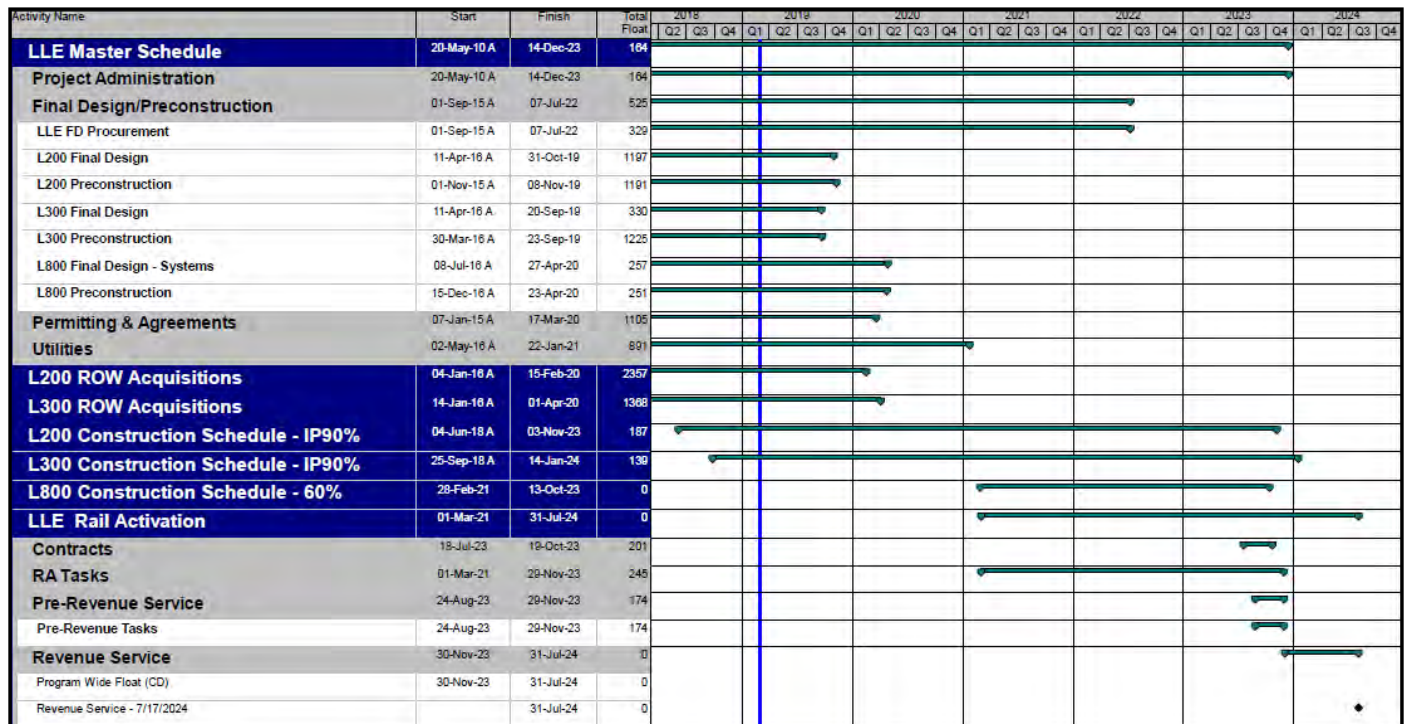
The next quarterly (1st QTR) risk update for the project is scheduled for March 2019. ST includes participation of construction management consultants and construction contractors in its risk management program.

The following are the top project risks:

- Obtaining permits—Cities, WSDOT and resource agencies.
- Timely completion of right-of-way acquisition.
- Construction market conditions.
- Differing site conditions encountered during construction.

Project Schedule

The project master schedule currently forecasts a Revenue Service date of July 31, 2024. The critical path is currently driven by L200 early construction submittals, with the near-critical paths in permitting, right-of-way, and the L300 contract negotiations process. L200 physical construction activities are currently forecast to start in April. ST has reviewed and accepted the Preliminary L200 construction schedule and anticipates the submission of the baseline construction schedule in early March. Upon acceptance this schedule will be integrated in to the overall project schedule. The NTP for L300 is currently forecast for late-March with the preliminary construction schedule expected in April.



Contingency Management

The Lynnwood Link project budget was baselined in May 2018 with a total contingency of \$737.7M.

Design Allowance (DA) was established to account for unquantified scope at the time of the cost estimate. DA is expected to be fully drawn when all construction contract packages are executed.

Allocated Contingency (AC) is used to address risks, complexity and unforeseen conditions during the execution of work, including procurement.

Unallocated Contingency (UAC) is used to address general project-wide cost risks and uncertainties.

During this period, DA was drawn down by \$13.6 M in alignment with L200 early work NTP. AC decreased by a net amount of \$0.9M. The change included increased cost of permits and a final design change order for bid package support. No drawdown to UAC occurred in this period.

Contingency Status (Monthly)

Type	Baseline		Current Status	
	Amount	% of Total Budget	Remaining Amount	% of Work Remaining
Design Allowance	\$247.9	8.9%	\$234.3	9.6%
Allocated Contingency	\$197.6	7.1%	\$199.9	8.2%
Unallocated Contingency	\$292.2	10.5%	\$292.2	12.0%
Total:	\$737.7	26.6%	\$726.4	29.8%

Contingency by Type

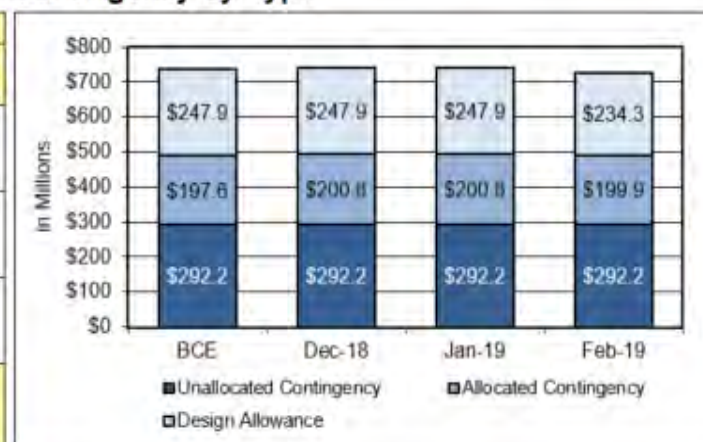
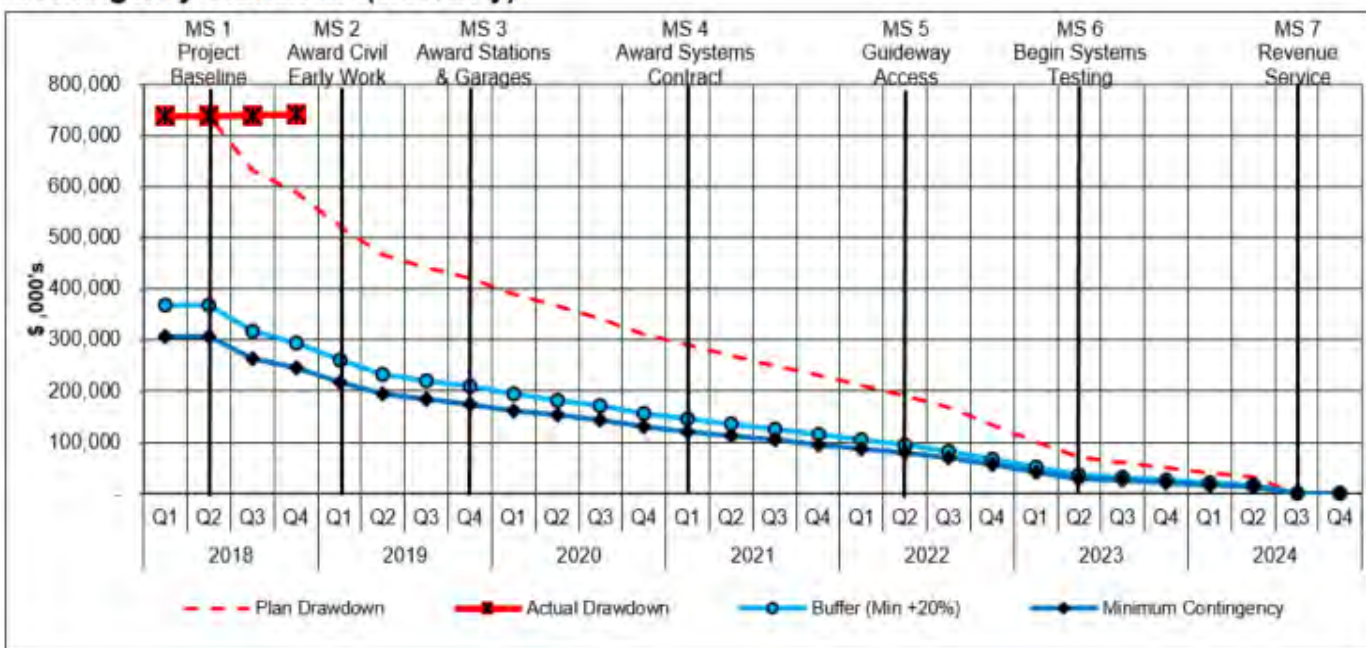


Table figures are shown in millions.

Contingency Drawdown (Quarterly)



Right-of-Way

The Right-of-Way effort for this project involves the acquisition of a range of property interests which includes compensable (e.g. fee acquisitions, guideway easements, permanent and temporary construction easements) and non-compensable rights (e.g. rights of entry). These acquisitions will result in owner and tenant residential and commercial relocations. The Right-of-Way program status for this period is summarized in the following table.

Lynnwood Link Extension Property Acquisition Status					
ACQUISITION				RELOCATION	
Total Acquisitions	Board Approved	Offers Made to date	Closings to date	Relocations Required	Relocations Completed to date
373	355	315	161	249	206
* All numbers are cumulative totals, except where noted. Number of totals may differ from other reports due to the timing of reporting periods.					

Community Outreach

In February, the Lynnwood Link Community Outreach team:

- Launched an online open house to share information with the public about the upcoming start of construction. During the month of February, the online open house had 2,844 visits and produced 262 new signups to the project e-mail list.
- Met with Latin Educational Training Institute to address questions about displacement in Lynnwood.
- Answered community questions about a potential business purchase, Interurban Trail closures during construction, construction timing, and parking at the Lynnwood Transit Center.
- Presented an overview of system expansion, with in-depth section on Lynnwood Link, to DSHS Lynnwood Office staff.
- Developed outreach plan for 5th Ave Closure in coordination with Sound Transit project team and the City of Seattle.
- Attended the Parkland Ice Cream Social Meeting in Shoreline to discuss the upcoming start of LLE construction.
- Provided briefings to the Snohomish County Public Works Committee and Sound Transit Citizen's Oversight Panel regarding the construction outreach program.
- Hosted the first pre-construction public open house on Feb. 26th at Shorewood High School in Shoreline with over 200 people in attendance to learn about the upcoming start of construction.

Sound Transit Board Actions

Board Action	Description	Date
M2019-13	Authorizes the CEO to modify the contract with HNTB Jacobs Trusted Design Partners to provide civil Design Services During Construction (DSDC) for the Lynnwood Link Extension in the amount of \$23,464,459, with a 10% contingency of \$2,346,446 totaling \$25,810,905 for a new total authorized contract amount not to exceed \$132,375,879.	2/28/2019
M2019-14	Authorizes the CEO to execute a contract with Skanska Constructors L300 to provide Heavy Civil General Contractor/Construction Manager (GC/CM) construction services for early work on the NE 200th Street to Lynnwood Transit Center segment early construction work within the Lynnwood Link Extension in the amount of \$56,886,631, with a 7% contingency of \$3,982,064, for a total authorized contract amount not to exceed \$60,868,695.	2/28/2019

Civil Final Design Overview

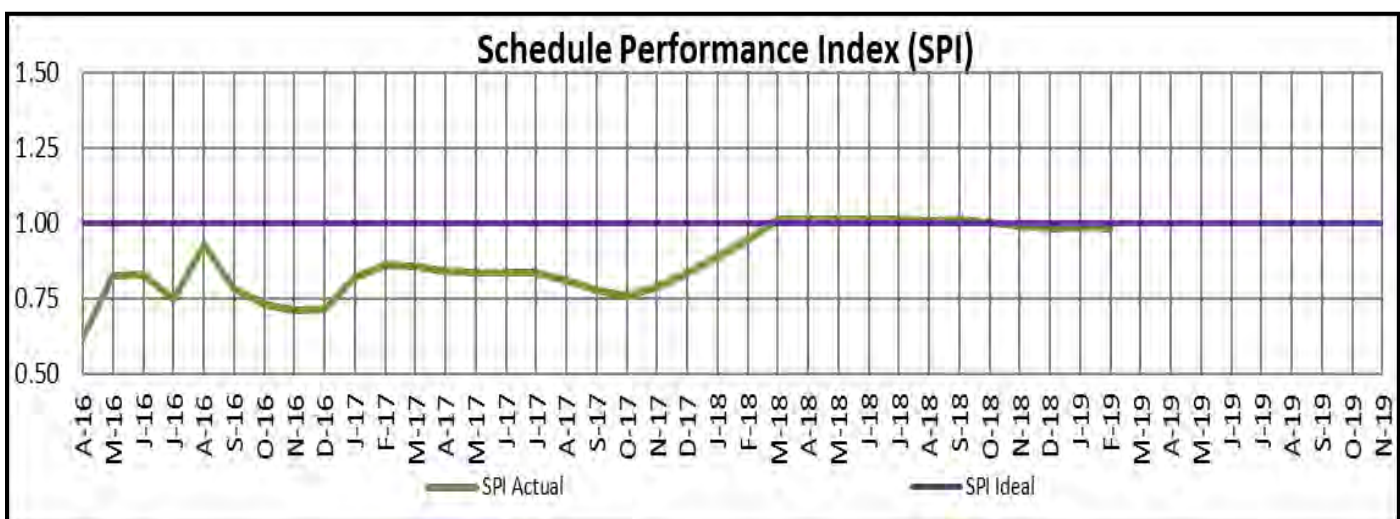
Sound Transit executed a professional services contract with HNTB Jacobs in April 2016 to perform civil final design along the entire Lynnwood Link alignment. Design services include preparation of comprehensive civil contract documents for construction, design coordination and cooperation with the GC/CM contractors, permit support, survey, geotechnical investigations, right-of-way planning and acquisition support, third party coordination support, risk assessment support, value engineering and constructability support, building and station systems design, cost estimating, and sustainability reports.

Current Progress

- Submitted 185th Station 90% design.
- Submitted updates for the L200 & L300 100% guideway and civil design.
- Started work on 100% design for 145th Station and Garage and 185th Station.
- Started work on 90% design for 185th Garage.
- Started work on 100% design for L300 Stations and Garages.

Schedule Performance Index

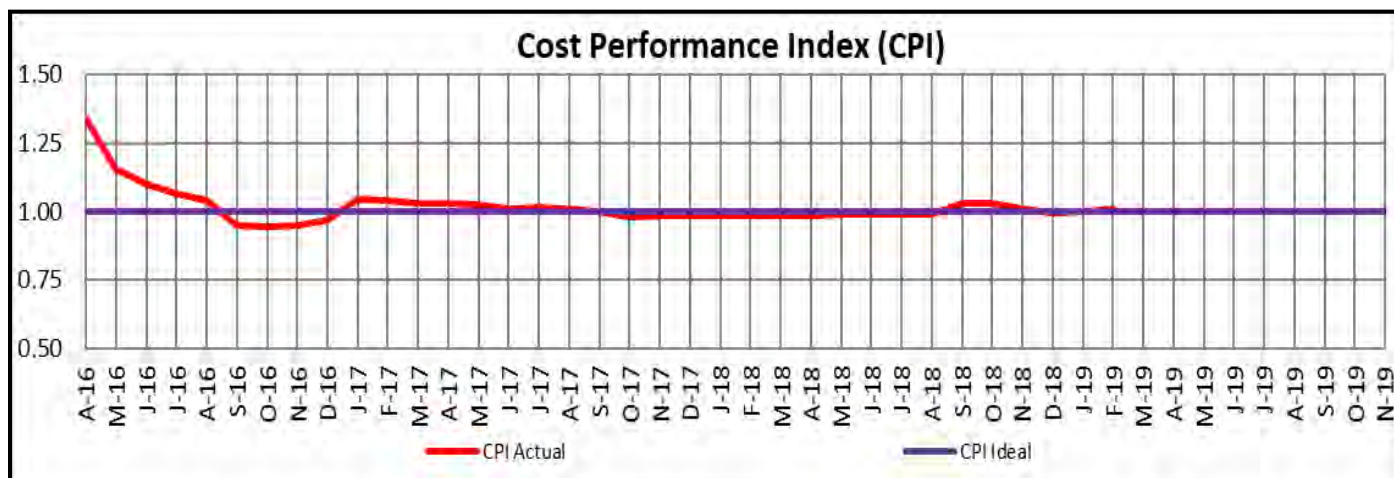
The cumulative Schedule Performance Index (SPI) trends at 0.99 through February 2019, which means that the cumulative amount of work accomplished is close to the value of work planned.



Link Light Rail Lynnwood Link Extension

Cost Performance Index

\$88.2 M of the total contract amount, 87%, has been spent through February 2019. The civil final design percent complete is 88%, with an earned value of \$88.8 M. The cumulative Cost Performance Index (CPI) through February is 1.01 indicating that actual costs are close to the earned value of work performed.



Cost Summary

Contract	Cumulative To-date
Amount Invoiced	\$88.2 M
% Spent	87%
Earned Value	\$88.8 M
% Complete	88%
SPI	0.98
CPI	1.01



Lynnwood Link project staff engage with attendees at an open house meeting.

Systems Final Design Overview

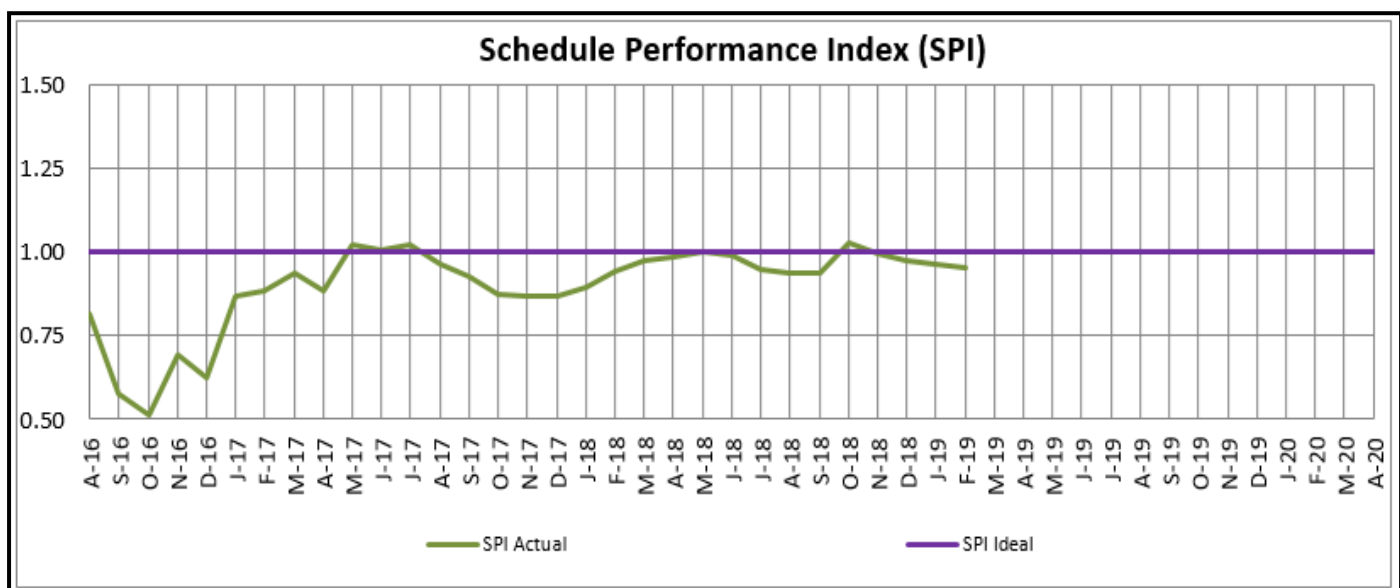
Sound Transit executed a professional services contract with LTK Engineering in July 2016 to perform systems final design along the entire Lynnwood Link alignment. Design services include preparation of comprehensive systems contract documents for construction, design coordination and cooperation with the civil final designer and GC/CM contractors, permit support, third party coordination support, risk assessment support, value engineering and constructability support, schedules and cost estimating.

Current Progress

- Performed review of civil design submittals.
- Developed new signals installation drawings for bonding of floating slab impedance and rail expansion joint.
- Signal System - 90% drawings mark-ups complete.

Schedule Performance Index

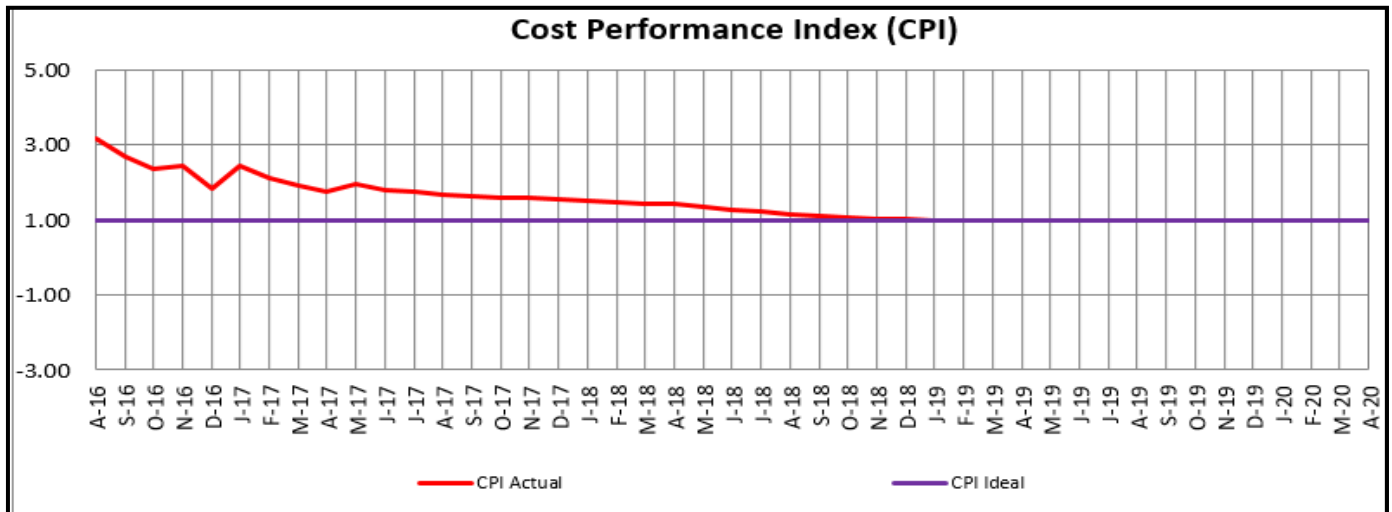
The cumulative Schedule Performance Index (SPI) trends at 0.95 through February 2019, which means that cumulative amount of work accomplished is slightly lower than the value of work planned.



Link Light Rail Lynnwood Link Extension

Cost Performance Index

\$7.4 M of the total contract amount, which is 79.6%, has been spent through February 2019. The systems final design percent complete is 79.1%, with an earned value of \$7.4M. The cumulative Cost Performance Index (CPI) 0.99 indicating that actual costs are close to the earned value of work performed.



Cost Summary

Contract	Cumulative To-date
Amount Invoiced	\$7.4M
% Spent	79.6%
Earned Value	\$7.4M
% Complete	79.1%
SPI	0.95
CPI	0.99



Outreach staff engaging with the community at the Celebrate Shoreline festival in August 2018.

GC/CM Pre-Con - L300 NE 200th St. to Lynnwood Transit Center

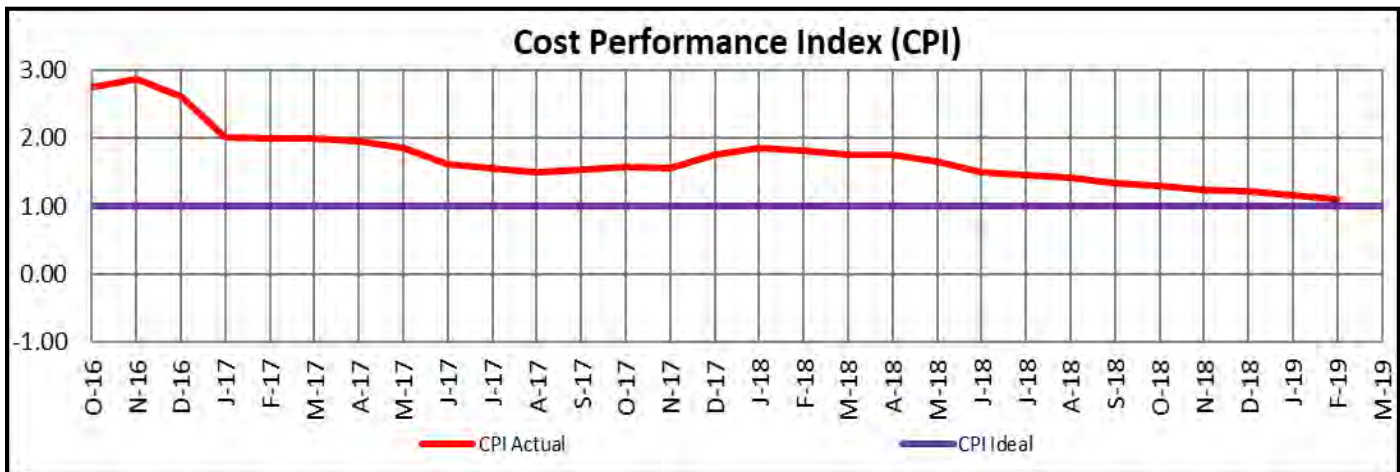
Sound Transit executed a professional services contract with Skanska in October 2016 to perform pre-construction services for the L300 segment, including assistance in preparation of final construction plans including traffic control, preparation of schedules, reviewing right-of-way needs, identifying potential early work, assisting in risk assessments, value engineering and constructability workshops, preparing cost estimates, and completing reviews of contract documents.

Current Progress

- Coordinated meetings with design, Construction Management Consultant (CMC), and Sound Transit teams.
- Progress on various pre-construction activities including cost estimating, schedules, and constructability review.
- Preparation for award and execution of L300 contract for early work.

Cost Performance Index

\$4.9 M of the total contract amount, 92%, has been spent through February 2019, with an earned value of \$5.3 M. The cumulative Cost Performance Index (CPI) is 1.09, indicating that expenditures are lower than expected for the earned value of work performed.



Cost Summary

Contract	Cumulative To-date
Amount Invoiced	\$4.9 M
% Spent	92%
Earned Value	\$5.3 M
CPI	1.09

Link Light Rail Lynnwood Link Extension



Contract L200 GC/CM - Northgate to NE 200th Street

Current Progress

The ST Board approved the L200 construction contract with Stacy & Witbeck– Kiewit– Hoffman JV (SKH) for early work scope in December 2018. This period, SKH performed the following work:

- Began site office buildout.
- Started site water discharge plans.
- Continued development of contract baseline schedule.
- Continued contract submittal requirements to begin physical work (safety, environmental, etc.)

SKH is currently developing the contract baseline schedule. Schedule reporting will begin in March 2019.

Next Period Activities

- Continue contract submittal requirements.
- Finalize site office buildout.
- Submit baseline schedule.

Closely Monitored Issues:

- None to note.

Cost Summary

Financial Status	Amount
L200 Contractor - SKH	
Original Contract Value	\$ 88,147,258
Change Order Value	\$ 500,000
Current Contract Value	\$ 88,647,258
Total Actual Cost (Incurred to Date)	\$ 11,710,388
Financial Percent Complete	13.0%
Physical Percent Complete	0.0%
Authorized Contingency	\$ 6,170,342
Contingency Drawdown	\$ 500,000
Contingency Index	1.6

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Link Light Rail I-90 Two-Way Transit & HOV Operations (Stage 3)



Project Summary

Scope

The I-90 Two-Way Transit and HOV Operations (Stage 3) project provides approximately four miles of HOV lanes in each direction of the outer roadway between 80th Avenue South on Mercer Island and Rainier Avenue in Seattle. The project includes upgrades and retrofits to the fire, life, safety, and other systems in the Mount Baker and Mercer Island/First Hill tunnels. The project also includes remaining dowel bar retrofit work on the west side of Lake Washington, and the installation of screening on the shared-use pathway on the I-90 floating bridge.



Since June 2017, the project has provided 24/7 HOV access on I-90 between Seattle, Mercer Island and Bellevue.

Phase

Construction

Budget

\$225.6 Million

Schedule

Construction Complete: 1st QTR 2019

Major Contracts

	Scope	Agreement/Contract Amount
WSDOT	Final Design	\$ 20,942,000
WSDOT	CM Services	\$ 39,188,449
IMCO	Construction	\$131,515,559
City of Mercer Isl.	Transportation Mitigation	\$10,050,000

Key Project Activities

- **Work Outside the Tunnels** – Advanced project closeout and materials acceptance documentation
- **Mercer Island Tunnel** – Work to complete punch list items
- **Mount Baker Ridge Tunnel** – Progressed resolution of Fire/Life Safety systems punch list items
- **SCADA** – Began WSDOT final reviews of systems integration
- **Simplex** – Continued completion of punch list & resolution of remaining programming issues

Closely Monitored Issues

While the center roadway turnover to Sound Transit was completed on schedule, Substantial Completion continues to slip; achievement of Substantial Completion is anticipated for 2nd QTR 2019, due to the following:

- Challenges continue with final commissioning of the Fire/Life/Safety Systems, including incomplete Building Information Modeling (BIM) As-Built data, incomplete or missing Operations & Maintenance manuals, and missing test reports;
- Ongoing resolution of irrigation system issues; and
- Unresolved issues with multiple punch list items.

Project Cost Summary

The following tables summarize the cost information for the I-90 Two- way Transit and HOV Operations (Stage 3) project. WSDOT has caught up on their invoice submittals, allowing resolution to past over-accruals and a more realistic expenditure forecast. February's Project expenditure was \$208.3K. Tables below are in millions.

Cost Summary by Phase

Project Phase	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$3.6	\$3.6	\$2.3	\$2.3	\$3.6	\$0.0
Preliminary Engineering	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5	\$0.0
Final Design	\$22.1	\$22.1	\$18.7	\$18.1	\$22.1	\$0.0
Construction Services	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
3rd Party Agreements	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Construction	\$198.3	\$198.3	\$184.2	\$169.9	\$198.3	\$0.0
Total	\$225.6	\$225.6	\$205.2	\$191.8	\$225.6	\$0.0

Totals may not equal column sums due to rounding of line entries.

Cost Summary by SCC

SCC Element	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
40 Sitework & Special Conditions	\$180.6	\$190.7	\$184.2	\$169.9	\$190.7	\$0.0
80 Professional Services	\$26.3	\$26.3	\$22.6	\$21.9	\$26.3	\$0.0
90 Unallocated Contingency	\$18.7	\$8.7	\$0.0	\$0.0	\$8.7	\$0.0
Total	\$225.6	\$225.6	\$205.2	\$191.8	\$225.6	\$0.0

Totals may not equal column sums due to rounding of line entries.

Link Light Rail I-90 Two-Way Transit & HOV Operations (Stage 3)

Cost Contingency Management

In the table below, the Allocated Contingency includes both WSDOT-controlled construction contingency and the total ST-controlled allocated contingencies. The increase to the Current Contingency Amount from the last period is due to WSDOT not executing change orders to the contract. This results in a net 0.2% increase from last month to the overall Current Contingency % when compared to the remaining work budgeted.

Contingency Status	Baseline		Current	
	Amount	% of Total	Amount	Contingency as a % of Work Remaining
Design Allowance	\$0.0	0.0%	\$0.0	0.0%
Committed Allocated Contingency	\$17.0	7.5%	\$1.9	5.6%
Unallocated Contingency	\$18.7	8.3%	\$8.7	25.6%
Total:	\$35.7	15.8%	\$10.6	31.2%

NOTE: CTG as % of Work Remaining is calculated as % of Budget Remaining

Project Schedule

Project Milestones for construction are indicated below; forecast dates were submitted by WSDOT as anticipated dates, but have not at this time been accepted. Ongoing negotiations between WSDOT and the contractor to resolve commercial issues continue to push out the forecast Substantial and Physical Completion dates, now anticipated for 2nd QTR 2019.

Contract	Final Tunnel Commissioning Complete		Substantial Completion		Center Roadway Turnover		Physical Completion	
	Baseline	Forecast / Actual	Baseline	Forecast / Actual	Baseline	Forecast / Actual	Baseline	Forecast / Actual
I-90 Two-Way Transit & HOV Operations Stage 3	2/16/2017	Q2/2019	2/20/2017	Q2/2019	5/31/2017	6/14/2017 A	5/31/2017	Q2/2019

Changes from previous update are indicated in **RED**; A indicates Actual



Landscaping at detention pond, Mercer Island

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Link Light Rail East Link Extension

Project Summary

Scope

Limits Fourteen-mile extension from Downtown Seattle to Mercer Island, Bellevue and the Overlake area of Redmond.

Alignment East Link Extension expands light rail to East King County via I-90 from Downtown Seattle to the Overlake Transit Center area of Redmond.

Stations Judkins Park, Mercer Island, South Bellevue, East Main, Bellevue Downtown, Wilburton, Spring District/120th, Bel-Red/130th, Overlake Village (OVS) and Redmond Technology (RTS).

Systems Signals, traction electrification, and communications (SCADA).

Phase Construction

Budget \$3.677 Billion (Baseline April 2015)

Schedule Revenue Service: June 2023



Map of East Link Extension Alignment.

Key Project Activities

Seattle to South Bellevue

- **Floating Bridge Retrofit (E130):** WSDOT's winter work constraint in effect; continued electrical retrofit for cathodic protection, seismic retrofit of approach structures. Ongoing construction of track test section.
- **Mercer Island (E130):** Ongoing electrical & structural retrofits at MI Tunnel; continue structure & utility construction at Mercer Island Station; direct fixation track installation and ballasted track construction
- **IDS to Mt. Baker Tunnel (E130):** Ongoing tunnel electrical & structural retrofits; progress on Judkins Park Station structures and utilities. Continued retrofit of approach structures adjacent to the floating bridge.

South Bellevue to Redmond

- **South Bellevue (E320):** Continued long span work over I-90, completed setting all tub girders and continued aerial guideway work and trenching for 112th Ave undercrossing. Progressed parking garage work to top level on South side.
- **Downtown Bellevue Tunnel (E330):** Completed sprayed waterproofing and placed protection layer in the tunnel invert. Continued rebar, concrete placement and installation of drain pipe and electrical conduits in the tunnel invert.
- **Downtown Bellevue to Spring District (E335):** Set shoring towers, rebar and formwork for north portal roof slabs. Begun post-tensioning and installation of emergency guardrails on aerial guideway. Continued installation of grade level utilities and wall foundation work at the east end of Bellevue Downtown Station.
- **Bel-Red (E340):** Continued placing end diaphragms, forming bridge deck at the aerial guideway. Resumed grading and wall backfill at 130th Station. Prepared and began plantings at west tributary mitigation site.
- **SR520 to Redmond Technology Station (E360):** Design – Sweeper Site 100% design advanced to submittal, Landscape and Restoration IFC submittal preparation. Construction – Aerial guideway progressed with girder erection. Redmond Technology Station Garage continues and Overlake Village Station and Pedestrian Bridge ongoing.
- **Systems (E750):** Continued with submittals, components, product design, and Coordinated Installation Plan discussions.

Closely Monitored Issues

- Completing remaining property acquisitions and easements from both public and private owners.
- Timely submissions and issuance of construction permits.
- With ongoing construction in all segments, quality, construction safety and environment compliance are priorities.
- Unidentified commercial utility connections within roadways and private properties continues to be challenging.

Project Cost Summary

The project cost is summarized below in two cost categories. The first table summarizes costs in accordance with Sound Transit's budget Work Breakdown Structure (WBS). The second table summarizes costs in accordance with the FTA's Standard Cost Categories (SCC) format. The figures in both tables are shown in millions.

The Estimated Final Cost (EFC) remains the same at approximately \$3.68B. This period's expenditure is at \$34.2M, pushes the total expenditure to date from \$1.71B to \$1.74B. Project commitments rose to over \$3B with all major construction contracts in place and construction is on-going throughout the alignment. This period's cost performance is somewhat impacted by February's weather events but is anticipate to be made up throughout the current year.

Cost Summary by Phase

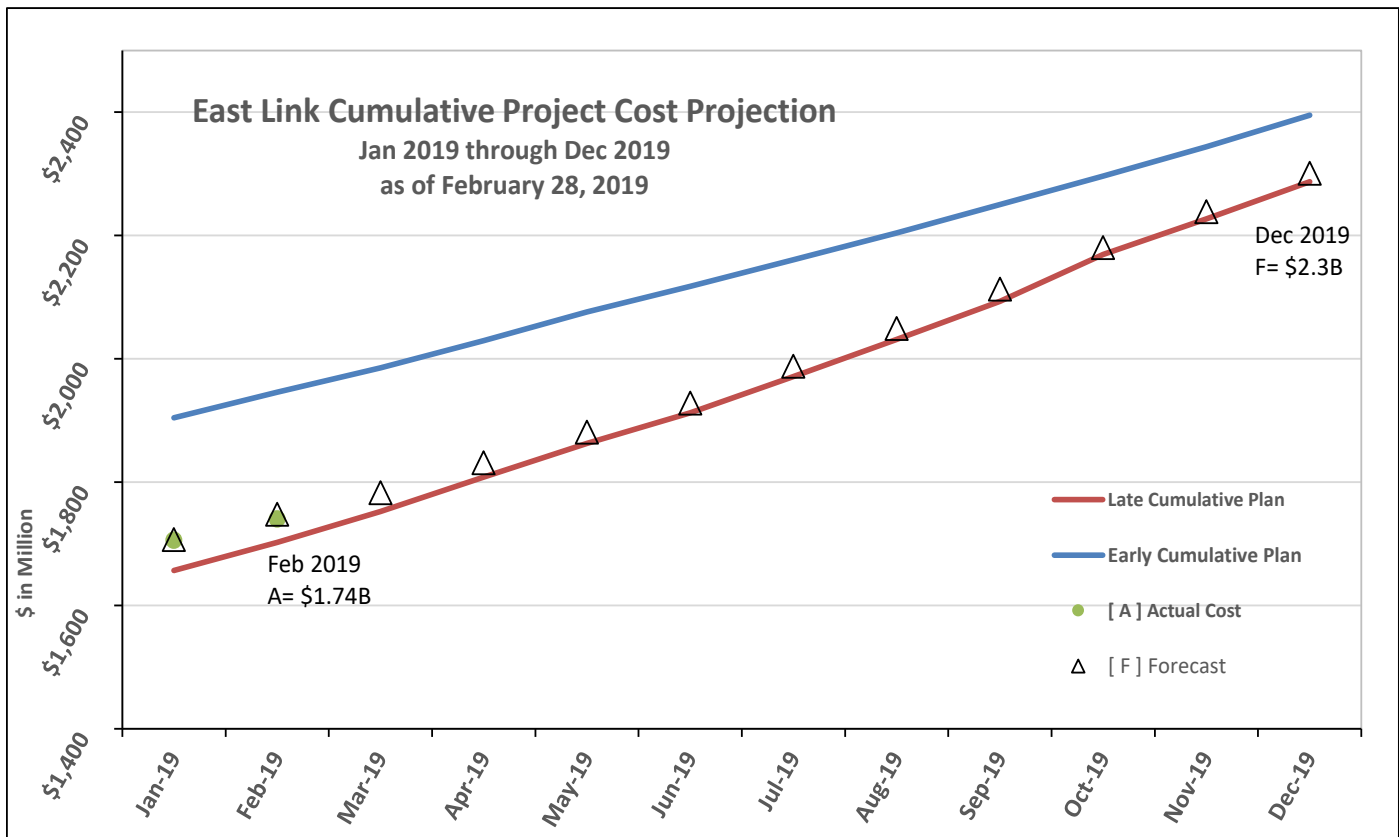
Project Phase	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$186.2	\$186.2	\$79.0	\$78.8	\$186.2	\$0.0
Preliminary Engineering	\$55.9	\$55.9	\$54.8	\$54.8	\$55.9	\$0.0
Final Design	\$283.0	\$283.0	\$245.6	\$214.2	\$283.0	\$0.0
Construction Services	\$257.5	\$257.5	\$196.7	\$84.7	\$257.5	\$0.0
3rd Party Agreements	\$52.2	\$52.2	\$38.5	\$22.7	\$52.2	\$0.0
Construction	\$2,544.3	\$2,544.3	\$2,159.3	\$1,016.5	\$2,544.3	\$0.0
Light Rail Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$298.2	\$298.2	\$269.4	\$268.3	\$298.2	\$0.0
Total	\$3,677.2	\$3,677.2	\$3,043.3	\$1,740.1	\$3,677.1	\$0.0

Cost Summary by SCC

SCC Element	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
10 Guideway & Track	\$744.6	\$949.7	\$892.2	\$497.6	\$957.6	(\$213.0)
20 Stations	\$397.7	\$474.2	\$435.0	\$164.3	\$469.8	(\$72.1)
30 Support Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$808.5	\$568.3	\$462.1	\$275.8	\$602.4	\$206.1
50 Systems	\$353.8	\$367.9	\$347.3	\$65.3	\$330.2	\$23.6
Construction Subtotal (10 - 50)	\$2,304.6	\$2,360.1	\$2,136.6	\$1,003.0	\$2,360.0	(\$55.4)
60 Row, Land	\$288.5	\$288.5	\$269.4	\$268.3	\$288.5	\$0.0
70 Vehicles (non-revenue)	\$2.8	\$2.8	\$0.0	\$0.0	\$2.8	\$0.0
80 Professional Services	\$898.4	\$889.1	\$637.3	\$468.8	\$889.3	\$9.1
90 Unallocated Contingency	\$182.9	\$136.6	\$0.0	\$0.0	\$136.6	\$46.2
Total (10 - 90)	\$3,677.2	\$3,677.2	\$3,043.3	\$1,740.1	\$3,677.1	\$0.0

Project Cash Flow Projection

The East Link cost projection continues to progress within the planned expenditure as construction activities continue to pickup. This period's project expenditure topped out at approximately \$34.2M where Construction Phase is responsible for about 85% or approximately \$29M of February's expenditure. Total project cost incurred to date topped \$1.74B, to which about \$1,016M was recorded in the Construction Phase. The project expenditures continue to pick up and is predicted to rise to approximately \$2.3B by December 2019, taking into consideration slower winter construction activities.



Risk Management

The Risk and Contingency Management Plan (RCMP) establishes a risk management and oversight process for identifying, assessing, and monitoring risks and develops risk reduction/mitigation plans. It provides a tool for the project team to proactively manage risks on the project. It is Sound Transit's responsibility for continuously monitoring project status and associated risks.

The 4th QTR 2018 risks updates have been completed. The Risk Mitigation Milestone #4(completion of SEM Tunneling) report is completed and given the current risk profile in the project, there are sufficient schedule and budget in the project to complete in accordance to baseline. The 1st QTR 2019 risk update is currently being coordinated. The following are the current top project wide risks areas:

- Coordination and completion of the relocations of public and private utilities.
- Compliance with environmental requirements.
- Competitiveness in the construction market and potential shortage of skilled labor.
- Interfaces between various contracts and third party jurisdictions.

Contingency Management

East Link project budget was baselined on April 2015 with a total contingency of \$795.9M. At the end of this period, all major construction contracts have been procured, the total contingency balance stands at \$411.0M (previously \$412.3). The current contingency balance is consistent with the project's planned contingency drawdown.

Design Allowance (DA) was established to account for unquantified scope at the time of the cost estimate. DA is unchanged this period with a balance at \$3.6M and is expected to be fully drawn when all construction scope are executed.

Allocated Contingency (AC) is used to address risks, complexity and unforeseen conditions during the execution of work, including procurement. This period, AC decreased by a net amount of approximately \$1.2M bring the AC to \$270.8M. The contingency draw in this period is primarily driven by aggregation of construction change orders in the project, primarily the construction contracts.

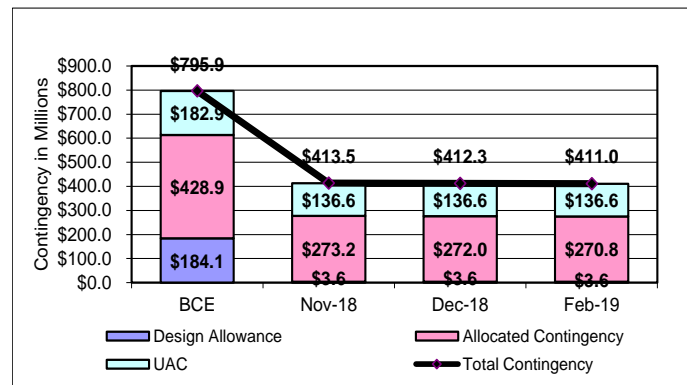
Unallocated Contingency (UAC) is used to address general project-wide cost risks and uncertainties. The UAC balance remains unchanged at \$136.6M.

Contingency Status

Contingency Type	Baseline		Current Status	
	Amount	% of Total Budget	Amount Remaining	% of Work Remaining
Design Allowance	\$184.1	5.0%	\$3.6	0.2%
Allocated Contingency	\$428.9	11.7%	\$270.8	14.0%
Unallocated Contingency	\$182.9	5.0%	\$136.6	7.1%
Total	\$795.9	21.6%	\$411.0	21.2%

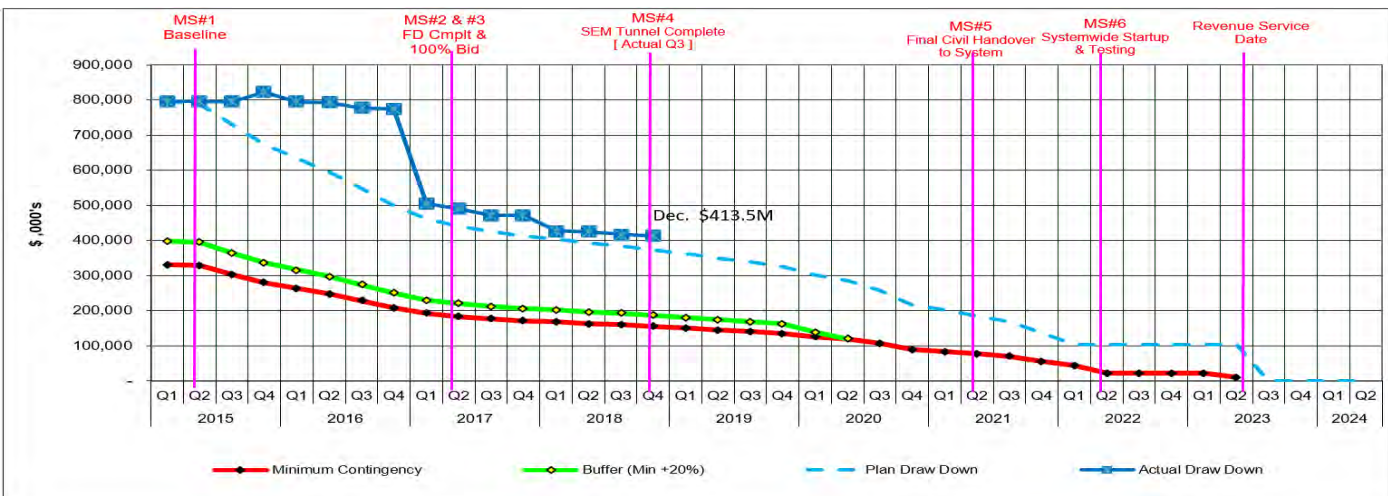
Table figures are shown in millions.

Contingency by Type



Contingency Drawdown

At the end of the 4th QTR 2018, East Link Project's total contingency drawdown plan is trending within plan with an overall balance was approximately \$413.5M and with all major construction contracts procured, remains above the baseline draw down projection and well above both the minimum contingency and the buffered (minimum plus 20%) contingency levels. The contingencies at the end of December represented a draw of \$4.4M in the 4th QTR. The next update will be end of 1st QTR 2019.



Contingency Drawdown as of December 31, 2018

Link Light Rail East Link Extension



Project Schedule

The Integrated Master Schedule is presented below. Major weather events in the month of February resulted in 1-2 weeks of lost productivity for each contract. There is sufficient float available to absorb all delays without impact to Revenue Service.

E130 continued placing ballasted track on the East Channel Bridge; continued civil and structural work at Judkins Park Station; continued concrete placement for the platform at Mercer Island Station.

E320 continued long-span segmental work over I-90; prepared track subgrade and installed under-track drainage; continued trench work at 112th undercrossing.

E330 completed installation of spray applied waterproofing and placed protection layer in the invert and the tunnel rib.

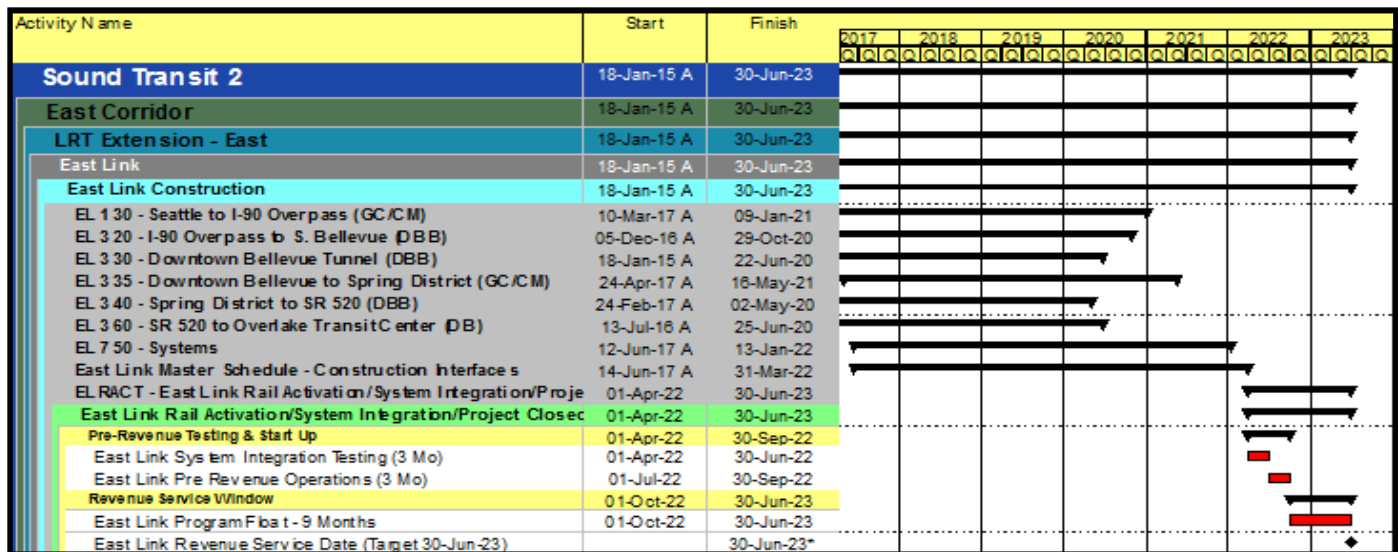
E335 continued formwork and concrete placement for walls and decks at stations and the cut & cover lid at the north portal; continued formwork, rebar, and concrete placement for decks, curbs, and diaphragm on aerial guideway.

E340 continued sanitary sewer installation on Spring Blvd; resumed grading at 130th Station; and continued placing diaphragms and bridge deck for the aerial guideway.

E360 continued placing girders and diaphragms. Wall placement continued, working east toward RTS. Continued RTS garage with level 2/3 columns and deck/beams.

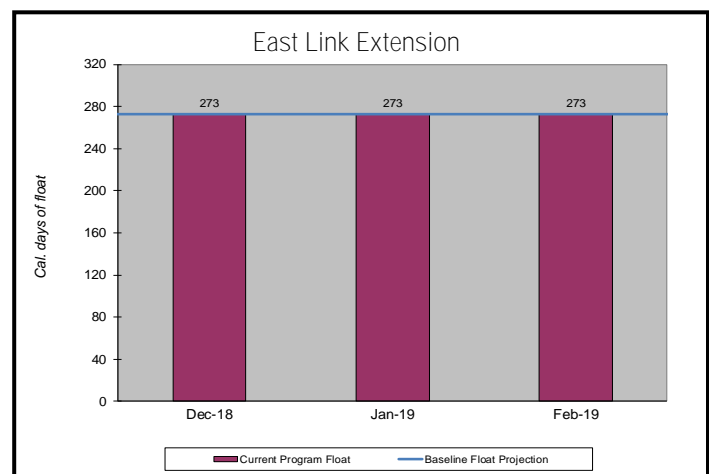
E750 Systems contractor continued product design, submittal, and procurement. Systems construction on East Link is anticipated to start on the eastern segment of E130 in Summer of 2019.

All contracts are forecast to complete on or before target. Revenue Service is forecasted in June 2023.



Project Float

East Link was baselined with 273 days of program float. No float has been used to date.



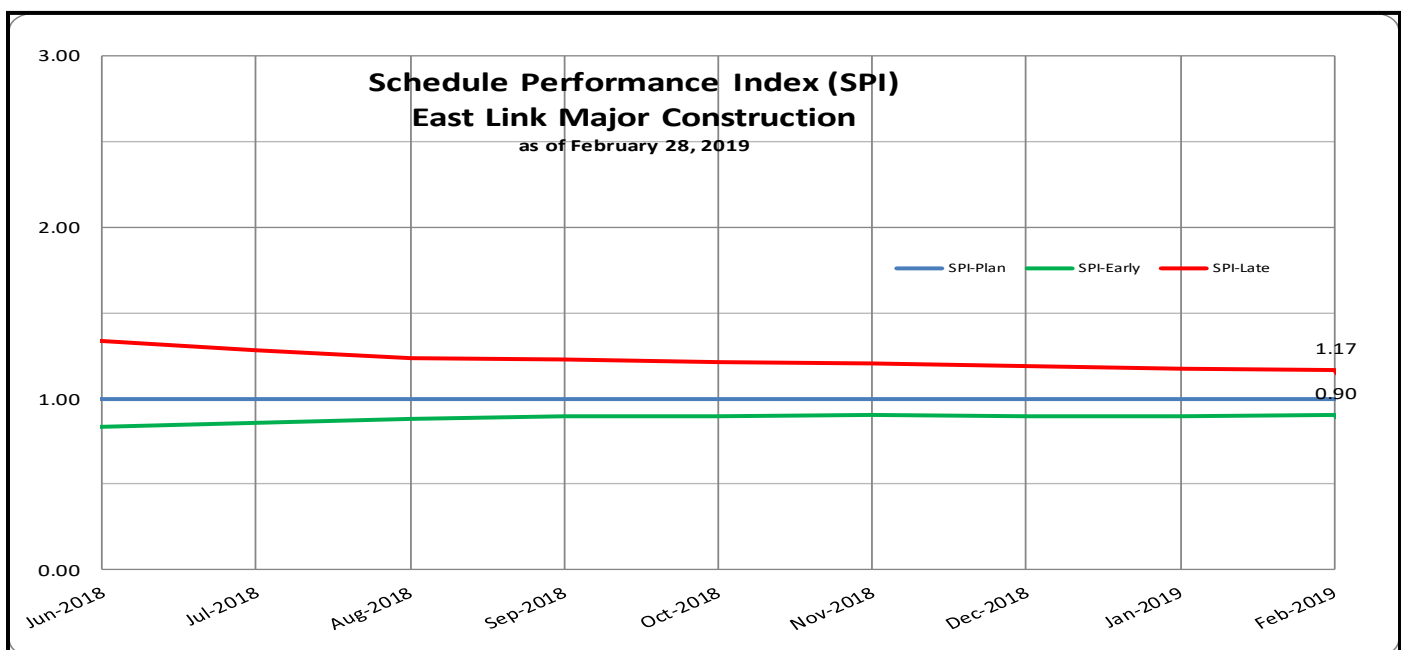
Critical Path Analysis

The East Link Critical path is currently contained entirely within the E750 Systems contract, where work has begun on signalization on North Link; the signal crew will begin work on East Link this summer. Near-critical paths along the alignment will continue to be monitored closely.

Activity Name	Start	Finish	2019				2020				2021				2022				2023			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
EL 130 - Seattle to I-90 Overpass (GC/CM)																						
EL 320 - I-90 Overpass to S. Bellevue (DBB)																						
EL 330 - Downtown Bellevue Tunnel (DBB)																						
EL 335 - Downtown Bellevue to Spring District (GC/CM)																						
EL 340 - Spring District to SR 520 (DBB)																						
EL 360 - SR 520 to Overlake Transit Center (DB)																						
EL 750 - Systems	01-Jan-19	31-Dec-21																				
E750 Construction	01-Jan-19	31-Dec-21																				
E750 Project	01-Jan-19	31-Dec-21																				
E750 Engineering	02-Nov-21	31-Dec-21																				
E750 Construction	01-Jan-19	31-Dec-21																				
E750 Milestones	31-Dec-21	31-Dec-21																				
E750 Signals	01-Jan-19	25-May-21																				
E750 Testing and Commissioning	13-May-21	01-Nov-21																				
East Link Master Schedule - Construction Interfaces	01-Jan-22	31-Mar-22																				
EL RACT - East Link Rail Activation/System Integration/Project Closeout	01-Apr-22	30-Jun-23																				
East Link Rail Activation/System Integration/Project Closeout	01-Apr-22	30-Jun-23																				
Pre-Revenue Testing & Start Up	01-Apr-22	30-Sep-22																				
East Link System Integration Testing (3 Mo)	01-Apr-22	30-Jun-22																				
East Link Pre Revenue Operations (3 Mo)	01-Jul-22	30-Sep-22																				
Revenue Service Window	01-Oct-22	30-Jun-23																				
East Link Program Float - 9 Months	01-Oct-22	30-Jun-23																				
East Link Revenue Service Date (Target 30-Jun-23)		30-Jun-23*																				

Schedule Performance Index

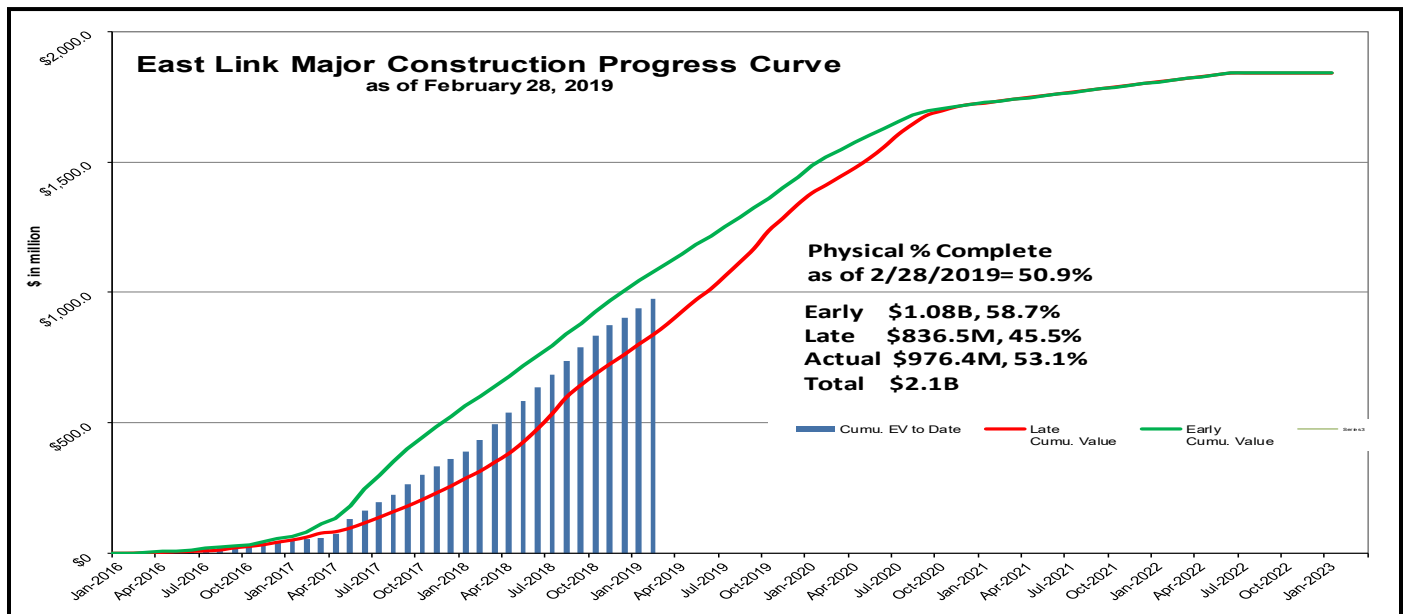
The early Schedule Performance Index (SPI) for East Link's Major Construction Packages remains at 0.9 for this period, which indicates steady performance over the past several months. The late SPI is at 1.17 showing that in general, performance is satisfactory.



Link Light Rail East Link Extension

Project Cash Flow Projection

The overall East Link Major Construction percent complete analysis is based on a weighted measurement among the seven major construction contracts' schedule, duration and cost. The graph below shows the aggregate cost progression for these construction contracts. As of the end of February, performance is trending appropriately between the early/late projection as drawn from the master schedule. The overall physical percent complete for East Link construction is at least 50.9%. Schedule percent complete for the E130 and E750 contracts is lagging by one and two months respectively due to submittal quality issues. The impact on the overall calculation is likely less than 0.5%.



E320 Crew clearing snow from track slab over I-90.

Right-of-Way

The East Link Extension involves the acquisition of a range of property interests including fee acquisitions for stations, guideway, staging areas, support facilities, and tunnel and guideway easements as well as permanent and temporary easements for construction. These acquisitions resulted in owner and tenant residential and commercial relocations. Property acquisition and relocations are mostly complete, with limited processing of relocation claims and coordination of property transfers with the City of Bellevue remaining. The right-of-way program status for this period is summarized in the following table:

East Link Ext Extension Acquisition Status					
ACQUISITION				RELOCATION	
Total Acquisitions	Board Approved	Offers Made to date	Closings to date	Relocations Required	Relocations Completed to date
237	244	234	226	227	226
* All numbers are cumulative totals, except where noted. Number of totals may differ from other reports due to the timing of reporting periods.					

Community Outreach

- Ongoing distribution of weekly construction alerts for maintenance of traffic activities for Mercer Island, Bellevue and Redmond. Coordinated many briefings and meetings with impacted neighbors about upcoming major traffic changes including but not limited to full closures.
- Ongoing engagement with individual property owners, members of the public and impacted neighbors on a variety of concerns including demolition, noise wall construction, signage, night time noise, traffic, access, maintenance of traffic, irrigation line repairs.
- Attended Mercer Island Aubrey Davis Park Master Plan Open House.
- Construction progress briefing to Bellevue City Council.



E335 Downtown Bellevue to Spring District: Bridge spanning over Highway I-405 along NE 6th Street on February 28, 2019

Sound Transit Board Actions

Board Action	Description	Date
	None this period	

Construction Safety

Data/ Measure	February 2019	Year to Date	Project to Date
Recordable Injury/Illness Cases	1	2	41
Days Away From Work Cases	0	1	8
Total Days Away From Work	28	37	421
First Aid Cases	9	18	139
Reported Near Mishaps	4	5	195
Average Number of Employees on Worksite	1,090	-	-
Total # of Hours (GC & Subs)	145,188	274,656	2,744,838
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	1.38	1.46	2.99
LTI Rate	0.00	0.73	0.58
Recordable National Average	3.10	3.10	3.10
LTI National Average	1.20	1.20	1.20
Recordable WA State Average	5.70	5.70	5.70
LTI WA State Average	2.30	2.30	2.30

Note: Due to the timing of contractor's reporting periods, the current month's numbers above are a combination of actuals and estimates. All previous months' numbers are reconciled and replaced with actuals.

Note2: Past reports included OMF East construction safety's statistics. From this current month forward, OMF East's statistic will be reported independently under the OMF East's section.

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Major Construction Contract Packages

Below are the major construction contract packages for the project with a brief scope description of each.

R8A Stage 3A – Modification of HOV Ramp between I-90 and Bellevue Way SE. [Design-bid-build]

Status: Completed and Operational.

E130 Seattle to South Bellevue – International District Station (IDS) modification, Retrofit of existing WSDOT structures, I-90 Center Roadway and two light rail stations. [Heavy Civil GC/CM]

Status: See following pages under Contract E130.

E320 South Bellevue – One light rail station and a parking garage at South Bellevue P&R; aerial, at-grade and retained-cut guideway along Bellevue Way SE and 112th Avenue SE. [Design-bid-build]

Status: See following pages under Contract E320.

E330 Downtown Bellevue Tunnel – SEM Tunneling along 110th Ave. NE in Downtown Bellevue. [Design-bid-build]

Status: See following pages under Contract E330.

E335 Downtown Bellevue to Spring District – Four light rail stations; aerial, at-grade and retained-cut guideway from Downtown Bellevue, over I-405 to 124th Ave. NE. [Heavy Civil GC/CM]

Status: See following pages under Contract E335.

E340 Bel-Red – One light rail station, aerial and at-grade guideway from 124th Ave. NE to NE 20th. [Design-bid-build]

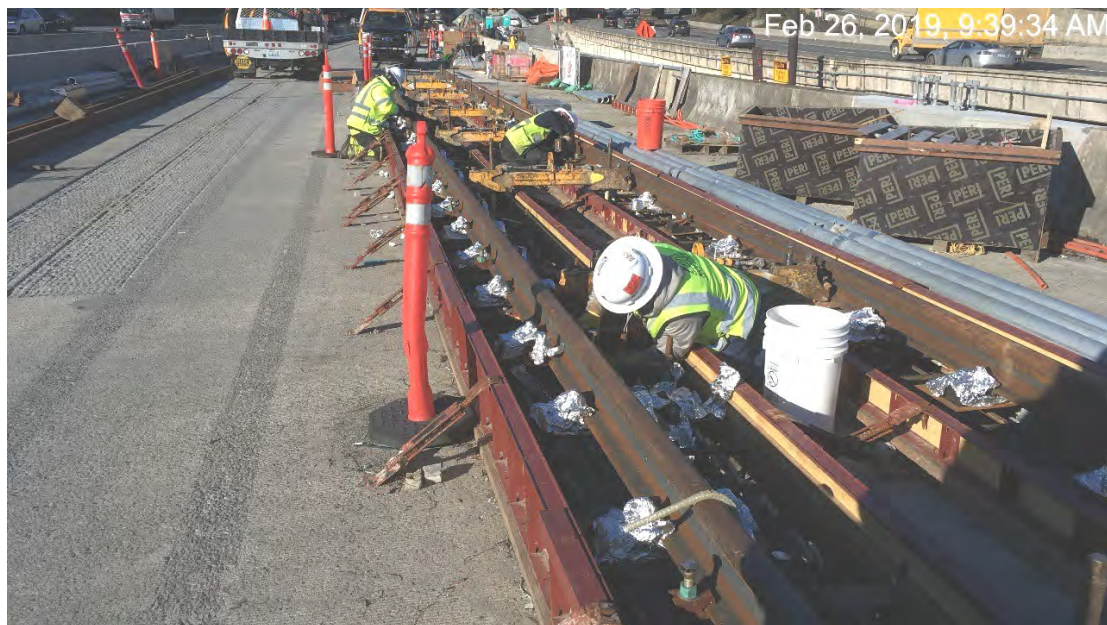
Status: See following pages under Contract E340.

E360 SR520 to Redmond Technology Station – Two light rail stations; aerial and retained-cut guideway along SR-520 in the Overlake area of Bellevue and Redmond. [Design-Build]

Status: See following pages under Contract E360.

E750 Systems – Light rail systems elements, including Traction Power Electrification, Overhead Catenary System, Train Signals and Communication System. Combined with Northgate Link N830. [Heavy Civil GC/CM]

Status: Contractor continues with critical submittal, reviews of plans, component and product designs as well as meetings with civil contractors with regards to the Coordinated Installation Plan (CIP).



E130 Seattle to South Bellevue: Track work progressing along I-90

Contract E130 – Seattle to South Bellevue Heavy Civil GC/CM

Current Progress

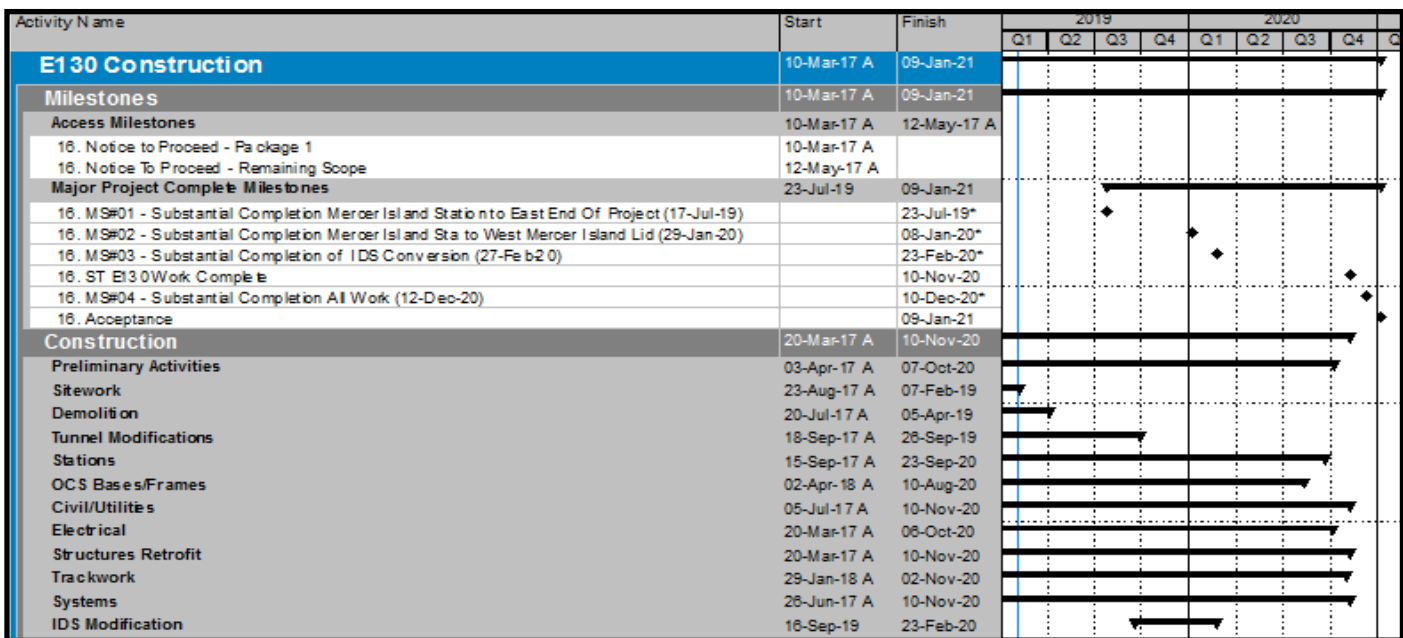
West Segment: Ongoing tunnel electrical & structural retrofits; progress on Judkins Park Station structures and utilities.

Center Segment: WSDOT's winter work constraint in effect; electrical retrofit for cathodic protection and seismic retrofit of approach structures; construction of track test section.

East Segment: Ongoing electrical & structural retrofits at MI Tunnel; structure & utility construction at Mercer Island Station; direct fixation track installation and ballasted track construction.

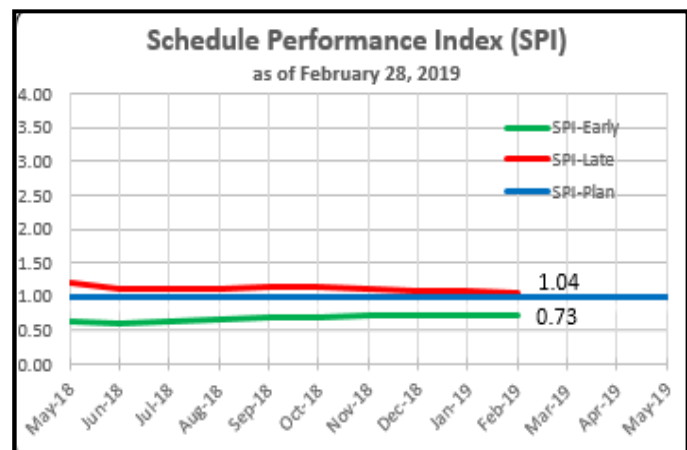
Schedule Summary

The critical path for this project continues to run through Judkins Park Station. The contractor's January update is presented below. The February update was rejected due to excessive negative float. Recovery efforts are currently underway.



Schedule Performance Index

This period, the SPI early is 0.73, SPI late is 1.04. The early index indicates the Contractor is behind their early finish plans; the late index shows the Contractor remains on target with their late finish plan. Challenges were encountered in the initial phases of the post-tensioning scope; current figures indicate the Contractor continues to catch up to their baseline plan. WSDOT's winter work restrictions on the floating bridge will end March 31, 2019; at that time, restrictions on activities requiring ballast movement in the pontoons will be lifted.



Link Light Rail East Link Extension

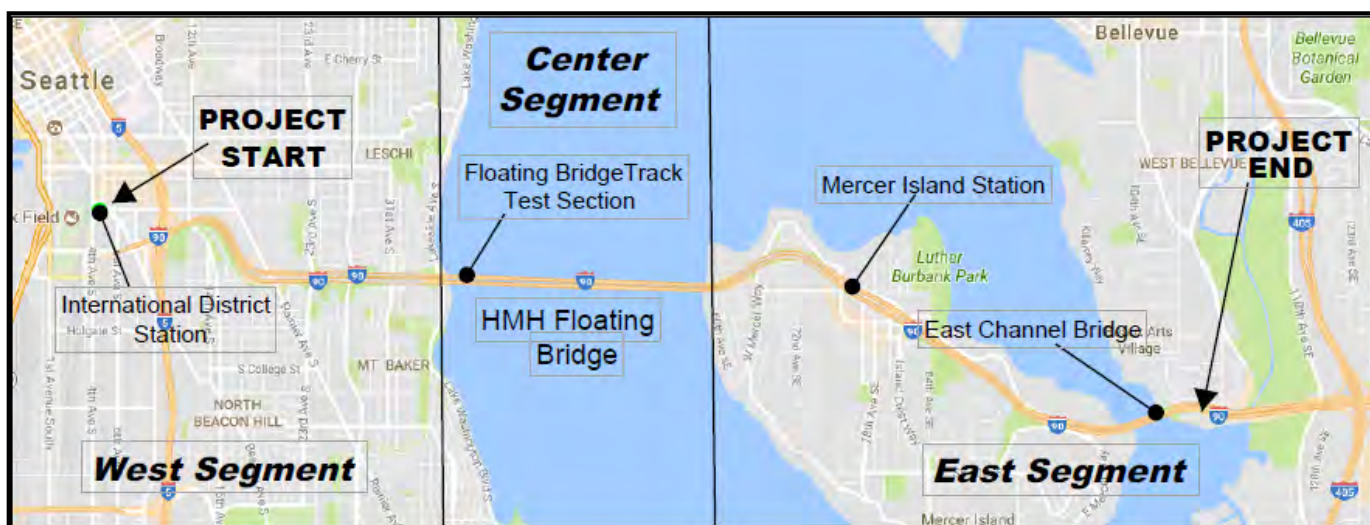
Next Period's Activities

- **West Segment:** Continue electrical and structure retrofits; Judkins Park Station construction; International District Station track survey.
- **Center Segment:** Progress on cathodic protection, approach structures seismic retrofits; prep for direct rail attachment, complete x-ray work.
- **East Segment:** Ongoing electrical & structure retrofits at MI Tunnel & E Channel Bridge; construction of stairways & utility construction at Mercer Island Station; continue ballasted track installation.

Closely Monitored Issues

- Extent of variations in the actual deck thickness on the East Channel Bridge and potential ramifications.
- Timeliness of utility service connections on Mercer Island regarding Milestone 1 and E750 interface.
- Third party coordination of rail tie-in activities at the International District Station.

E130 Construction Features



Cost Summary

Present Financial Status	Amount
E130 Contractor - Kiewit-Hoffman	
Original Contract Value (incl. Phase 2 MACC)	\$665,000,000
Change Order Value	\$19,904,736
Current Contract Value	\$683,949,736
Total Actual Cost (Incurred to Date)	\$327,397,203
Percent Complete	46.87%
Authorized Contingency	\$46,660,541
Contingency Drawdown	\$19,904,736
Contingency Index	1.1

Contract Value excludes Betterment



Installation of seismic restrainer bracket, D2 approach structure (West Segment)

Contract E320 – South Bellevue

Current Progress

I-90 Flyover: Continued long span work over I-90 via Traveler System. Continued diaphragm, deck and girder end work.

Bellevue Way SE: Continued excavation/over-excavation and building mechanically stabilized earth (MSE) wall. Prepared track subgrade & installed under track drainage.

S. Bellevue Sta./P&R: Progressed construction of parking garage; pour vertical elements and pour/cure level two of the North side of garage. Continued construction of station, poured elevator and escalator walls.

Wye-to-East Main: Continued trench work at 112th undercrossing; continued fill/grade embankment on East side of 112th and installed 6" - 8" under drains at the West wall undercrossing. Continued excavation to subgrade North of SE 4th to end of site.

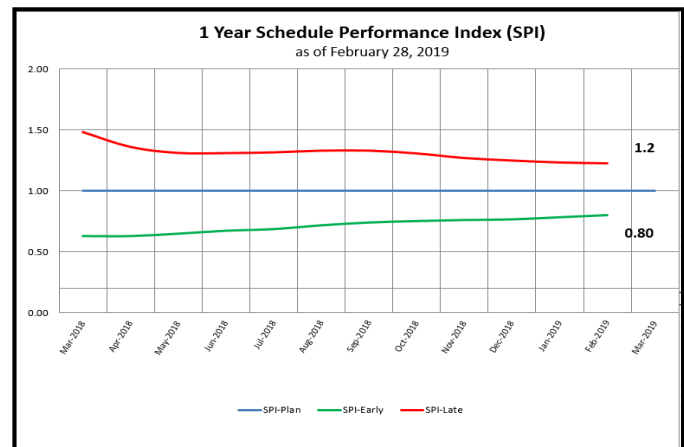
Schedule Summary

The critical path for this project currently runs through the 112th undercrossing and trench along Bellevue Way SE. The contractor is currently forecast to achieve all milestones on schedule.

Activity Name	Start	Finish	2019				2020			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
E320 Construction	05-Dec-16 A	28-Oct-20								
Milestones and Summary	05-Dec-16 A	28-Oct-20								
Contract Milestones	05-Dec-16 A	28-Oct-20								
Limited Notice to Proceed	05-Dec-16 A									
Notice to Proceed	13-Feb-17 A									
Milestone 3A - Clear & Grub Swaylocken (Start of Wetland Fill Work+385 D)		21-Dec-18 A								
Milestone 1 - (Alternate) Phase B2.1 Not Used		03-Apr-19								
Milestone 3B - Clear & Grub Coal Creek		13-Aug-19*								
Milestone 4 - SIDA & SCADA Complete (NTP+1160D)		06-Feb-20*								
Milestone 5 - Acceptance of South Bellevue Station (NTP+1215D)		22-Jun-20*								
Milestone 2 - Final Restoration of Bellevue Way (Start+897D)		12-Aug-20								
Milestone 6 - Required Substantial Completion (NTP+1340D)		28-Oct-20*								
Construction-1	21-Apr-17 A	13-Oct-20								
Mobilization	21-Apr-17 A	16-Jul-18 A								
Area A - I-90 Mainline to Bellevue Interchange - Sta EB405+54 to EB438+20	16-Jun-17 A	10-Aug-20								
Area B - Bellevue Way SE SE 30th St to 112th Ave SE Wye - Sta EB438+20 to EB476+75	30-May-17 A	13-Oct-20								
Area C - 112th Ave SE, 112th Ave SE Wye to SE 8th - Sta EB476+75 to EB508+00	13-Jun-17 A	01-Oct-20								
Area D - 112th Ave SE to SE 8th St to Main St - Sta 508+00 to EB528+25	22-May-17 A	22-Sep-20								
Area E - Coal Creek Stream Enhancement	09-Jul-18 A	13-Aug-19								
Area F - Swaylocken Mitigation	23-Apr-18 A	21-Dec-18 A								

Schedule Performance Index

The SPI early and late remain at 0.8 and 1.2 respectively. Since the contractor's schedule updates have been inconsistent, the confidence level with the accuracy of the SPI measurements has somewhat diminished. Timely and compliant CPM schedules will restore confidence in the SPI measurements. Discussions with the Contractor are ongoing to improve with this deliverable. Currently, the 112th undercrossing is critical path, as the excavation has taken much longer than anticipated. The spread between the indexes is probably due to the frequent mitigation and out of sequence progress.



Link Light Rail East Link Extension

Next Period's Activities

I-90 Flyover: Continue long span work over I-90 via Traveler System. Continue diaphragm, deck and girder end work.

Bellevue Way SE: Continue excavation/over-excavation of trench and construction of MSE wall.

S. Bellevue Sta/P&R: Continue construction of North side of the parking garage; continue pouring elevator delay walls and installing vertical elements in station and garage.

Wye-to-East Main: Continue fill/grade of embankment on East side of 112th; begin demo work on buildings.

Closely Monitored Issues

- Working adjacent to wetland areas, environmental compliance concerns.
- Refinement to the three-lane reversible MOT on Bellevue Way SE.



Cost Summary

Present Financial Status	Amount*
E320 Contractor - Shimmick/Parsons JV.	
Original Contract Value	\$319,859,000
Change Order Value	\$1,374,295
Current Contract Value	\$321,346,284
Total Actual Cost (Incurred to Date)	\$172,413,690
Percent Complete	52.05%
Authorized Contingency	\$38,532,000
Contingency Drawdown	\$1,374,295
Contingency Index	13

* \$ Amount excludes betterments and STArt.



Progress on the southern half of parking garage.

Contract E330 – Downtown Bellevue Tunnel

Current Progress

Tunnel Invert: Completed installation of spray applied waterproofing and placed protection layer in the invert and the tunnel rib. Continued installation of drain pipe and electrical conduit. Continued rebar installation and using the mid-tunnel shaft to supply concrete for the invert concrete placement and center wall.

South Portal: Continued installing waterproofing at South Portal cut and cover exterior walls and receiving delivery tunnel liner reinforcing. Continued to maintain the temporary erosion/sediment control and the traffic control at the South Portal and at the mid-access shaft.

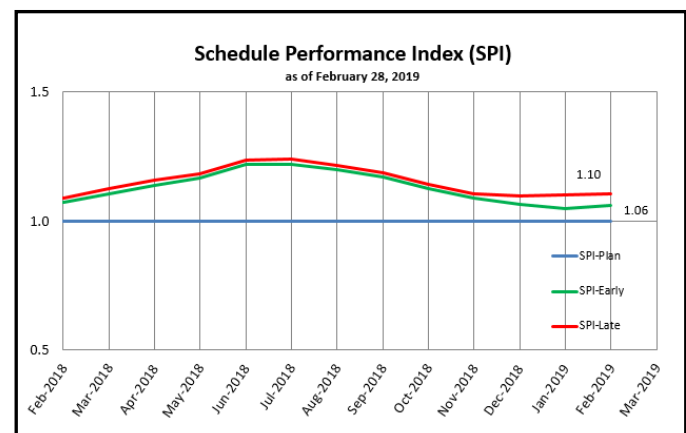
Schedule Summary

The critical path for this contract follows the final tunnel lining and the completion of the South Portal structure. The contractor is forecast to achieve Substantial Completion in time to meet their contractual requirements.

Activity Name	Start	Finish	2019				2020	
			Q1	Q2	Q3	Q4	Q1	Q2
E330 Construction	15-Dec-15 A	25-May-20						
CONSTRUCTION	15-Dec-15 A	25-May-20						
MILESTONES/CONSTRUCTION EASEMENTS	15-Dec-15 A	25-May-20						
MILESTONES	15-Dec-15 A	25-May-20						
CALCULATED MILESTONES	15-Dec-15 A	25-May-20						
L-NTP	15-Dec-15 A							
NTP	08-Feb-16 A							
MLST 1 - Acceptance of the 110th Ave Controlled Low Strength Material Work		14-Oct-16 A						
MLST 2 - Acceptance of CO #006 Work		14-Oct-16 A						
MLST 3 - Substantial Completion of all Work from Station EB 542+64.52 to Station EB 562+47.91		27-Jan-20						
MLST 4 - Substantial Completion Total Contract		25-May-20						
MOBILIZATION	08-Feb-16 A	17-May-19						
SITEWORK	29-Feb-16 A	25-May-20						
PRECONSTRUCTION	21-Mar-16 A	12-Feb-20						
TRAFFIC CONTROL	25-Mar-16 A	23-Aug-19						
SURVEY & MONITORING	29-Feb-16 A	03-May-18 A						
NORTH PORTAL AREA	13-Jun-16 A	14-Oct-16 A						
CAST IRON PIPE REPLACEMENT	08-Feb-17 A	08-Apr-17 A						
SOUTH PORTAL AREA	29-Feb-16 A	25-May-20						
SKYLINE BUILDING RETROFIT	17-Jan-17 A	18-Oct-17 A						
TUNNELING	01-Feb-17 A	02-Jan-20						
EXCAVATION	01-Feb-17 A	20-Jul-18 A						
FINAL TUNNEL LINING	20-Jul-18 A	01-Oct-19						
FINAL TUNNEL FINISHES	02-Oct-19	02-Jan-20						
MID TUNNEL	08-Mar-18 A	29-Aug-19						
DEMOBE	13-Mar-17 A	12-May-20						

Schedule Performance Index

In February, the SPI early is at 1.06 and the SPI late is at 1.10. In general the SPI curves have been trending lower eroding the earlier gains achieved during tunneling. Some of the factors contributing to the decline include tunnel surface preparation taking longer than expected and the steep learning curve associated with installation of the spray applied waterproofing. This past month also saw unprecedented snowy weather, further contributing to lower than planned production. That said, it seems like the SPI curves are leveling off and are still ahead of planned performance.



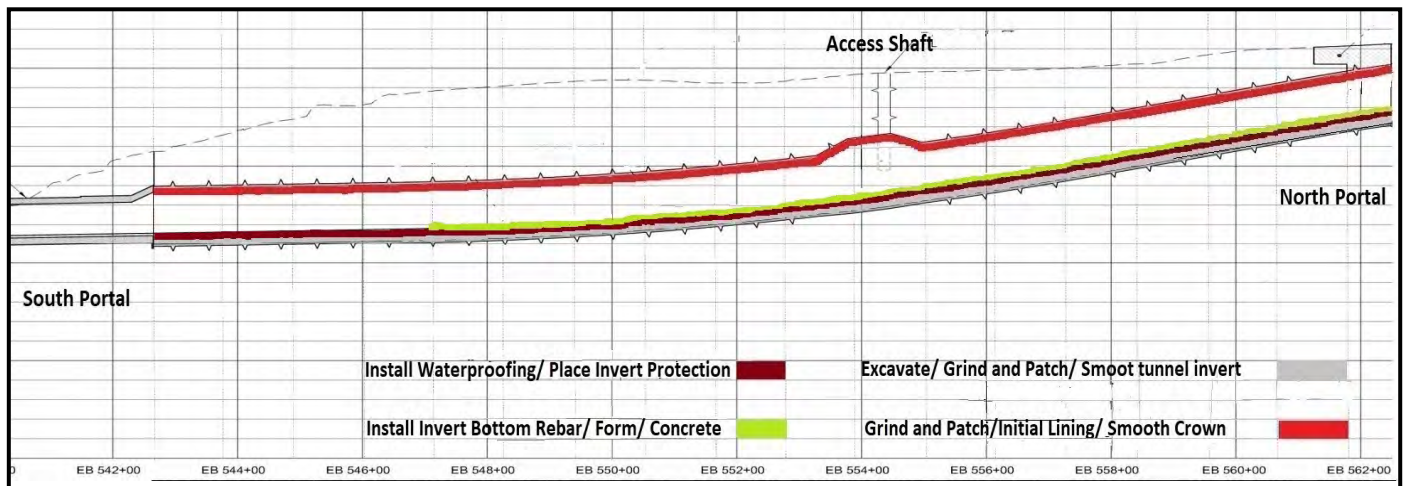
Next Period's Activities

- **Tunnel invert:** Continue rebar, drain pipe, electrical conduit installation and concrete placement.
- **South Portal:** Continue deliveries of tunnel liner reinforcing. Complete waterproofing of the South Portal and place head wall filler shotcrete. Commence forming, reinforcement and concrete placement of cut and cover invert.
- **Tunnel Crown:** Commence drill and install dowels on the tunnel crown.

Closely Monitored Issues

- Water seepage at 4th and 110th intersection during rain event due to leaking City of Bellevue utilities. The placement of the protection layer appears to have resolved impacts to the invert. However, there is potential for impacts to the tunnel crown. Sound Transit and contractor to continue monitoring the area for potential leaks during rain events.

E330 Tunnel invert excavation/ place crown smoothing layer (As of 2/28/2019)



Cost Summary

Preset Financial Status	Amount
E330 Contractor– Guy F Atkinson Construction, LLC.	
Original Contract Value	\$121,446,551
Change Order Value	\$413,564
Current Contract Value	\$121,860,115
Total Actual Cost (Incurred to Date)	\$96,466,940
Percent Complete	77.29%
Authorized Contingency	\$12,144,655
Contingency Drawdown	\$413,564
Contingency Index	22.7



Installed waterproofing at South Portal Cut and Cover.

Contract E335 – Bellevue to Spring District Heavy Civil GC/CM

Current Progress

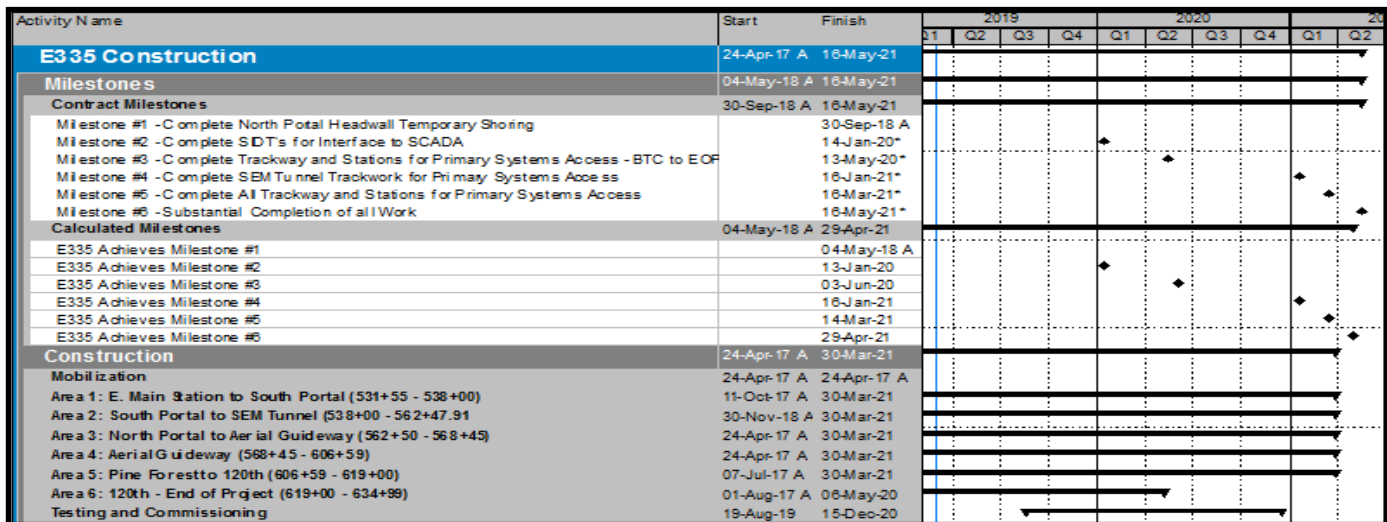
Area 3: N Portal/ Bellevue Downtown Station(BDS): Continued setting shoring tower for roof lid. Continued formwork, reinforcing, and concrete placement at the North Portal headwall. Continued utility work, footing formwork and reinforcing at BDS.

Area 4: Aerial Guideway/ Wilburton Station: Continued formwork, rebar and concrete placement for decks, curbs and diaphragm on Aerial Guideway. Commenced post-tensioning and installation of emergency guardrails. Continued underground utility work, waterproofing and pouring Elevator/ Escalator footing pits and walls at Wilburton Station.

Area 6: 120th-124th Trench/Station: Continued pouring exterior walls to south of station. Continued installation of shoring for the plaza level beams and deck. Commenced pre-fabrication of rebar cages for plaza beams. Access was gained to complete the work up to the west side of 124th street and temporary shoring was installed for Open cut excavation.

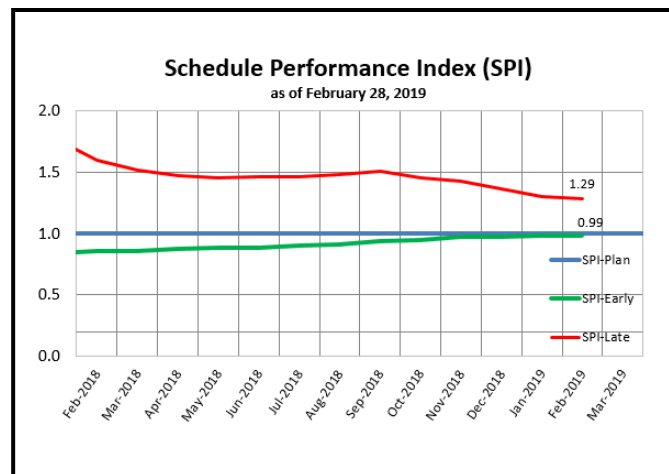
Schedule Summary

There are two primary critical paths for this contract, corresponding to the two handovers to the E750 Systems Contractor — one runs through the aerial guideway and Wilburton Station, and the other follows access to the SEM tunnel (E330 Contract) in Area 2 and goes through the South Portal and the South Portal Electrical Building. Tunnel work will not start until mid-2020. The contractor is currently 21days behind their first interface milestone (including 8 days of weather impact from February), but is expected to continue mitigating to deliver on schedule.



Schedule Performance Index

This period, the SPI early is at 0.99 and the SPI late is at 1.29. The numbers indicate that the contractor continues to lag the early plan, but well ahead of the late finish plan when compared to the baseline work. Track work has not started as baselined schedule shows in December 2018, since the delivery of special track has been delayed and also start of track construction in this area. Several activities including excavation at Sturtevant Creek, intersection work at 112th/ 6th NE and finishing access road to TPSS happening later than was baselined. In addition, this month project was impacted by the severe weather condition.



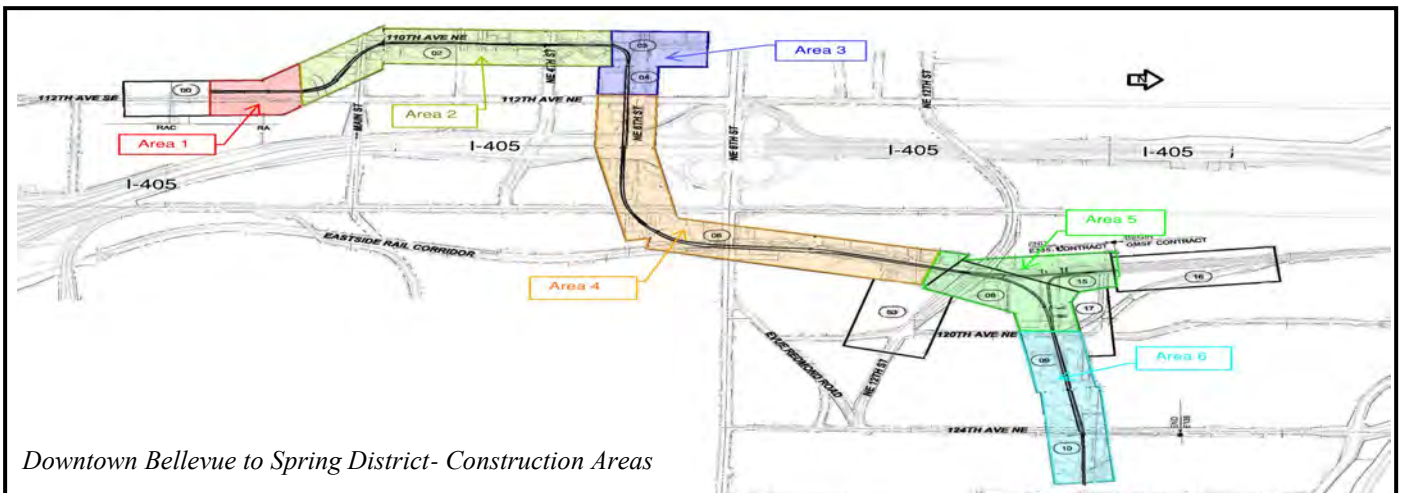
Link Light Rail East Link Extension

Next Period's Activities

- **Area 3:** N Portal/ Bellevue Down town Station (BDS): Continue set shoring towers, formwork, reinforcing, and concrete placement for lid slabs at North Portal. Continue utility work at BDS.
- **Area 4:** Aerial Guideway/Wilburton Station: Continued formwork, rebar and concrete placement for decks, curbs and diaphragm on Aerial Guideway. Install emergency guardrails. Continue utility work on Wilburton Station.
- **Area 6:** 120th-124th Trench/Station: Continue set the exterior walls. Continue installation of shoring tower, set plaza beams and commence rebar, form and pour concrete for plaza lid.

Closely Monitored Issues

- Outstanding design issues and design revisions related to stations impacted and delayed issuing permits by City of Bellevue. The revisions need to be finalized by Sound Transit and provided to contractor and coordinated with the subcontractors performing the work in order to timely installation of conduits, mechanical systems and elevator/escalators.
- The partial completion of the City of Bellevue's 124th Ave Project is necessary but it continues to be delayed. Trench walls in this area have been completed as far as possible. Shoring at 124th are installed, and the construction of the trench to 124th will start. However, work under the road cannot be completed until the 124th bridge is built and access is available.



Cost Summary

Present Financial Status	Amount
E335 Contractor– Stacy & Witbeck/Atkinson Joint Venture (SWA-JV).	
Original Contract Value (includes station scope)	\$393,798,210
Change Order Value	\$6,056,955
Current Contract Value	\$399,855,165
Total Actual Cost (Incurred to Date)	\$174,789,909
Percent Complete	54.18%
Authorized Contingency	\$19,689,911
Contingency Drawdown	\$6,056,955
Contingency Index	1.8



North Portal shoring tower (Area 3)

Contract E340 – Bel-Red

Current Progress

Aerial Guideway: Placed end diaphragms, repaired intermediate diaphragms and forming bridge deck.

130th Ave Station: Resumed grading, backfilled wall and excavated Station footprint.

NE Spring Blvd: Closure between 132nd Ave to 134th Ave. Shift traffic to one-way configuration from 134th Ave NE to 136th Pl NE, to allow work on the North half of the roadway. Resumed placement of illumination foundations/conduit.

136th Pl NE: Placed conduit for signals, system duct bank, irrigation. Completed tie-in for gas crossing.

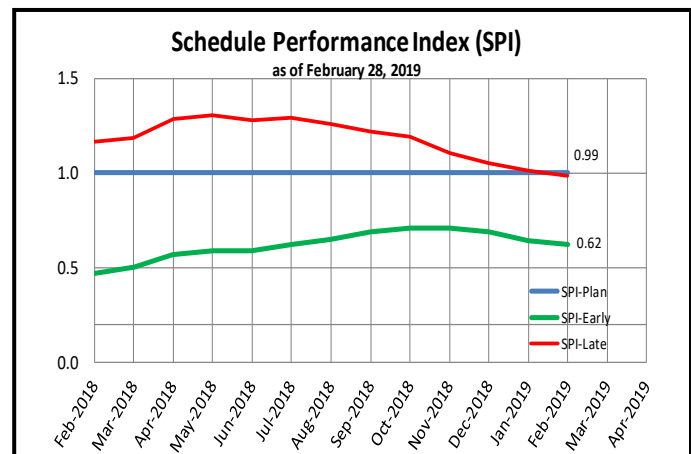
Schedule Summary

Critical path of this project now runs through the casting and placement of track wall along 136th, followed by trackwork. The Contractor is trending to finish ahead of their contractual milestone.

Activity Name	Start	Finish	2019					
			Q1	Q2	Q3	Q4	Q1	Q2
E340 Construction	24-Feb-17 A	02-May-20						
CONSTRUCTION	24-Feb-17 A	02-May-20						
~MILESTONES/EASEMENTS~	24-Feb-17 A	02-May-20						
~~Milestones	24-Feb-17 A	02-May-20						
Contract Milestones	24-Feb-17 A	02-May-20						
Limited Notice to Proceed (LNTP - Feb 24 2017)	24-Feb-17 A							
Notice to Proceed (NTP - March 27, 2017)	27-Mar-17 A							
MS #1 West Tributary Mitigation Site - NTP + 537 DAYS (September 15, 2018)		14-Sep-18 A						
MS #2 Substantial West Tributary Mitigation Site - NTP + 734 DAYS (March 31, 2019)		05-Apr-19*						
MS #3 Acceptance of SDIT - NTP + 976 DAYS - (Nov 27, 2019)		10-Jun-19*						
MS #4 Substantial Completion - NTP + 1156 DAYS - (May 26, 2020)		02-May-20*						
~SUBMITTALS/PRELIMINARY ACTIVITIES~	24-Feb-17 A	29-Aug-19						
~MOBILIZATION~	24-Feb-17 A	30-Dec-19						
~SITEWORK~	04-Apr-17 A	01-Apr-20						
~RETAINING WALLS~	12-Feb-18 A	07-Oct-19						
~AERIAL STRUCTURES~	15-May-17 A	23-Aug-19						
~STATIONS~	01-Aug-18 A	24-Jan-20						
~ELECTRICAL/ITS~	02-Jan-18 A	14-Jun-19						
~FINISHES~	01-Mar-19	05-Sep-19						
~TRACKWORK~	13-Jul-18 A	25-Feb-20						
~LANDSCAPING/FLATWORK~	22-May-18 A	05-Mar-20						
~TESTING AND COMMISSIONING~	17-Jun-19	13-Dec-19						

Schedule Performance Index

This period, the SPI early is at 0.62 and the SPI late is at 0.99. The late index is effective trending according to plan; while the SPI early continues to lag the early finish plans. Some of the contributing factors to the SPI late index are as follows. Progressed Station wall backfill and Station subgrade excavation. Progressed water installation on 136th Pl. NE. Progressed the signal conduit installation at the NE 20th track crossings. Continued progress of the retaining wall as well as aerial guideway end diaphragm constructions.



Link Light Rail East Link Extension

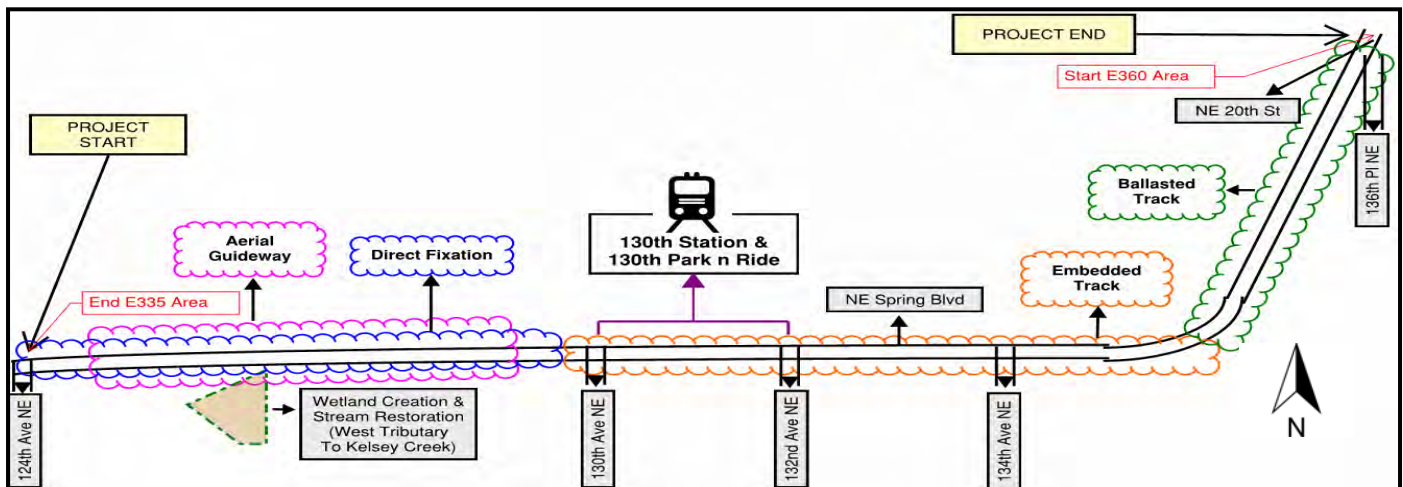
Next Period's Activities

- **Aerial Guideway:** Continue placing end diaphragms, forming bridge deck. Begin layout for bridge deck rebar.
- **West Tributary mitigation site:** Ongoing preparations and to start planting.
- **130th Ave Station:** Begin placement of storm drains and track underdrains. Continue grading and wall back-fill.
- **NE Spring Blvd:** Resume storm drain placement. Continue placement for illumination foundations and conduit. Continue wall placement.
- **136th PI NE:** Continue water line placement.

Closely Monitored Issues

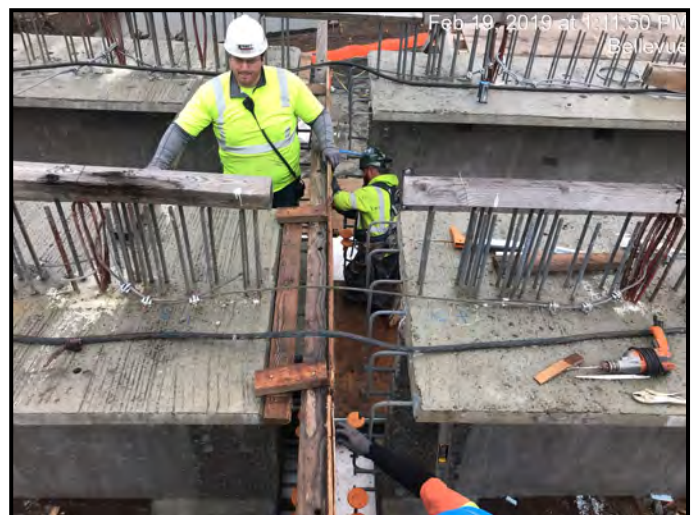
- The City of Bellevue Mid-Lakes Pump Station and the late start on the 124th Ave NE Bridge Project have potential to impact to the overall project schedule. Seattle City Light has agreed to allow early works for Sound Transit while compatibility is discussed between Seattle City Light, City of Bellevue and Sound Transit.
- The delay of the 124th Ave NE Bridge Project also carries Maintenance of Traffic risk for upcoming closures on 130th Ave NE, 132nd Ave NE and NE 20th St. as the contract does not allow the contractor to keep the closures on these streets during the estimated nine-month closure of 124th Ave NE.

E340 Construction Work Areas



Cost Summary

Present Financial Status	Amount
E340 Contractor– Max J Kuney	
Original Contract Value	\$93,170,012
Change Order Value	\$3,405,880
Current Contract Value	\$96,575,892
Total Actual Cost (Incurred to Date)	\$48,285,832
Percent Complete	50.65%
Authorized Contingency	\$9,317,000
Contingency Drawdown	\$3,405,880
Contingency Index	1.39



Forming West side end diaphragm looking South.

Contract E360 – SR 520 to Redmond Technology Center (RTC)

Current Progress

Design: Advanced design packages for the following areas: Design Package 5C/19C—Sweeper Site 100% is being advanced for submittal, Design Package 5B/19B — Landscape and Restoration ST review and IFC submittal preparation.

Construction: Work Area (WA) #2 Aerial guideway structures continued with superstructure work for diaphragms, pre-cast panels and girder erection. Severn girder spans were set (57-63) were set this month. With Girder erection planned to complete in March. WA#4 Systems ductbank installation and barrier wall finish activities continue. WA#5 Continued construction of wall 13 & wall 15 fascia footing and ductbank installation. Started wall 16 dry finish & seal. WA #6 continued Redmond Technology Station (RTS) Garage columns and deck/beams (level 2 to level 3). Continued ramp activities for Levels 2 to 3. Form/Reinforce/Place activities for platform grade beams and footings. WA#7 OVS Pedestrian Bridge final backfill of all sub-structure elements.

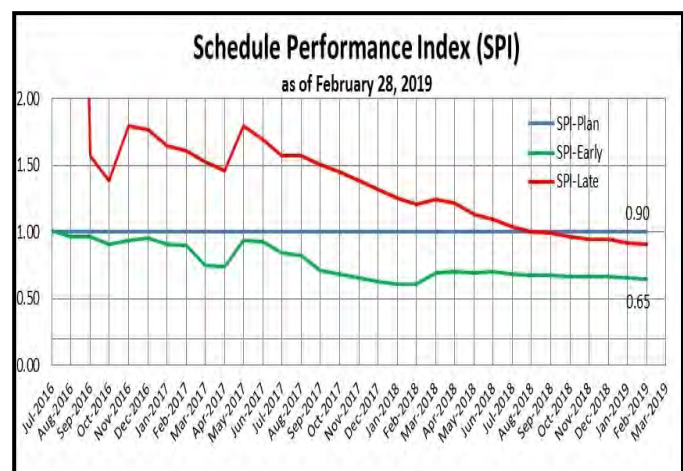
Schedule Summary

The critical path for this project currently goes through the structural work at RTS. The contractor is currently forecast to complete this contract on schedule.

Activity Name	Start	Finish	2019	2020
			Q1	Q2
E360 Construction	13-Jul-16 A	05-Mar-20		
Base Contract	13-Jul-16 A	05-Mar-20		
Design	13-Jul-16 A	18-Jun-19		
Design Milestones	03-Oct-16 A	03-Jun-19		
Design Submittals Start		03-Oct-16 A		
30% Design Submittals Complete		28-Oct-16 A		
60% Design Submittals Complete		26-Feb-18 A		
100% Design Submittals Complete		01-Mar-19		
IFC Design Submittals Complete		03-Jun-19		
Design Overhead	13-Jul-16 A	18-Jul-17 A		
Design and Engineering	13-Jul-16 A	18-Jun-19		
Construction	13-Jul-16 A	05-Mar-20		
General	13-Jul-16 A	05-Mar-20		
Project Milestones	13-Jul-16 A	05-Mar-20		
Notice to Proceed	13-Jul-16 A			
Civil/Systems 100% Design Submittal (NTP+300d) (09-May-2017)		10-Apr-17 A		
Substantial Completion		06-Jan-20		
Actual Acceptance of all Work		05-Mar-20		
WA #1 -Track Slab Guideway	22-May-17 A	02-Dec-19		
WA #2 -Aerial Guideway	01-Jun-17 A	02-Jan-20		
WA #3 -Ballast Guideway Block #1	01-May-17 A	25-Nov-19		
WA #4 -Overlake Village Station	14-Jul-16 A	27-Nov-19		
WA #5 -Ballast Guideway Block #2	15-Aug-17 A	05-Dec-19		
WA #6 -Overlake Transit Center	01-May-17 A	06-Jan-20		
WA #7 -OVS Pedestrian Bridge	01-Oct-18 A	11-Oct-19		
WA #8 -RTC Pedestrian Bridge	06-Jan-20	06-Jan-20		

Schedule Performance Index

This period, the SPI early is 0.65 and SPI late is 0.90. The early SPI value continues to reflect slippage of early finish of baseline plan. ST directed stoppage of RTS Pedestrian Bridge due to Microsoft reevaluation of the bridge and a two month stoppage is girder work has contributed to the slippage as well. Girder work is planned to be complete in March. Drilled shaft work is complete, column work is complete, and cap work is complete. Some procurement activities have been rolled into construction activities, which has contributed to lower late SPI recovery.



Link Light Rail East Link Extension

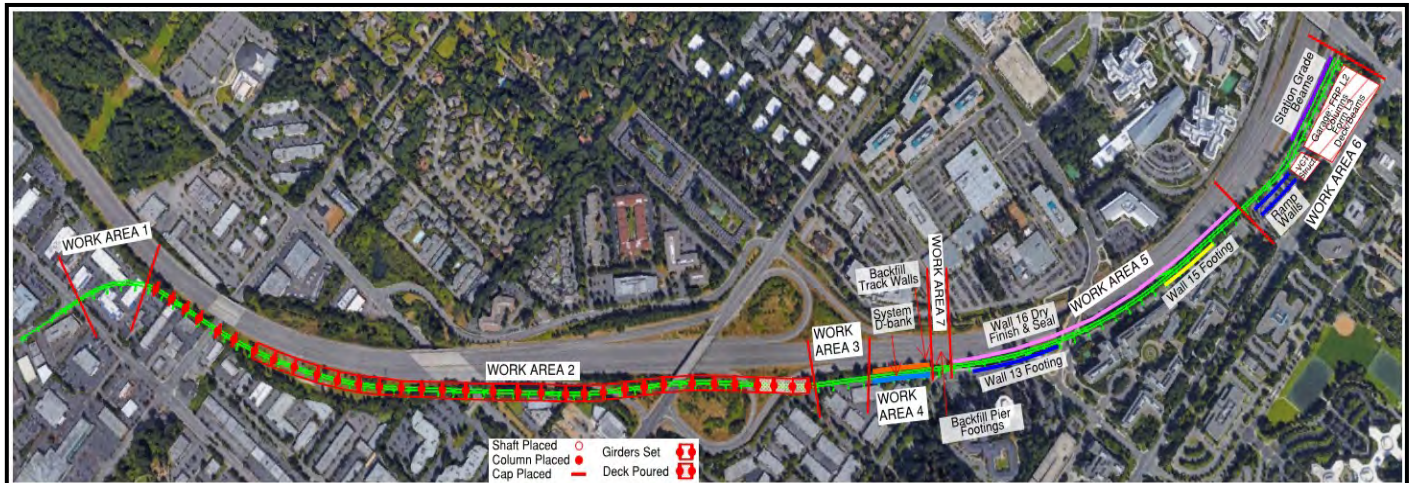
Next Period's Activities

- **Work Area #1:** MSE foundation and wall placement.
- **Work Area #2:** Continue diaphragm placement, precast panel set and deck/curb placement. Girder erection planned completion in March.
- **Work Area #3/4:** Start transition / approach slab to aerial guideway. Continue platform and track wall grade beams, footings and wall placement.
- **Work Area #5:** Complete drainage structures and track underdrain. Start fine-grade and sub-ballast work for the at-grade guideway. Complete wall B6, 13, and 16.
- **Work Area #6:** Continue platform grade beams, ramp walls, garage column and deck placement Levels 2 & 3. Continue MEP rough-in and station foundations.

Closely Monitored Issues

- OTC Pedestrian Bridge - negotiations with Microsoft and contractor are in full stride to remove this scope. A contract amendment will be required.
- Contractor, ST and City of Redmond continue to work out permitting issues having commercial impacts.
- Commercial Issues on sales tax increase, waterline routing at RTS, north ancillary building deletion, and As-Built Specification.
- Clearance requirements between the WSDOT Aggregate Disposal Site access road and aerial guideway.
- Increased frequency of quality and safety related incidents.

E360 Construction Work Areas



Cost Summary

Present Financial Status	Amount
E360 Contractor— Kiewit-Hoffman	
Original Contract Value	\$225,336,088
Change Order Value	\$2,075,297
Current Contract Value	\$227,411,385
Total Actual Cost (Incurred to Date)	\$133,391,077
Percent Complete	71.35%
Authorized Contingency	\$22,786,521
Contingency Drawdown	\$2,075,297
Contingency Index	8.0



Aerial Guideway - Girder Setting

Excludes Betterment

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Link Light Rail

Downtown Redmond Link Extension

Project Summary

Scope

Limits	The Downtown Redmond Link Extension builds new light rail from the Redmond Technology Station to downtown Redmond.
Alignment	The extension starts at Redmond Technology Station and travels generally along SR-520 and SR-202 to downtown Redmond.
Stations	Two Stations—SE Redmond (at Marymoor Park) and Downtown Redmond
Systems	Signals, traction electrification, and communications (SCADA)
Phase	Planning
Budget	\$1.530 Billion (Baselined October 2018)
Schedule	Revenue Service: December 31, 2024



Map of Downtown Redmond Link Extension

Key Project Activities

- Continued pursuit of cost responsibilities for transit integration facilities requested by King County.
- Completed the Memorandum of Understanding with King County Parks; scheduled for Board approval in March.
- Continued work on Development Agreement with City of Redmond
- Continued progressing permit applications including submittal of the King County shoreline substantial development permit materials.
- Continued development of O & M agreement to identify responsibilities at both stations.
- Continued environmental due diligence investigation on ROW parcels.
- Ongoing Concept and Alternative Technical Concepts (ATC) meetings, with final submission due in March.
- Continued development of Master Agreements with private utilities for relocation.

Project Cost Summary

Voters approved funding for preliminary engineering for the Redmond Link extension in the 2008 in the Sound Transit 2 ballot measure. In response to the 2007-2009 Great Recession, the ST Board suspended the project. In February 2016, the ST Board restored funding to support preliminary engineering of the project prior to funding approval for final design and construction as part of the Sound Transit 3 Plan. Table (below) figures in millions. This project has now been baselined, The baseline budget has been incorporated into the tables below.

The first table below summarizes costs in accordance with Sound Transit's budget Work Breakdown Structure (WBS), while the second table in FTA's Standard Cost Categories (SCC) format. The figures in both tables are shown in millions.

In this period, the Redmond Link project incurred approximately \$1.7M of expenses bringing the total expenditure to date from \$25.6M to \$27.3M. Third Party, Preliminary Engineering and Administrative activities are the main cost drivers during this period. Agency Administrative activities are primarily staffing cost, while expenditures related to 3rd Parties are for coordination and fees.

Cost Summary by Phase

Project Phase	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$77.0	\$77.0	\$5.3	\$5.1	\$77.0	\$0.0
Preliminary Engineering	\$23.0	\$23.0	\$18.1	\$17.0	\$23.0	\$0.0
Final Design	\$4.5	\$4.5	\$0.1	\$0.0	\$4.5	\$0.0
Construction Services	\$58.0	\$58.0	\$1.7	\$0.8	\$58.0	\$0.0
3rd Party Agreements	\$17.0	\$17.0	\$6.2	\$1.2	\$17.0	\$0.0
Construction	\$1,151.5	\$1,151.5	\$0.0	\$0.0	\$1,151.5	\$0.0
ROW	\$199.0	\$199.0	\$8.6	\$3.2	\$199.0	\$0.0
Total	\$1,530.0	\$1,530.0	\$40.0	\$27.3	\$1,530.0	\$0.0

Cost Summary by SCC

SCC Element	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
10 Guideway & Track	\$332.4	\$332.4	\$0.0	\$0.0	\$332.4	\$0.0
20 Stations	\$261.9	\$261.9	\$0.0	\$0.0	\$261.9	\$0.0
30 Support Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$287.1	\$287.1	\$0.0	\$0.0	\$287.1	\$0.0
50 Systems	\$108.6	\$108.6	\$0.0	\$0.0	\$108.6	\$0.0
Construction Subtotal (10 - 50)	\$990.0	\$990.0	\$0.0	\$0.0	\$990.0	\$0.0
60 Row, Land	\$168.5	\$168.5	\$8.6	\$3.2	\$168.5	\$0.0
70 Vehicles (Non-Revenue)	\$4.1	\$4.1	\$0.0	\$0.0	\$4.1	\$0.0
80 Professional Services	\$289.3	\$289.3	\$31.4	\$24.1	\$289.3	\$0.0
90 Unallocated Contingency	\$78.2	\$78.2	\$0.0	\$0.0	\$78.2	\$0.0
Total (10 - 90)	\$1,530.0	\$1,530.0	\$40.0	\$27.3	\$1,530.0	\$0.0

Link Light Rail Downtown Redmond Link Extension



Risk Management

The Risk and Contingency Management Plan (RCMP) establishes a risk management and oversight process for identifying, assessing, and monitoring risks and develops risk reduction/mitigation plans. It provides a tool for the project team to proactively manage risks on the project. It is Sound Transit's responsibility to continuously monitor project status and associated risks.

The project completed its quantitative risk assessment risk workshop as part of the process project baseline in Q4 2018. The quantitative risk assessment report is completed and finalized with good probability that supported the DRLE baseline cost and schedule assumptions. The externality conditions remains the same this period and may have reduced in some instances, therefore, the project's risk profile remains unchanged. The following continues to be the current top project risk areas:

- Property acquisition - market conditions; protracted durations of attaining control of properties; evolving design impacts property needs.
- Permitting and 3rd party requirements - construction adjacent to SR520; flood prone areas by Sammamish River and Bear Creek; archaeological discovery; betterment requests increases complexity of projects; construction impacts to traffic; storm water discharge requirements by King County Parks; protracted negotiation with 3rd parties.
- Construction market conditions - inflationary pressure due to potential shortages of labor; higher materials pricing due to demand as well as regulations (tariffs and taxes).
- Agency staffing capacity - developing and mobilizing resources and coordinating start up activities across multiple Link extensions within a short time frame.

Project Schedule

The project schedule is presented below. One-on-one meetings with the RFP shortlist continue. Final proposals will be submitted in April 2019. Property acquisition is underway and environmental permitting is ongoing. Project is currently forecast for completion near the end of 2024.

Activity Name	Start	Finish												
			2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Downtown Redmond Link Extension - Preliminary Engineering	15-Dec-18 A	12-Feb-20	■											
Downtown Redmond Link Extension - Workshops and Phase Gate	15-Dec-18 A	25-Oct-18 A	■											
Downtown Redmond Link Extension - Preliminary Engineering & Bridging Documents	15-Dec-18 A	12-Feb-20	■											
Downtown Redmond Link Extension - Right of Way	27-Dec-17 A	14-Dec-20	■											
Downtown Redmond Link Extension - Permits & Third Party Agreements	01-Jun-18 A	09-Jun-20	■											
Downtown Redmond Link Extension - Construction	05-Oct-17 A	31-Dec-24	■	■	■	■	■	■	■	■	■	■	■	■
Downtown Redmond Link Extension - DBPM Procurement	05-Oct-17 A	11-Jun-18 A	■											
Downtown Redmond Link Extension - Design-Build Procurement	01-Jun-18 A	19-Sep-19	■											
Downtown Redmond Link Extension - Design-Build Contract	20-Sep-19	31-May-24		■	■	■	■	■	■	■	■	■	■	■
Downtown Redmond Link Extension - Rail Activation/Close out	28-Dec-23	31-Dec-24										■	■	■
Systems Integration & Testing	28-Dec-23	01-Apr-24										■	■	■
Safety and Security Certification	28-Dec-23	18-Mar-24										■	■	■
Pre-Revenue Service	01-Jun-24	31-Jul-24											■	■
Pre-Revenue Operations	01-Jun-24	31-Jul-24											■	■
Revenue Service/Project Float	01-Aug-24	31-Dec-24											■	■
Project Float	01-Aug-24	31-Dec-24											■	■
Revenue Service		31-Dec-24											■	■

Right-of-Way

The Right-of-Way effort for this project involves the acquisition of a range of property interests which includes compensable (e.g. fee acquisitions, guideway easements, permanent and temporary construction easements) and non-compensable rights (e.g. rights of entry). These acquisitions will result in owner and tenant residential and commercial relocations. The right-of-way program status for this period is summarized in the following table.

Downtown Redmond Link Extension Property Acquisition Status					
ACQUISITION				RELOCATION	
Total Acquisitions	Board Approved	Offers Made to date	Closings to date	Relocations Required	Relocations Completed to date
89	87	2	0	1526	0
* All numbers are cumulative totals, except where noted. Number of totals may differ from other reports due to the timing of reporting periods.					

- Total Relocations—additional eligible relocatees discovered.

Community Outreach

- Continued meetings with potentially impacted property owners in southeast and downtown Redmond to provide updated project information and real estate process information and timing.
- Engaged with the community on a variety of concerns including schedule, property acquisition and station access.

Sound Transit Board Actions

Board Action	Description	Date
	None in this period	

Link Light Rail West Seattle and Ballard Link Extensions

Project Summary

Scope

Limits The West Seattle extension includes 4.7 miles of light rail from downtown Seattle to West Seattle's Junction neighborhood. The Ballard extension includes 7.1 miles of light rail from downtown Seattle to Ballard's Market Street area.

Alignment The West Seattle extension route is assumed to run primarily on elevated guideway with a new rail-only bridge over the Duwamish River. The Ballard extension route is assumed to run through a new downtown Seattle rail-only tunnel, elevated guideway, and a rail-only bridge over Salmon Bay.

Stations Five stations planned for West Seattle Segment. Nine stations planned for the Ballard Segment.

Phase Planning

Budget \$286M through completion of Preliminary Engineering

Schedule Revenue Service: 2030 (West Seattle), 2035 (Ballard)



Map of Project Alignment

Key Project Activities

- The Notice of Intent to prepare an EIS was published in the Federal Register on February 12, 2019, initiating EIS Scoping. The Scoping period was extended for an additional 15 days in coordination with FTA to run through April 2, 2019.
- Continued technical work required to support alternatives evaluation and screening.
- Briefed Elected Leadership Group (ELG) and Sound Transit Board on Level 3 alternatives evaluation results.
- Continued engagement with City of Seattle, WSDOT, Port of Seattle, King County and other regulatory and partner agencies regarding the alternatives development process and design, permitting, construction and operational feasibility issues.
- Continued outreach to neighborhood and stakeholder groups throughout the project corridor.
- Completed geotechnical borings on Harbor Island and surrounding Port of Seattle and Northwest Seaport Alliance properties to provide technical information for Duwamish waterway crossing alternatives.
- Continued development of consultant Scope of Work for Phase 2 (Draft EIS / Conceptual Engineering).
- Reached concurrence with SDOT and KCM staff on criteria for initial screening RapidRide C and D improvements. Initiated evaluation of design options and continued data gathering and traffic modeling.

Project Cost Summary

The West Seattle and Ballard Link Extensions are voter-approved projects under the ST3 Plan. The Current Budget for the project that has been approved by the Sound Transit Board allows staff to conduct alternatives development, followed by an Environmental Impact Statement, leading to ST Board selection of the project to be built and FTA issuance of a Record of Decision no later than 2022.

Out of the total Authorized Project Allocation, the project is authorized and planned to incur approximately \$31M in 2019 for completing alternatives development and evaluation; EIS Scoping; Draft EIS; conceptual engineering work; project administration and stakeholder engagement.

The project cost is summarized below in two cost categories. The first table summarizes costs in accordance with Sound Transit's budget Work Breakdown Structure (WBS). The second table summarizes costs in accordance with the FTA's Standard Cost Categories (SCC) format. The figures in both tables are shown in millions.

Cost Summary by Phase

Project Phase	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$63.1	\$6.1	\$5.4	\$63.1	\$0.0
Preliminary Engineering	\$205.4	\$25.3	\$21.8	\$205.4	\$0.0
Final Design	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Construction Services	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
3rd Party Agreements	\$11.4	\$1.1	\$0.1	\$11.4	\$0.0
Construction	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Light Rail Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$6.0	\$0.5	\$0.1	\$6.0	\$0.0
Total	\$285.9	\$33.0	\$27.5	\$285.9	\$0.0

Cost Summary by SCC

SCC Element	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
10 Guideway & Track	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
20 Stations	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
30 Support Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
50 Systems	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Construction Subtotal (10 - 50)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
60 Row, Land	\$5.0	\$0.5	\$0.2	\$5.0	\$0.0
80 Professional Services	\$263.4	\$32.5	\$27.3	\$263.4	\$0.0
90 Unallocated Contingency	\$17.5	\$0.0	\$0.0	\$17.5	\$0.0
Total (10 - 90)	\$285.9	\$33.0	\$27.5	\$285.9	\$0.0

Link Light Rail West Seattle and Ballard Link Extensions



Risk Management

Sound Transit has a vigorous risk management program and is committed to identifying, assessing, and monitoring risks and implementing risk reduction/mitigation actions. Risk Assessment for the West Seattle and Ballard Link Extensions Project was conducted as part of the ST3 Planning process.

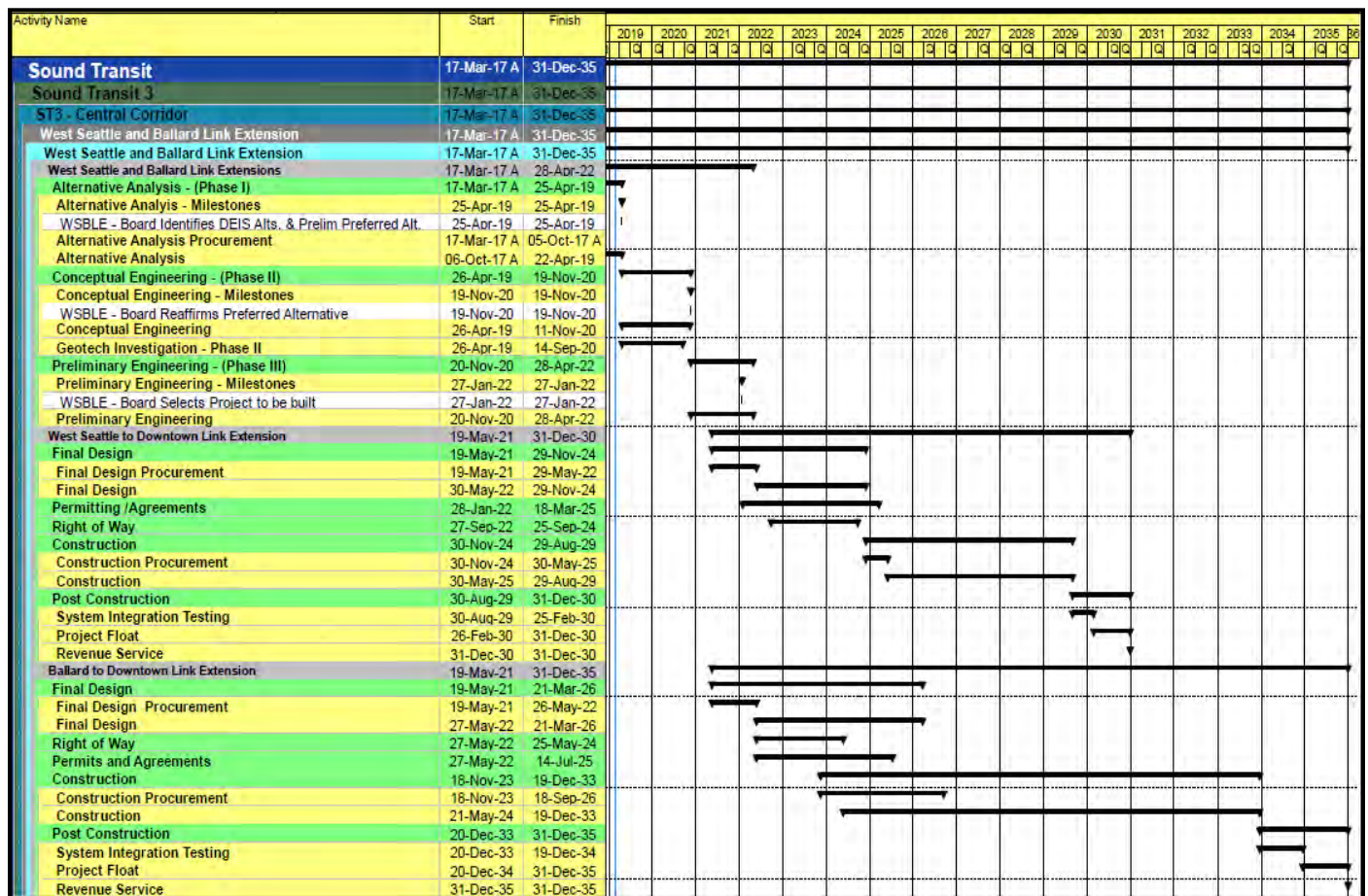
Project issues and risks identified at this stage include:

- Reaching stakeholder consensus on a preferred alternative;
- Complexity of alignments in constrained environment with challenging topography and waterway crossings;
- Complexity associated with tunneling through a mature urban environment;
- Potential construction effects in a constrained environment;
- Potential effect on Central Link operations during construction;
- ROW and property impacts.

Project Schedule

The preliminary project schedule can be found below. ST Board identifies preliminary preferred alternatives in 2nd QTR 2019. FTA issuance of ROD and Final Design is expected to begin in 2022.

Revenue Service between West Seattle and Downtown Seattle is targeted for 2030, and revenue service between Ballard and Downtown Seattle is targeted for 2035.



Community Outreach

- Continued outreach to neighborhood and stakeholder groups throughout the project corridor.
- Held Scoping open houses and neighborhood forums in West Seattle and Ballard, in addition to an online open house and other outreach efforts to solicit Scoping comments.

Sound Transit Board Actions

Board Action	Description	Date
	None to Report	

Link Light Rail Federal Way Link Extension

Project Summary

Scope

Limits	The Federal Way Link Extension adds approximately 7.8 miles of light rail from the Angle Lake Station in the City of SeaTac to the Federal Way City Center.
Alignment	The extension generally parallels SR 99 and I-5 freeway.
Stations	Stations at Kent/Des Moines, South 272nd Star Lake Park –and-Ride and the Federal Way Transit Center
Systems	Signals, traction power, and communications (SCADA)
Phase	Proceed to Final Design/Construction
Budget	\$2.451 Billion (Baseline Sep 2018)
Schedule	Revenue Service: December 2024



Map of Federal Way Link Extension.

Key Project Activities

- Entry to Engineering (EIE) approval is pending next month due to government shutdown. Working with FTA/PMOC on EIE readiness recommendations.
- Project team continues to prepare for Full Funding Grant Agreement (FFGA) application submission.
- Design Build (DB) procurement: Project team finalized addenda's and await DB proposer proposals due next month.
- Negotiations continues for Design Build Project Management Services Phase 2 contract.
- Advanced demolition work of nuisance properties in City Kent continues.
- WSDOT Construction Funding Agreement, Air Space Lease, and Temporary Construction Air Space Lease agreement are all executed.
- Board approval was obtained for City SeaTac Transit Way and Development Agreements, and City of Federal Way Transit Way Agreement.
- Project team continues to work with City of Federal Way to finalize Development Agreement.
- Continue preparing for advanced utility relocations agreements with Century Link and Puget Sound Energy.
- Continued right-of-way acquisition and relocation activities this period.

Project Cost Summary

The project cost is summarized below in two cost categories. The first table summarizes costs in accordance with Sound Transit's budget Work Breakdown Structure (WBS). The second table summarizes costs in accordance with the FTA's Standard Cost Categories (SCC) format. The figures in both tables are shown in millions.

This period approximately \$4.1M was incurred for February 2019, of which \$3.1M incurred was for Right-Of-Way; \$0.4M incurred for Administration; \$0.2 for Construction Services. Remaining major expenditures of \$0.4M were for Preliminary Engineering, Third Party services and minor demolition construction work. Overall the project Estimate at Completion continues to reflect \$2.45B.

Cost Summary by Phase

Project Phase	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$96.5	\$15.4	\$15.4	\$96.5	\$0.0
Preliminary Engineering	\$46.5	\$45.5	\$43.7	\$46.5	\$0.0
Final Design	\$3.1	\$1.0	\$0.8	\$3.1	\$0.0
Construction Services	\$107.0	\$4.6	\$2.2	\$107.0	\$0.0
3rd Party Agreements	\$27.7	\$4.0	\$3.1	\$27.7	\$0.0
Construction	\$1,831.9	\$0.1	\$0.1	\$1,831.9	\$0.0
ROW	\$338.8	\$41.5	\$28.1	\$338.8	\$0.0
Total	\$2,451.5	\$112.2	\$93.2	\$2,451.5	\$0.0

Cost Summary by SCC

SCC Element	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
10 Guideway & Track	\$517.7	\$0.0	\$0.0	\$523.0	\$0.0
20 Stations	\$316.1	\$0.0	\$0.0	\$318.9	\$0.0
30 Support Facilities	\$5.3	\$0.0	\$0.0	\$5.3	\$0.0
40 Sitework & Special Conditions	\$557.7	\$0.1	\$0.1	\$558.4	\$0.0
50 Systems	\$153.0	\$0.0	\$0.0	\$153.8	\$0.0
Construction Subtotal (10 - 50)	\$1,549.9	\$0.1	\$0.1	\$1,559.4	\$0.0
60 Row, Land	\$338.8	\$41.5	\$28.1	\$338.8	\$2.8
70 Vehicles	\$1.8	\$0.0	\$0.0	\$1.8	\$0.0
80 Professional Services	\$383.0	\$70.5	\$65.1	\$373.5	(\$2.8)
90 Unallocated Contingency	\$178.1	\$0.0	\$0.0	\$178.1	\$0.0
Total (10 - 90)	\$2,451.5	\$112.2	\$93.2	\$2,451.5	\$0.0

Link Light Rail Federal Way Link Extension



Risk Management

The Risk and Contingency Management Plan (RCMP) establishes a risk management and oversight process for identifying, assessing, and monitoring risks and develops risk reduction/mitigation plans. It provides a tool for the project team to proactively manage risks on the project. It is Sound Transit's responsibility for continuously monitoring project status and associated risks.

The most recent Quarterly Risk Register review update was held in December 2018. Below are the top project risks.

- Jurisdictional reviews not completed in time, thus delaying DB progress.
- Property acquisition and relocations completed in time for construction.
- Volume of residential relocations continues to be a concern due to limited housing availability.
- Volatility in construction market and unanticipated jurisdictional stakeholder requirements may drive project cost higher than PE cost estimate.
- Availability of federal funding remains uncertain and may impact schedule and funding resources.

Project Schedule

The project schedule is presented below. Right-of-Way acquisitions and relocations continue and additional detail has been added to the master schedule to monitor any impacts to the project. Final Entry to Engineering was submitted and approval is expected in 1st QTR 2019 with the FFGA submittal to follow in 1st QTR 2019 as well. A limited Notice-to-Proceed to the DB contractor is expected in 2nd QTR 2019. Revenue Service expected in 4th QTR 2024.

Activity Name	Start	Finish	2019 2020 2021 2022 2023 2024														
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Sound Transit	01-Jul-16 A	31-Dec-24															
Sound Transit 2	01-Jul-16 A	31-Dec-24															
South Corridor	01-Jul-16 A	31-Dec-24															
Federal Way Link Extension - Master - Design/Build	01-Jul-16 A	31-Dec-24															
Federal Way Link Extension - Master Schedule	01-Jul-16 A	31-Dec-24															
Milestones	27-Sep-18 A	31-Dec-24															
MS 01 - Baseline Project (Q3 2018) (08/23/2018)		27-Sep-18 A															
MS 02 - NTP to Design/Build Contractor (Q3 2019) (08/20/2019)		14-Jun-19															
MS 03 - ROW Acquisitions Complete (Q1 2020) (02/14/2020)		11-Feb-20															
MS 04 - 50% Design/Construction Complete (Q4 2021) (*based on contract duration)		18-Aug-21															
MS 05 - All Drilled Shafts/Foundations/MSE Walls Complete (Q1 2022) (6/02/2022)		29-Mar-22															
MS 06 - Design/Build Contractor - Substantial Completion - (Q4 2023) - System Inte		01-Sep-23															
MS 07 - Revenue Service w/Float (Q4 2024)		31-Dec-24															
Preliminary Engineering	01-Jul-16 A	24-Apr-19															
Third Party Agreements and Permitting	01-Jul-16 A	15-Dec-20															
Federal Way Link - Design-Build Construction Management Consultant - Contract	14-Nov-16 A	31-Dec-24															
Federal Way Design/Build Contract Procurement	11-Mar-17 A	14-Jun-19															
FWLE ROW Acquisitions	10-May-17 A	22-Aug-20															
Federal Way Link Extension - Design Packages - D/B	14-Jun-19	03-Oct-20															
Federal Way Link Extension - Construction - D/B	13-Oct-17 A	31-Oct-23															
FWLE - Construction	13-Oct-17 A	31-Oct-23															
Milestones	14-Jun-19	31-Oct-23															
Submittals / Preliminary Activities	14-Jun-19	27-Jul-21															
Mobilization	14-Jun-19	31-Dec-21															
ROW Acquisition - Availability	13-Oct-17 A	18-Feb-20															
Sitework / Site Utilities	16-Dec-19	08-Jul-20															
Foundations	12-Feb-20	07-Dec-21															
Structures	02-Mar-20	02-Jun-23															
Trackwork	18-May-21	09-Nov-22															
Train Systems	29-Sep-21	22-Nov-22															
Testing & Commissioning	25-Aug-22	01-Sep-23															
Federal Way Link Extension - Rail Activation	01-Apr-18 A	31-Dec-24															
Rail Activation	01-Apr-18 A	31-Dec-24															
LRV Procurement/Manufacture/Delivery	01-Apr-18 A	05-Dec-23															
Pre-Revenue Service	02-Sep-23	31-Oct-23															
Project Float	01-Nov-23	31-Dec-24															
Revenue Service	31-Dec-24	31-Dec-24															

Contingency Management

The Federal Way Link Extension project budget was baselined in September 2018 with a total contingency of \$549.9M.

Design Allowance (DA) was established to account for unquantified scope at the time of the cost estimate. DA is expected to be fully drawn when the design build construction contract package is executed.

Allocated Contingency (AC) is used to address risks, complexity and unforeseen conditions during the execution of work, including procurement. During this period a minor amount of \$0.04M was utilized for advanced demolition contract and the execution of third party agreement.

Unallocated Contingency (UAC) is used to address general project-wide cost risks and uncertainties. During this period, no drawdown to UAC occurred.

Contingency Status (Monthly)

Type	Baseline		Current Status	
	Amount	% of Total Budget	Remaining Amount	% of Work Remaining
Design Allowance	\$139.6	5.7%	\$139.6	5.9%
Allocated Contingency	\$232.2	9.5%	\$232.1	9.8%
Unallocated Contingency	\$178.1	7.3%	\$178.1	7.5%
Total:	\$549.9	22.4%	\$549.9	23.3%

Contingency by Type

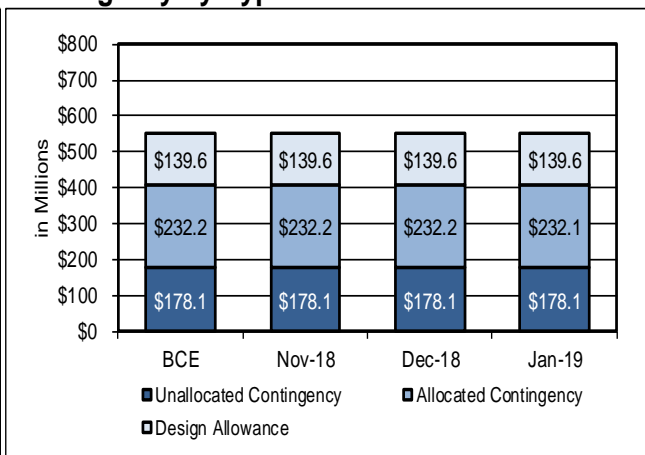
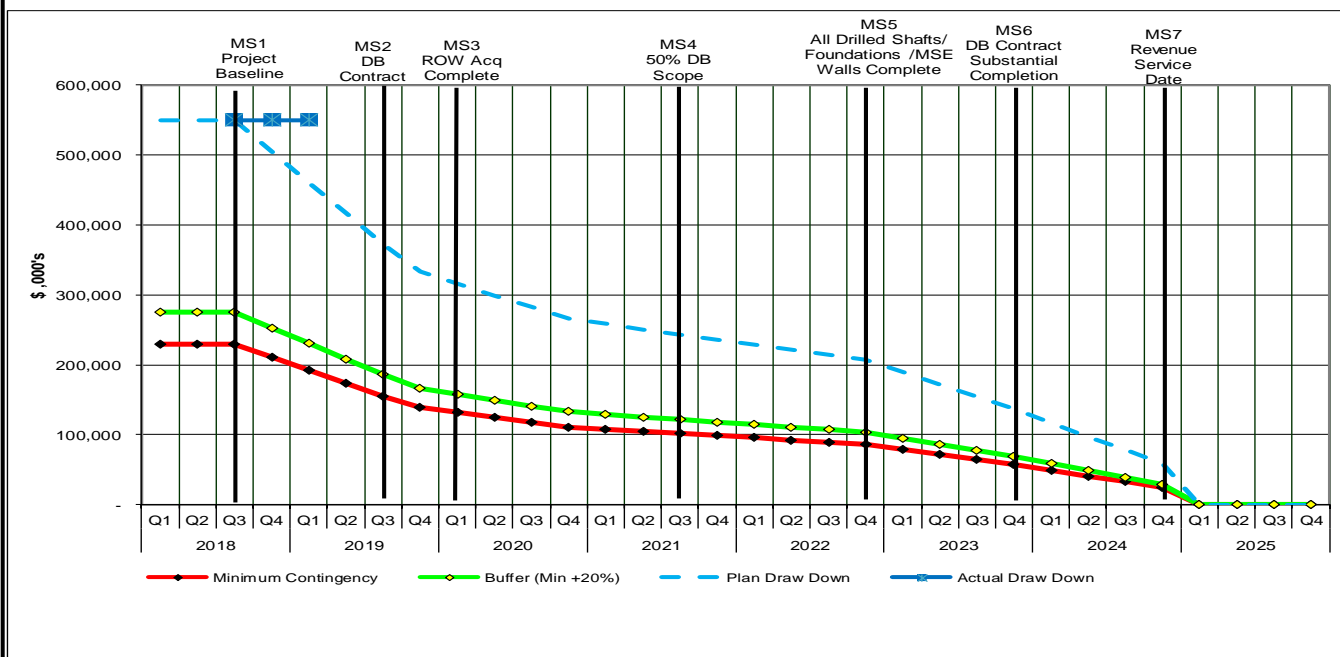


Table figures are shown in millions.

Contingency Drawdown (Quarterly)



Right-of-Way

The Right-of-Way effort for this project involves the acquisition of a range of property interests which includes compensable (e.g. fee acquisitions, guideway easements, permanent and temporary construction easements) and non-compensable rights (e.g. rights of entry). These acquisitions will result in owner and tenant residential and commercial relocations. The Right-of-Way program status for this period is summarized in the following table.

Federal Way Link Extension Property Acquisition Status					
ACQUISITION				RELOCATION	
Total Acquisitions	Board Approved	Offers Made to date	Closings to date	Relocations Required	Relocations Completed to date
256	259	188	28	429	109
<i>* All numbers are cumulative totals, except where noted. Number of totals may differ from other reports due to the timing of reporting periods.</i>					

- Relocations required was reduced due to information gathered that determined that a motel was not an extended stay, therefore no displacements.

Community Outreach

- Communication with property owners regarding FWLE route, profile, station areas, acquisition and relocation is ongoing.
- Provided project updates at various outreach events:
 - City of SeaTac Hotel Motel Tax Advisory Committee 2/13
 - City of Kent Cultural Communities Board 2/26
 - City of Federal Way Mayor State of the City Address 2/28
- Held Neighborhood Briefing for area residents
 - Silverwood Apartments (in Spanish), Des Moines 1/17

Sound Transit Board Actions

Board Action	Description	Date
M2019-15	Execute Development Agreement with the City of SeaTac	02/28/2019
M2019-16	Execute Transit Way Agreement with the City of SeaTac	02/28/2019
M2019-17	Execute Transit Way Agreement with the City of Federal Way	02/28/2019

Phase 3 Preliminary Engineering (PE)

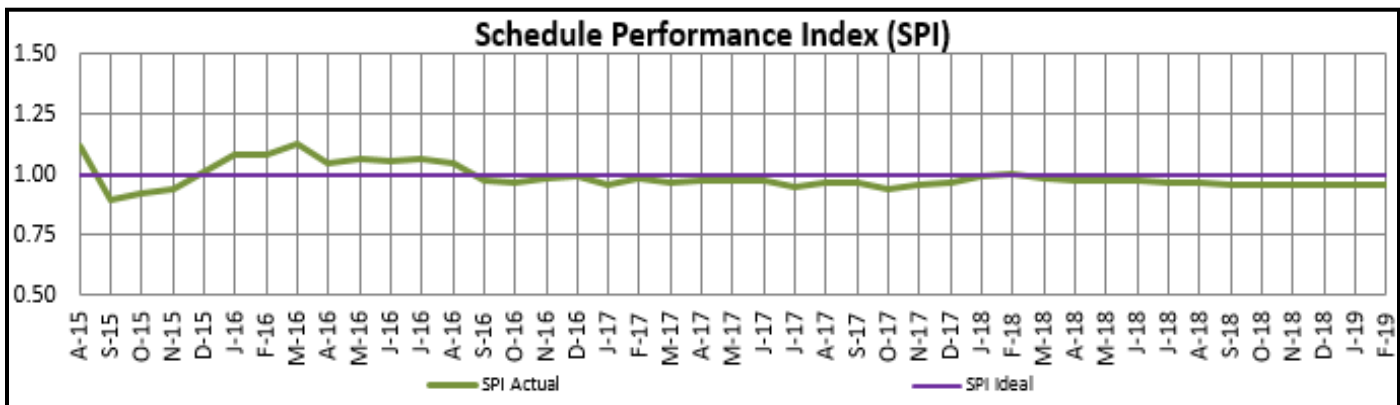
In July 2015, Sound Transit executed an amendment to the professional services agreement with HDR Engineering, Inc. for Phase 3 professional services, including completion of a Final Environmental Impact Statement (FEIS) using the preferred alternative and the other alternatives in the Draft EIS, preliminary engineering of the preferred alternative to Kent/Des Moines and additional engineering as needed to support receipt of environmental approvals. In February 2016, Sound Transit executed an amendment to extend the preliminary engineering effort from Kent/Des Moines to the Federal Way Transit Center.

Current Progress

- Responses to DB Request for Information (RFI) and modifications and clarifications to the Request for Proposal (RFP) continued.
- Efforts continued to finalizing the Development Agreements with the Authorities Having Jurisdiction (AHJ's).
- Continued environmental permitting efforts including Critical Areas Reports and responding to comments on Joint Aquatic Resources Permit Application (JARPA).
- Continued property acquisition support, including Environmental Site Assessment (ESA) Phase 2 reports and Hazardous Building Materials Surveys.

Schedule Performance Index

The cumulative Schedule Performance Index (SPI) is 0.97 through February 2019, indicating the overall amount of work accomplished is as planned. The consultant is fully engaged on the scope, to assist in DB procurement RFI and RFP responses, environmental permit support and in right-of-way acquisition support.

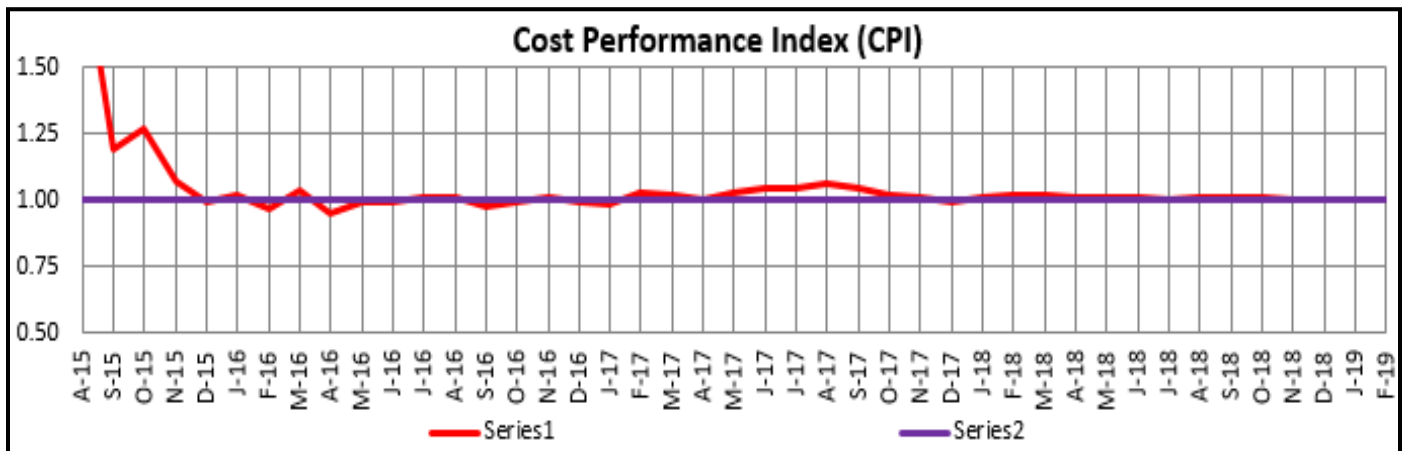


Link Light Rail Federal Way Link Extension



Cost Performance Index

Phase 3 expenditures through February 2019 totaled \$35.4M, approximately 95.2% of the amended total contract. The Phase 3 percent complete is reported at 95.4%, with an earned value of \$35.5M. The cumulative Cost Performance Index (CPI) is 1.00 showing costs are on track with work accomplished. The Consultant is engaged in assistance of DB contract RFIs and RFP response, Development Agreements support, environmental permits support and in ROW acquisition support.



Cost Summary

Contract (Phase 3 portion)	Cumulative To-date
Amount Invoiced	\$35.4M
% Spent	95.2%
Earned Value	\$35.5M
% Complete	95.4%
SPI	0.97
CPI	1.00

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Link Light Rail Hilltop Tacoma Link Extension

Project Summary

Scope

Limits City of Tacoma

Alignment The Hilltop Tacoma Link Extension project is a 2.4-mile extension of the existing Tacoma Link system from the Theater District in downtown Tacoma to the Hilltop neighborhood. The extension will travel at-grade along Stadium Way, North 1st Street, Division Avenue, and Martin Luther King Jr. Way.

Stations Old City Hall, S. 4th, Stadium District, Tacoma General, 6th Avenue, Hilltop District, and St. Joseph.

Systems Expansion of the Operations and Maintenance Facility; The at-grade alignment will include additional signals, OCS, traction power, and communications infrastructure.

Phase Construction

Budget \$217.3 Million (Baselined September 2017)

Schedule Revenue Service: May 2022



Map of Hilltop Tacoma Link Extension.

Key Project Activities

Final Design

- Design consultant continued design services during construction scope including review of construction contractor submittals and responded to requests for information.

Construction:

- Contractor continued potholing along alignment to confirm utility locations.
- Heading 1 (Commerce St./Stadium Way to Division St.) continued storm, sanitary sewer and water work
- Heading 2 (Stadium District): Continued sanitary sewer work at N. Tacoma Ave./N. 1st St. toward Division.
- Heading 3 (Hilltop): Continued planning for water, storm and sewer jack and bore at Tacoma General; performed saw cutting and potholing for OCS foundation installations from S. 19th moving north.
- Operations and Maintenance Facility—Continued wet utility work on 25th; began slab resteel and formwork activities at elevator and wheel truing pit.
- Provided advanced notification to community and key stakeholders regarding maintenance of traffic revisions at work zones along the alignment.

Right-of-Way: Acquisition of all required parcels and temporary construction easements is complete.

Vehicles: Held monthly progress meeting with representatives from Brookville Equipment Corporation on LRVs. Sound Transit (ST) staff and vehicle consultant reviewed vehicle subsystem design submittals. ST vehicle engineering and consultant staff attended preliminary design review (PDR) in Brookville, PA.

Project Cost Summary

In September 2017, Sound Transit Board adopted the Hilltop Tacoma Link Extension (HTLE) baseline schedule and budget by increasing the authorized project allocation from \$34.6M to \$217.3M. The project cost is summarized below in two cost categories. The first table summarizes costs in accordance with Sound Transit's budget Work Breakdown Structure (WBS). The second table summarizes costs in accordance with the FTA's Standard Cost Categories (SCC) format. The figures in both tables are shown in millions. To date, most of the expenditures have been from Administration, Design, 3rd Party, and ROW.

Award of the construction contract required phase level budget transfers and were approved at July's ST Board meeting. The T100 construction contract was executed in August 2018.

This period approximately \$11.4M was incurred, of this most expenditures were due to the Construction Phase related to the T100 construction contract. ST continues to anticipate majority of expenditures in the construction phase for the next month.

Cost Summary by Phase

Project Phase	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$16.9	\$16.9	\$7.9	\$7.9	\$16.9	\$0.0
Preliminary Engineering	\$5.6	\$5.6	\$5.6	\$5.6	\$5.6	\$0.0
Final Design	\$10.8	\$11.3	\$10.4	\$9.6	\$11.3	\$0.0
Construction Services	\$9.9	\$10.3	\$8.9	\$1.3	\$10.3	\$0.0
3rd Party Agreements	\$1.5	\$1.5	\$1.3	\$1.3	\$1.5	\$0.0
Construction	\$127.2	\$130.1	\$115.4	\$25.6	\$130.1	\$0.0
Vehicles	\$35.4	\$32.8	\$31.2	\$0.9	\$32.8	\$0.0
ROW	\$3.6	\$2.3	\$2.1	\$1.9	\$2.3	\$0.0
Contingency	\$6.6	\$6.6	\$0.0	\$0.0	\$6.6	\$0.0
Total	\$217.3	\$217.3	\$182.9	\$53.9	\$217.3	\$0.0

Cost Summary by SCC

SCC Element	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
10 Guideway & Track	\$21.9	\$24.9	\$22.1	\$4.9	\$24.9	\$0.0
20 Stations	\$1.8	\$2.8	\$2.5	\$0.5	\$2.8	\$0.0
30 Support Facilities	\$26.6	\$33.1	\$29.3	\$6.5	\$33.1	\$0.0
40 Sitework & Special Conditions	\$40.0	\$41.6	\$36.9	\$8.2	\$41.6	\$0.0
50 Systems	\$25.0	\$27.8	\$24.6	\$5.5	\$27.8	\$0.0
Construction Subtotal (10 - 50)	\$115.4	\$130.12	\$115.4	\$25.6	\$130.1	\$0.0
60 Row, Land	\$3.4	\$2.3	\$2.1	\$1.9	\$2.3	\$0.0
70 Vehicles (non-revenue)	\$34.1	\$32.8	\$31.2	\$0.9	\$32.8	\$0.0
80 Professional Services	\$48.4	\$45.6	\$34.2	\$25.6	\$45.6	\$0.0
90 Unallocated Contingency	\$16.1	\$6.6	\$0.0	\$0.0	\$6.6	\$0.0
Total (10 - 90)	\$217.3	\$217.3	\$182.9	\$53.9	\$217.3	\$0.0

Risk Management

The Hilltop Tacoma Link Risk and Contingency Management Plan (RCMP) was updated in 2nd QTR 2018. This establishes a risk management and oversight process for identifying, assessing, and monitoring risks and develops risk reduction/mitigation plans. It will provide a tool for the project team to proactively manage risks on the project. It is Sound Transit's responsibility for continuously monitoring project status and associated risks, taking mitigation actions for known risks identified on the risk register, and effectively responding in a timely manner to those risks that pose a significant impact to the project cost or schedule forecast. The quarterly risk review for 4th QTR 2018 was held on December 12, 2018. The 1st QTR 2019 Risk Register Review was held in February 2019. A Quantitative Risk Review is tentatively Planned for May 2019.

The Baseline Risk Assessment was conducted in May 2017 and we anticipate a Quantitative Risk Assessment in 2nd QTR 2019. Per the 1st QTR 2019 Register Review the current top project risks include:

- Unidentified utility conditions under the proposed alignment lead to schedule delays and increased cost.
- Roadway improvements and modifications along MLK are greater than anticipated, creating additional scope.
- Utility (Sanitary Sewer and Storm) relocations associated with the MLK Pedestrian undercrossing.
- Requested or additional work from public feedback, City of Tacoma, or Inspectors.
- Unknown subsurface conditions under the proposed alignment. (example: Old Track Ties/Thicker Slab)



Sewer pipeline construction in 1st Street

Contingency Management

Hilltop Tacoma Link Extension was baselined on September 2017 with a total contingency of \$33.8M. Since baselining, there were draw downs on AC and UAC to address Final Design Change Orders, the Procurement of the Tacoma LRV contract and the T100 Construction contract.

Design Allowance (DA) was established to account for unquantified scope at the time of the cost estimate. DA is at \$0M, as a result of completion of Final Design.

Allocated Contingency (AC) is used to address risks, complexity and unforeseen conditions during the execution of work, including procurement. This period the Total AC remained the same to \$9.0M.

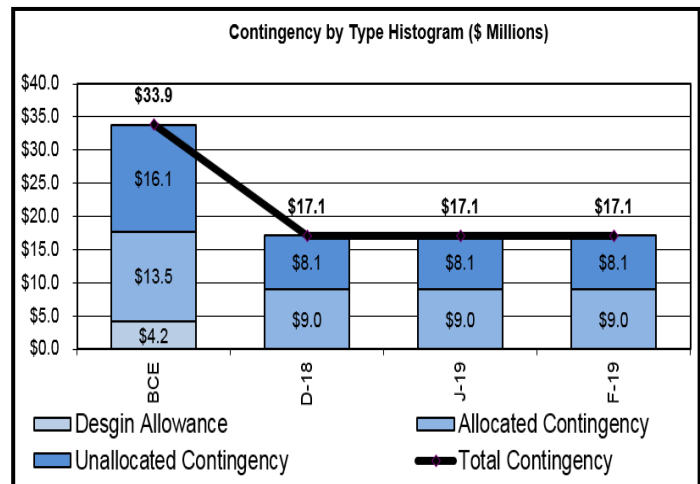
Unallocated Contingency (UAC) is used to address general project-wide cost risks and uncertainties. The UAC balance remained the same in October with a net amount of \$8.1M.

Contingency Status (Monthly)

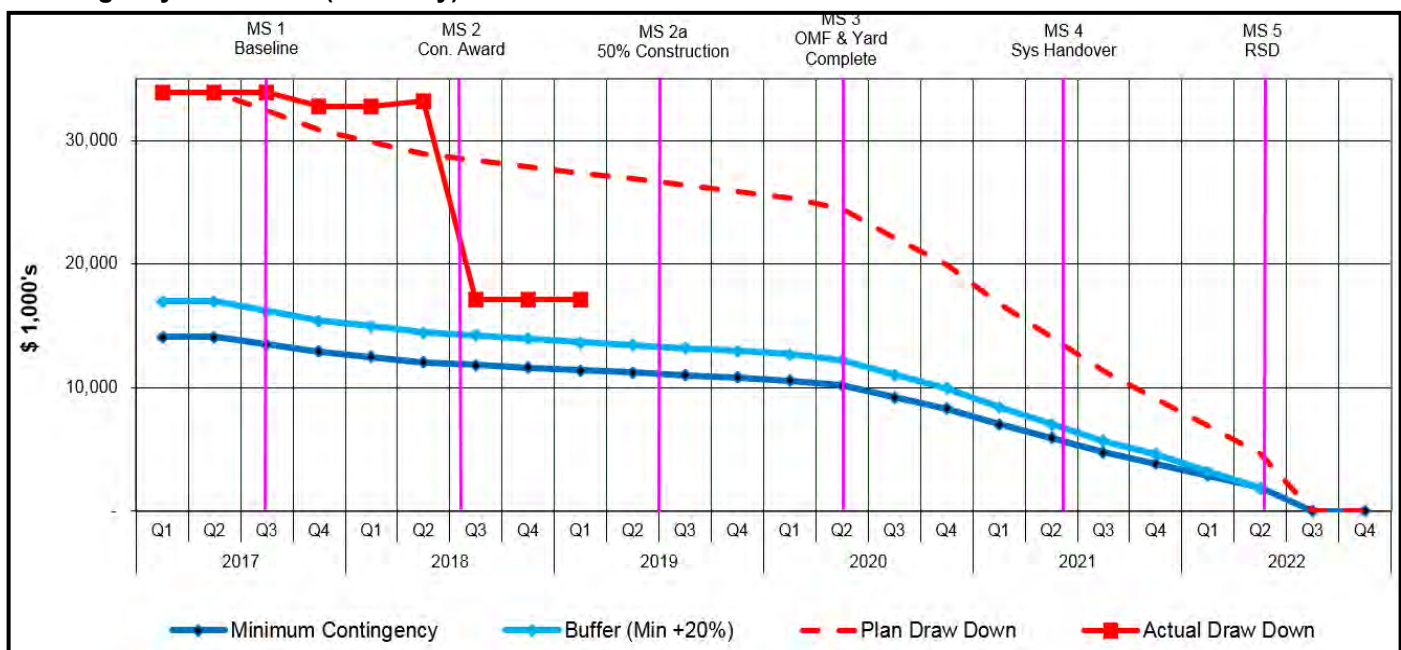
Type	Baseline		Current	
	Amount	% of Total	Amount	% of Work
Design Allowance	\$4.2	2.2%	\$0.0	0.0%
Allocated Contingency	\$13.5	6.8%	\$9.0	5.4%
Unallocated Contingency	\$16.1	8.2%	\$8.1	4.9%
Total	\$33.8	17.2%	\$17.1	10.2%

Table figures are shown in millions.

Contingency by Type



Contingency Drawdown (Quarterly)

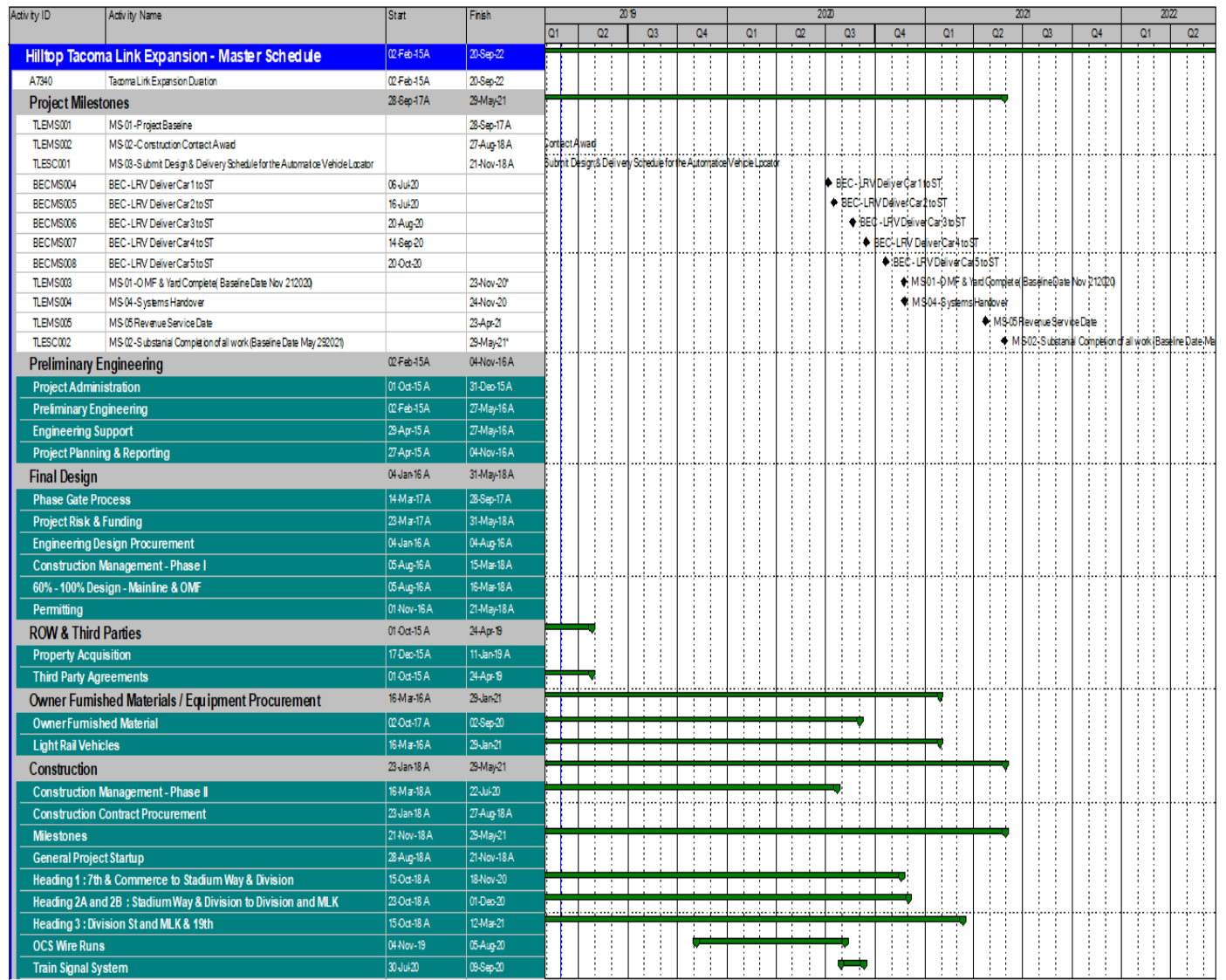


Link Light Rail Hilltop Tacoma Link Extension



Project Schedule

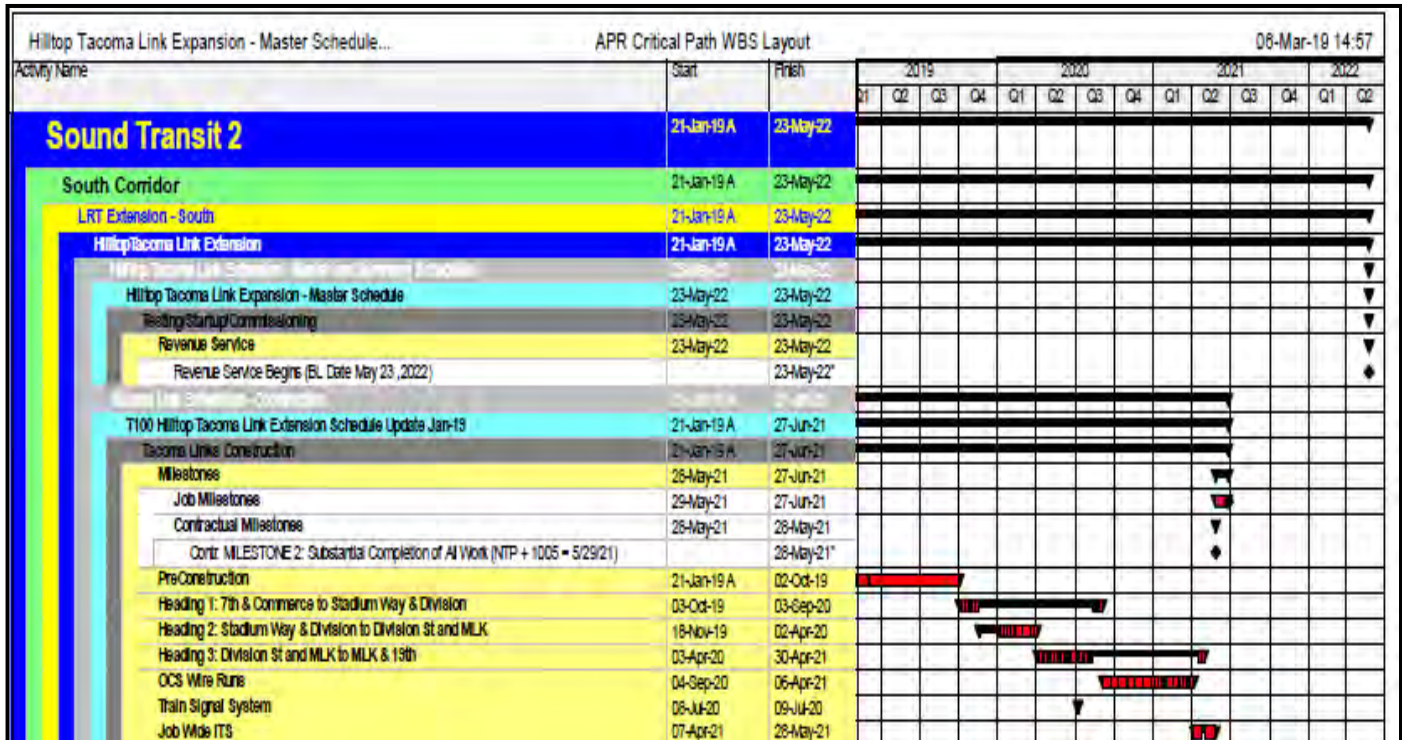
The Master Schedule has been updated through the end of February 2019. The LRV procurement contractor held a PDR on of Preliminary Design Review #1 (PDRs) scheduled in late 1st QTR 2019. Preliminary Design Review #2 in 2nd QTR 2019 and Final Design Review (FDR) completion in 3rd QTR 2019. Forecast delivery of the LRVs forecasts the first car arriving in 3rd QTR 2020 and last car in 4th QTR 2020.



Critical Path Analysis

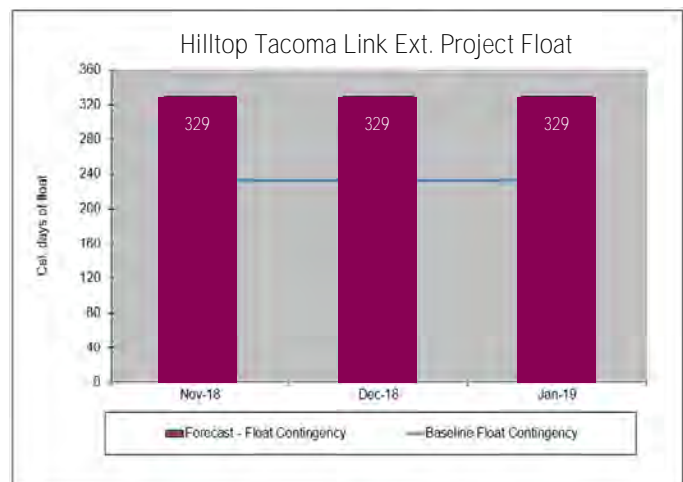
The Hilltop Tacoma Link Extension project critical path analysis for Jan 2019 .

The critical path is begins in T100 Construction which starts with the procurement and installation of Traffic Signal Poles and Equipment in Heading 1 and completing in Heading 3, OCS Wires Assemblies and Registration completion, and Job Wide ITS Installation for Mainline required for MS 02 Substantial Completion of Work (Baseline date May 29, 2021).



Project Float

The Tacoma Link Extension project currently forecasts 329 days of unallocated project float.



Link Light Rail

Hilltop Tacoma Link Extension



Right-of-Way

The Hilltop Tacoma Link Operations and Maintenance Facility will be expanded to the east and five new vehicles will be purchased. The Right-of-Way effort for this project involves the acquisition of a range of property interests which includes compensable (e.g. fee acquisitions, guideway easements, permanent and temporary construction easements) and non-compensable rights (e.g. rights of entry). These acquisitions will result in owner and tenant residential and commercial relocations. The Right-of-Way program status for this period is summarized in the following table. Design efforts have reduced the total acquisitions required from 140 to 22 parcels.

Tacoma Link Extension Property Acquisition Status					
ACQUISITION				RELOCATION	
Total Acquisitions	Board Approved	Offers Made to date	Closings to date	Relocations Required	Relocations Completed to date
20	20	20	20	1	1
<i>* All numbers are cumulative totals, except where noted. Number of totals may differ from other reports due to the timing of reporting periods.</i>					

Community Outreach

- Met with MultiCare to continue planning the jack-and-bore operations in front of Tacoma General, Feb 1.
- Provided acoustic noise panels and white noise machines for Tacoma General Hospital's call center.
- Conducted a noise test at Tacoma General's call center to evaluate noise mitigation. Based on this test, Sound Transit asked the contractor to install noise blankets around loud equipment near the call center. Communicated regularly with MultiCare during potholing.
- Gave project briefings to Resurrection Church (Feb 5) and Kaiser Permanente (Feb 7).
- Met with the City of Tacoma's outreach coordination group, Feb. 14.
- Held the Coffee with the Contractor in the Commerce St area, Feb 20.
- Updated the Stadium Thriftway about construction in weekly meetings.
- Gave two-week notification to MultiCare and Kaiser Permanente about the jack-and-bore operations. Coordinated with MultiCare's communications team.
- Produced and distributed construction alerts about the OCS foundations on Martin Luther King Jr. Way and sewer work on Division Ave..
- Designed and mailed notification about the storm water work on N. 1st St., including the full street closure. This piece was mailed to residents and businesses within ¼ mile of the construction.
- Produced and distributed weekly construction alerts about traffic impacts along the route.
- Continued visiting businesses door-to-door.

Sound Transit Board Actions

Board Action	Description	Date
N/A	No Board Actions this month	

Construction Safety

Data/ Measure	February 2019	Year to Date	Project to Date
Recordable Injury/Illness Cases	0	0	1
Days Away From Work Cases	0	0	0
Total Days Away From Work	0	0	0
First Aid Cases	0	2	3
Reported Near Mishaps	0	0	7
Average Number of Employees on Worksite	111	-	-
Total # of Hours (GC & Subs)	6,192	12,190	24,003
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	0.00	0.00	8.33
LTI Rate	0.00	0.00	0.00
Recordable National Average	3.10	3.10	3.10
LTI National Average	1.20	1.20	1.20
Recordable WA State Average	5.70	5.70	5.70
LTI WA State Average	2.30	2.30	2.30

Note: Due to the timing of contractor's reporting periods, the current month's numbers above are a combination of actuals and estimates.

Link Light Rail Hilltop Tacoma Link Extension



Contract T100 — Hilltop Tacoma Link Extension

Current Progress

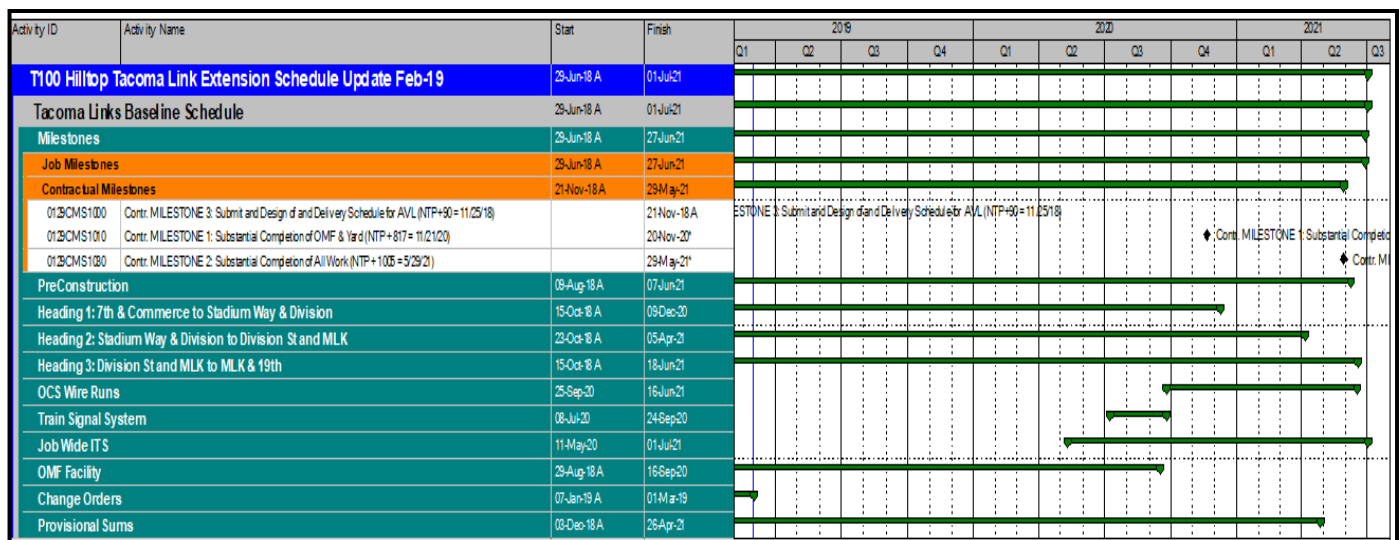
The T100 Contractor, Walsh Construction Company II, LLC, is continuing OMF and Mainline work at grade.

- Potholing work at Heading 3 Division ST and MLK complete.
- Continues installation of ELB Storm Drain at Heading 1 7th & Commerce to Stadium way
- Continues installation of ELB Storm Drain at Heading 2 Stadium Way and Tacoma Ave.
- Completion of Sanitary Sewer at Heading 3 MLK and 17th Ave.
- Excavated Truing Pit at OMF.
- Drill & Install Hydraulic Elevator Casing at OMF complete.

Schedule Summary

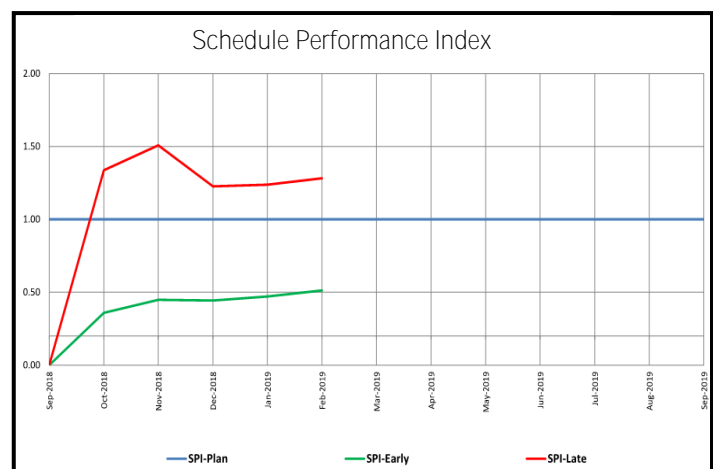
The schedule update for Feb 2019 indicates a target completion date for the OMF Substantial Completion in late November 2020 and Substantial Completion T100 complete in May 2021.

The critical path has changed from last months submittal from the heavy utility work located in the mainline to installation of piles in the OMF Facility structures. Weighted Percent Complete is currently 20%.



Schedule Performance Index

This period, the SPI-early improved slightly to 0.51 and the SPI-late increased to 1.28. The early index indicates that the contractor continues to perform behind the plan when compared to the baseline schedule.



Next Period's Activities

- Procurement of specialty rail, tangent rail and pre-curved rail materials and traffic signal equipment.
- Excavation of elevator pit in OMF.
- Completion of Sanitary Sewer Storm & Water work and start work on Traction Powered Substation in Heading 1.
- Continue Sewer and Storm work in Heading 2.
- Completion of pot holing and storm utilities and start of intersection work in Heading 3.

Closely Monitored Issues

- The third party utility relocations (Tacoma Public Utility, CenturyLink and PSE) appear to have little impact on the T100 contract schedule and the HTLE Contractor has shown flexibility in accommodating the remaining third party work through coordinated sequencing. ST CM continue to monitor for potential cost and schedule impacts.
- Notifications to the community are critical in providing advance notice of upcoming construction activities. Community Outreach staff are managing this effort with the support of Contractor, City of Tacoma and ST field staff.

Cost Summary

Present Financial Status	Amount
T100 Contractor— Walsh Construction Company	
Original Contract Value	\$ 108,295,000
Change Order Value	\$ 0
Current Contract Value	\$ 108,295,000
Total Actual Cost (Incurred to Date)	\$ 21,023,547
Percent Complete	20%
Authorized Contingency	\$ 5,414,750
Contingency Drawdown	\$ 0
Contingency Index	N/A



Excavating driveway and rebuilding manhole at Thriftway Market.

Link Light Rail Tacoma Dome Link Extension

Project Summary

Scope

Limits	Federal Way Transit Center to South Federal Way, Fife, East Tacoma, and Tacoma Dome
Alignment	The Tacoma Dome Link Extension expands light rail 9.7 miles from the Federal Way Transit Center to Tacoma. The representative alignment travels adjacent to I-5 with four stations.
Stations	South Federal Way, Fife, and East Tacoma (elevated stations) and Tacoma Dome (at-grade station)
Systems	Signals, traction power, communications (SCADA), Operations and Maintenance Facility South (OMF South)
Phase	Planning: Alternative Development
Budget	\$125.7 Million for Preliminary Engineering Phase 1—Alternative Development
Schedule	Revenue Service: December 2030



Map of Tacoma Dome Link Extension.

Key Project Activities

- OMF South scoping period began.
- Federal Way council study session to provide update on level 2 evaluation and OMF South.
- TDLE briefing to Puyallup Tribe of Indians Council.
- ELG meeting to brief on early level 2 technical evaluation results and preview of OMF South scoping period.
- Conducted Value Analysis Workshop for TDLE and OMF South.
- Federal Way PAA approved by ST System Expansion Committee and Board in January.
- Continued preparing for TDLE Scoping targeted to start April 1st.
- Continued negotiations of Project Administration Agreement and Task Order 1 with the City of Tacoma.
- Continued monthly coordination meetings with the Cities of Federal Way, Fife, Milton and Tacoma.

Project Cost Summary

The Tacoma Dome Link Extension and OMF South project cost is summarized below in two cost categories. The first table summarizes costs in accordance with Sound Transit's budget Work Breakdown Structure (WBS). The second table summarizes costs in accordance with the FTA's Standard Cost Categories (SCC) format. The figures in both tables are shown in millions.

Project cost and monthly expenditures are trending lower than planned monthly budget but the current forecast is on track for completing this phase within the authorized budgeted amount.

Cost Summary by Phase

Project Phase	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$26.8	\$3.4	\$3.0	\$26.8	\$0.0
Preliminary Engineering	\$87.1	\$10.3	\$5.7	\$87.1	\$0.0
Final Design	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Construction Services	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
3rd Party Agreements	\$5.8	\$0.2	\$0.1	\$5.8	\$0.0
Construction	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$6.0	\$0.0	\$0.0	\$6.0	\$0.0
Total	\$125.7	\$13.9	\$8.8	\$125.7	\$0.0

Cost Summary by SCC

SCC Element	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
10 Guideway & Track	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
20 Stations	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
30 Support Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
50 Systems	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Construction Subtotal (10 - 50)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
60 Row, Land	\$5.0	\$0.0	\$0.0	\$5.0	\$0.0
80 Professional Services	\$110.9	\$13.9	\$8.8	\$110.9	\$0.0
90 Unallocated Contingency	\$9.8	\$0.0	\$0.0	\$9.8	\$0.0
Total (10 - 90)	\$125.7	\$13.9	\$8.8	\$125.7	\$0.0

Link Light Rail Tacoma Dome Link Extension



Risk Management

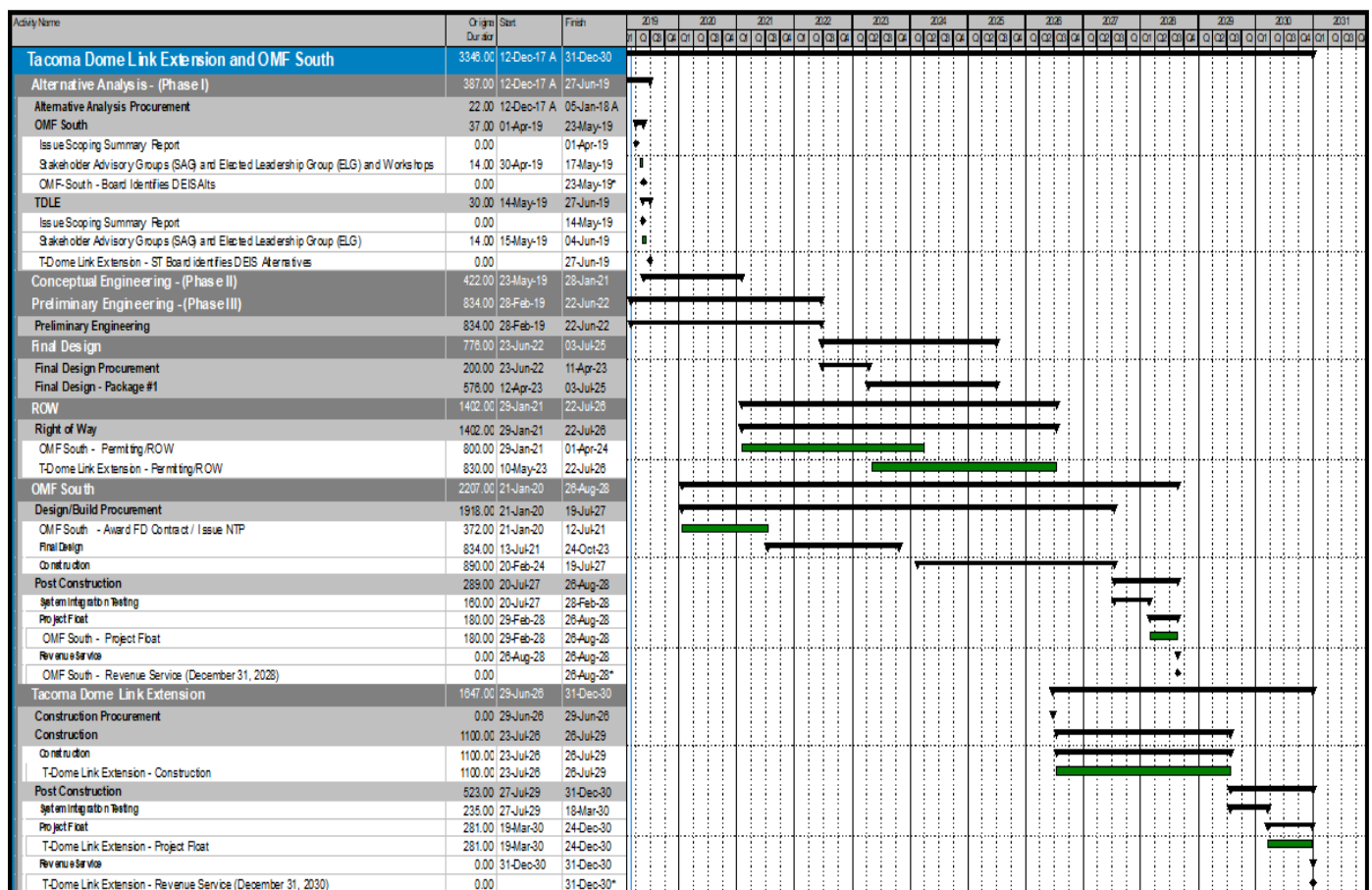
The Tacoma Dome Link Extension and OMF South Risk and Contingency Management Plan (RCMP) will establish a risk management and oversight process for identifying, assessing, and monitoring risks and develops risk reduction/mitigation plans. It will provide a tool for the project team to proactively manage risks on the project. It is Sound Transit's responsibility for continuously monitoring project status and associated risks, taking mitigation actions for known risks identified on the risk register, and effectively responding in a timely manner to those risks that pose a significant impact to the project cost or schedule forecast.

The next risk review workshop will be held in March for the 1st QTR 2019. The following are the top project wide risks:

- Preferred alignment cost is greater than the ST3 budgeted project cost may cause the project to delay.
- OMF South cost is greater than the ST3 budgeted project cost may cause the project to delay.
- OMF South can't be built in time for ST3 vehicle schedule.
- ST funding authorization reduced by voters or legislation may result in insufficient local funds.

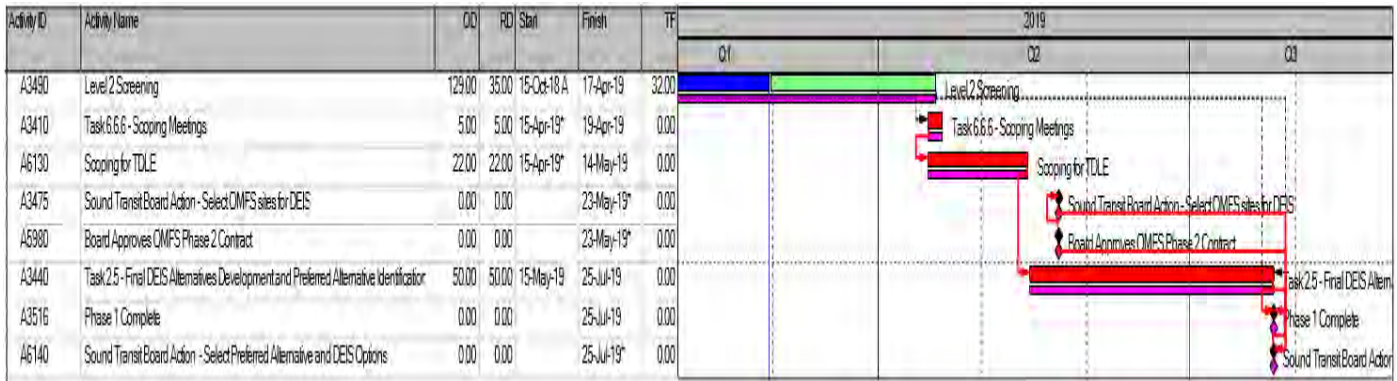
Project Schedule

Phase I Alternative Analysis —The HDR detailed schedule as of February 28, 2019 is remaining on target for completing level 1 and level 2 scoping and Final DEIS Alternatives Development and Preferred Alternative Identification in 2nd QTR 2019 for the OMF South and 3rd QTR 2019 for TDLE.



Critical Path Analysis

Utilizing the criteria of Critical Path equals Total Float less than 5 Days, Phase 1 critical path runs through level 2 screening for TDLE and Sound Transit Board Action to select OMF South sites for DEIS.



Critical Path Schedule - Feb 2019

Community Outreach

- Participated in Dome District meeting.
- Eastside Neighborhood Council.
- Hosted Milton Community Office Hours.
- Hosted Elected Leadership Group meeting.
- Participated in Zero Waste Washington Fix-it Fair.
- Hosted Eastside Tacoma Community Office Hours.
- Conducted field visits to Kent property owners and businesses.
- Participated in Federal Way State of the City.

Sound Transit Board Actions

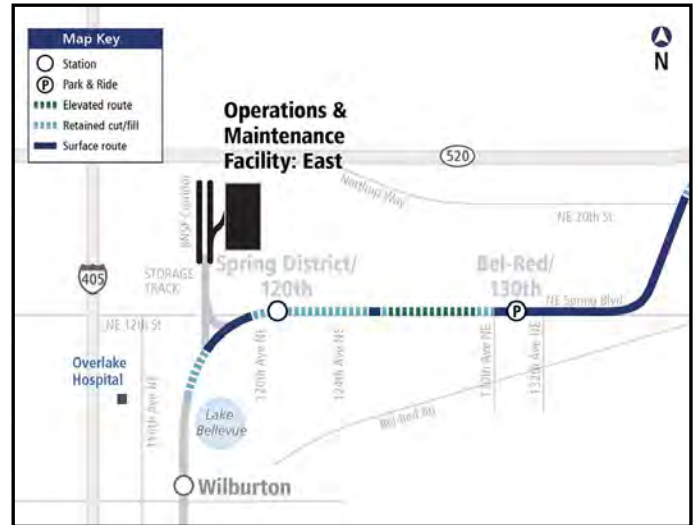
Board Action	Description	Date
	None to report.	

Link Light Rail

Link Operations & Maintenance Facility: East

Project Summary

Scope	The Link Operations and Maintenance Facility: East (OMF East) project, located in the City of Bellevue, includes a 160,000 sq. ft. operations and maintenance facility that will maintain, store and deploy and expanded light rail fleet, including seven LRV service bays, a LRV wash facility and storage for up to 96 LRVs.
Phase	Proceed to Construction
Budget	\$449.2 Million (Baselined July 2016)
Schedule	Project Completion: December 2020



Map of OMF East Site

Key Project Activities

- Design Package (DP) development for DP3A - review IFC resubmittal.
- North vault work continues.
- OCS pole foundation work is in progress.
- Wheel truing pit and truck wash pit work is ongoing.
- OMFE Building foundation work continues.
- OMFE Building electrical undergrounding and plumbing continues.
- Rail delivery has commenced.
- Utility vault installation continues.

Closely Monitored Issues

- Elements of DB Contractor's proposal (shear wall elimination for future development) may require MOU amendment with City of Bellevue and council action may be required.
- Spur property exchange proposal with City of Bellevue may complicate the timing of the RFP for Transit Oriented Development.
- Commercial issues with the Design Build contractor regarding differing site conditions.
- Track related deviation with regards to the dynamic envelope of the LRV movements in the yard.

Project Cost Summary

The Baseline Budget (July 2016) for the OMF East is \$449.2M. The OMF East cost is summarized into two cost tables. The first table is in accordance with Sound Transit's Work Breakdown Structure (WBS) displaying the cost summary by phase. The second table summarizes project cost by SCC, in accordance to the FTA Standard Cost Categories (SCC) format. Both tables show figures in millions.

The Estimated Final Costs (EFC), continues to be projected at approximately \$449.2M. This period's expenditure of about \$4.5M. The total project cost incurred from \$193.1M to \$197.5M. The primary cost drivers during this period on the OMF East project comes from the design build (construction) phase at \$3.94M or roughly 87% of the total monthly expenditures. The next cost driver this period are the Construction Services and Administrative Phase expenditures at about \$419K and \$102K respectively.

Cost Summary by Phase

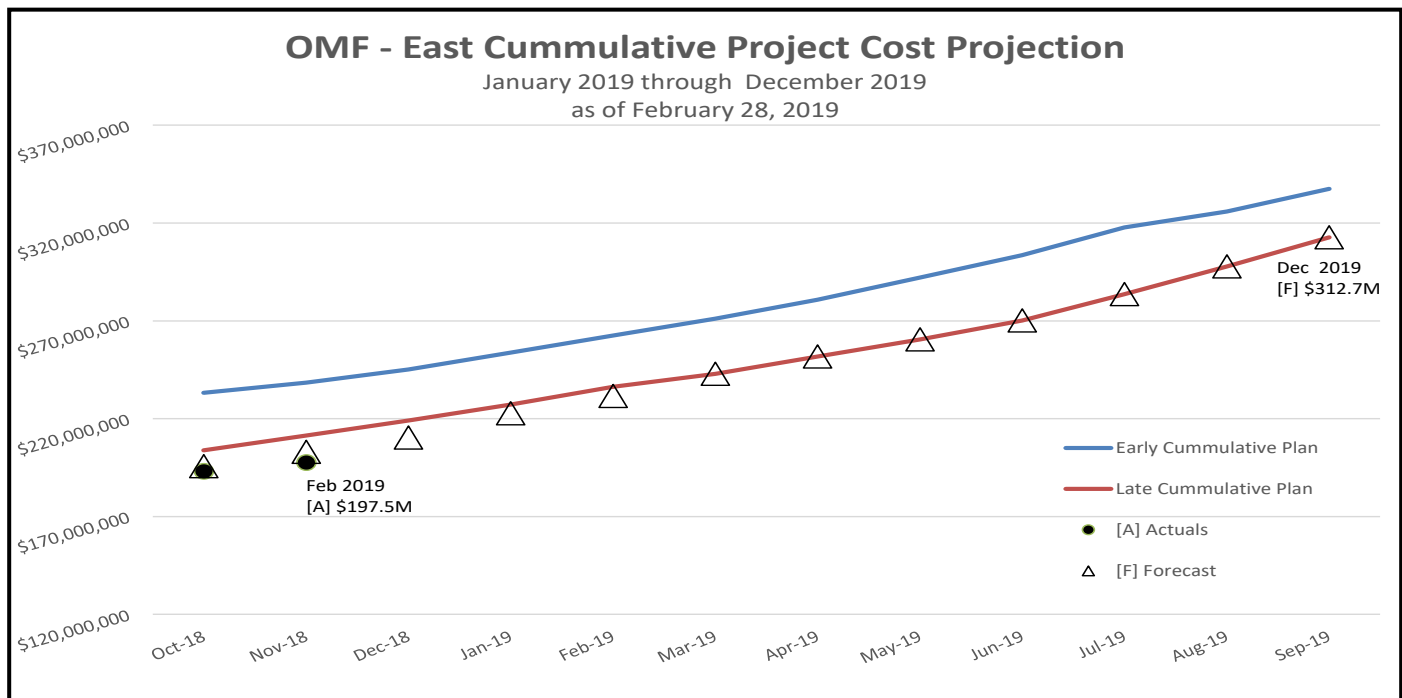
Project Phase	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$17.6	\$17.6	\$5.4	\$5.4	\$17.6	\$0.0
Preliminary Engineering	\$9.5	\$9.5	\$9.0	\$8.7	\$9.5	\$0.0
Final Design	\$0.4	\$0.4	\$0.0	\$0.0	\$0.4	\$0.0
Construction Services	\$19.3	\$19.3	\$17.6	\$5.8	\$19.3	\$0.0
3rd Party Agreements	\$3.1	\$3.1	\$0.3	\$0.1	\$3.1	\$0.0
Construction	\$264.8	\$264.8	\$223.0	\$76.0	\$264.8	\$0.0
ROW	\$134.5	\$134.5	\$101.9	\$101.6	\$134.5	\$0.0
Total	\$449.2	\$449.2	\$357.3	\$197.5	\$449.2	\$0.0

Cost Summary by SCC

SCC Element	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
10 Guideway & Track	\$2.6	\$4.4	\$4.1	\$1.0	\$4.1	\$0.3
20 Stations	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
30 Support Facilities: Yard, Shop	\$140.1	\$136.1	\$124.3	\$41.5	\$145.5	-\$9.4
40 Sitework & Special Conditions	\$43.6	\$48.5	\$39.7	\$10.5	\$42.7	\$5.8
50 Systems	\$43.0	\$41.6	\$38.6	\$9.1	\$38.6	\$3.0
Construction Subtotal (10 - 50)	\$229.3	\$230.6	\$206.6	\$62.0	\$230.8	-\$0.3
60 ROW, Land, Improvements	\$134.5	\$134.5	\$101.9	\$101.6	\$134.5	\$0.0
70 Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
80 Professional Services	\$71.6	\$70.3	\$48.8	\$33.9	\$70.1	\$0.3
90 Unallocated Contingency	\$13.8	\$13.8	\$0.0	\$0.0	\$13.8	\$0.0
Total (10 - 90)	\$449.2	\$449.2	\$357.3	\$197.5	\$449.2	\$0.0

Project Cash Flow Projection

The OMF East cost projection is trending late this period but anticipates to pick up through the following summer. Total project expenditure incurred to date passed \$197.5M with Right-of-Way (ROW) phase cost being the largest driver at 51.4% and Construction Phase at about 38.5%. The projected cash flow was revised this period for the next nine months to reflect some current trends. The Design Builder's (DB) design completion continues to slip specifically on Systems where some procurements were anticipated that did not occur. In addition, ROW acquisitions and relocation phase is reflecting some positive trends where anticipated cost may not materialized as previously anticipated. The revised project expenditure trending is now to reach \$312.7M by December of 2019 which is at the lower bounds of the late planned expenditures.



Risk Management

The Risk and Contingency Management Plan (RCMP) establishes a risk management and oversight process for identifying, assessing, and monitoring risks and develops risk reduction/mitigation plans. It provides a tool for the project team to proactively manage risks on the project. It is Sound Transit's responsibility for continuously monitoring project status and associated risks.

The project has completed Risk Mitigation Milestone 2, the completion of ROW Acquisition and Mass Grading. The Quantitative Risk Assessment (QRA) assessed that with the current risk profile, the project would complete within the baseline schedule and budget. The current top actively managed risk areas remains similar to the previous quarter and are listed below:

- **Design:** As the project approaches the 100% design milestone, changes made to scope or design will have greater cost impact than during the earlier design stages.
- **Scope:** Scope interfaces with East Link (E335/E750) tracks, OCS, Signals, LRV vehicle envelop, Operations' requirement changes creates additional work impacts the project's schedule and budget.
- **Construction:** As the construction commenced with early work; normal and routine construction risks will be encountered and may complicate and influence design completion. Most underground work is now complete, limiting further risk from soils or contamination.

Contingency Management

The Link Operations and Maintenance Facility: East was baselined and approved by Sound Transit Board in July 2016 with a total contingency of \$93.2M. The Project's starting contingency balance as of the Notice to Proceed for Construction was \$71.6M. Reflecting the inclusion of the Design Allowance in the Design Builder contract amount. In this period, there several construction change orders that drew on contingency. The current contingency balance remains practically unchanged at approximately \$69.5M (previous quarter at \$69.7M).

Design Allowance (DA): N/A.

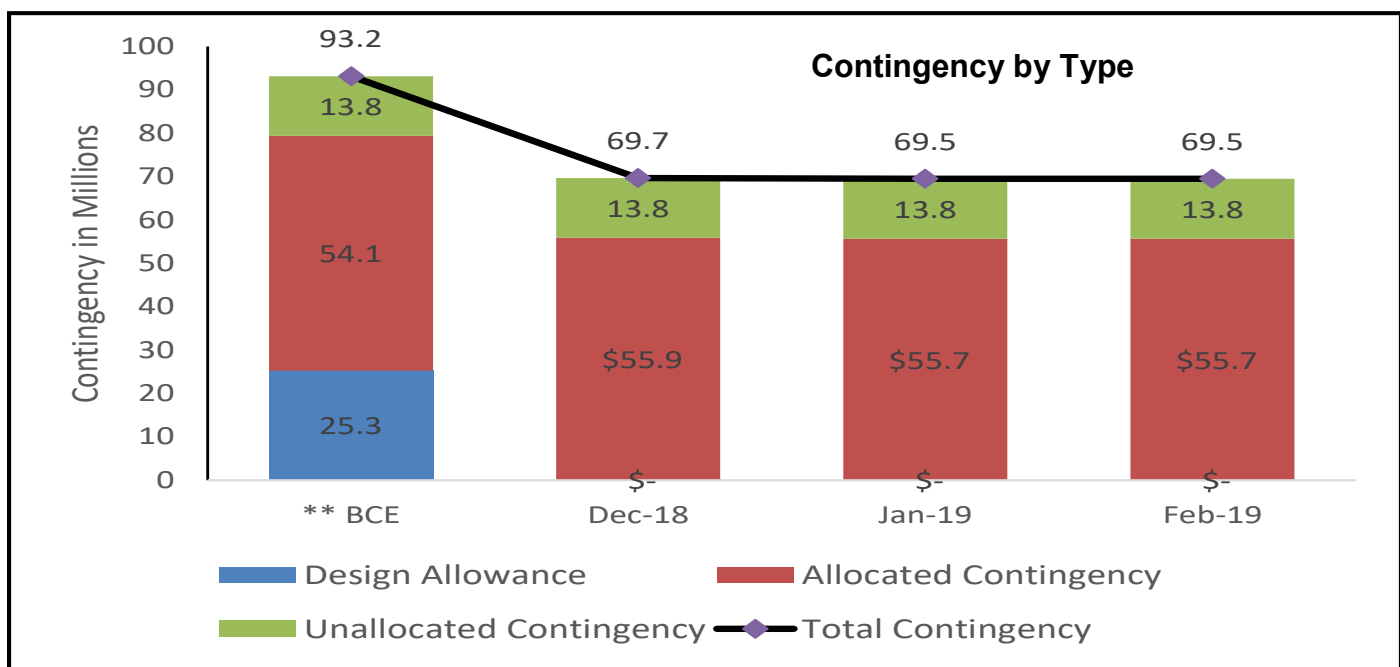
Allocated Contingency (AC) is used to address risks, complexity and unforeseen conditions during the execution of work, including procurement. Allocated contingency balance at the end of this period changed from the previous month at \$55.9M to \$55.7M.

Unallocated Contingency (UAC) is used to address general project-wide cost risks and uncertainties. The baseline UAC amount of \$13.8M reflects no changes this period.

Contingency Status

Contingency Type	Baseline		Current	
	Amount	% of Total	Amount	% of Work Remaining
Design Allowance	\$ 25.3	5.6%	\$ -	0.0%
Allocated Contingency	\$ 54.1	12.0%	\$ 55.7	22.1%
Unallocated Contingency	\$ 13.8	3.1%	\$ 13.8	5.5%
Total	\$ 93.2	20.7%	\$ 69.5	27.6%

Table figures are shown in millions.

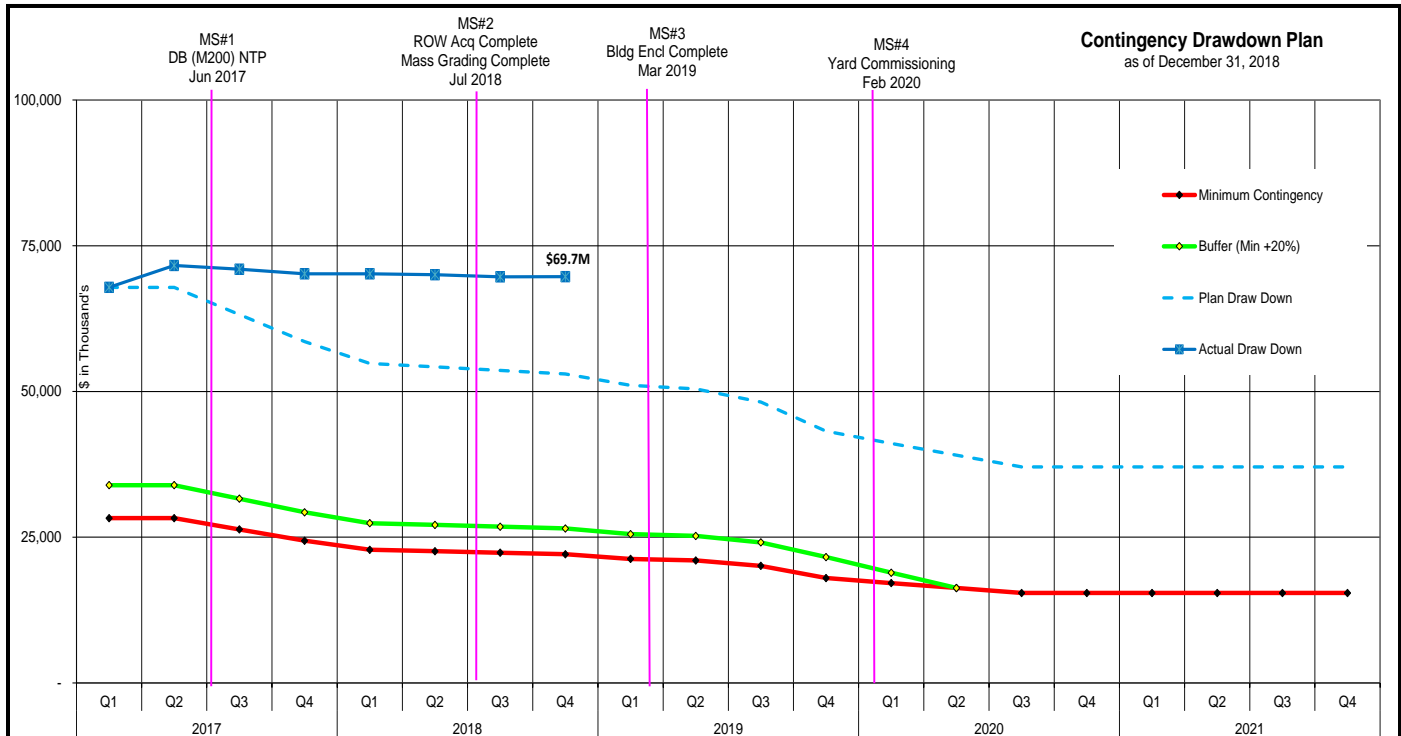


Link Light Rail

Link Operations & Maintenance Facility: East

Contingency Drawdown

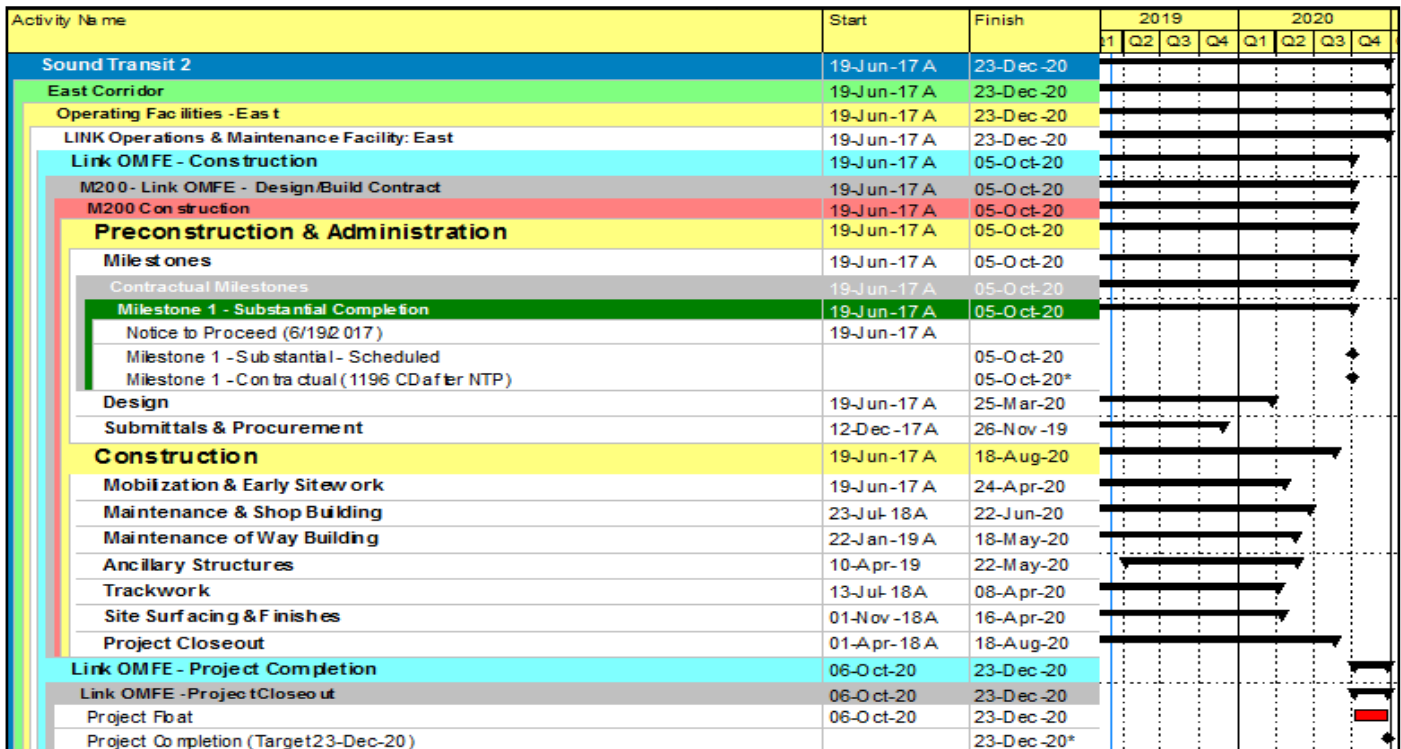
At the end of the 4th QTR 2018, OMF East Project's total contingency drawdown plan is trending positively. Total contingencies balance is at approximate \$69.7M (previously at \$70M) and remains above all the baseline draw down projection and well above both the minimum contingency and the buffered (minimum plus 20%) contingency levels. The next update will be at end of the 1st QTR 2019.



Territorial photo of OMF East site looking north on February 28, 2019

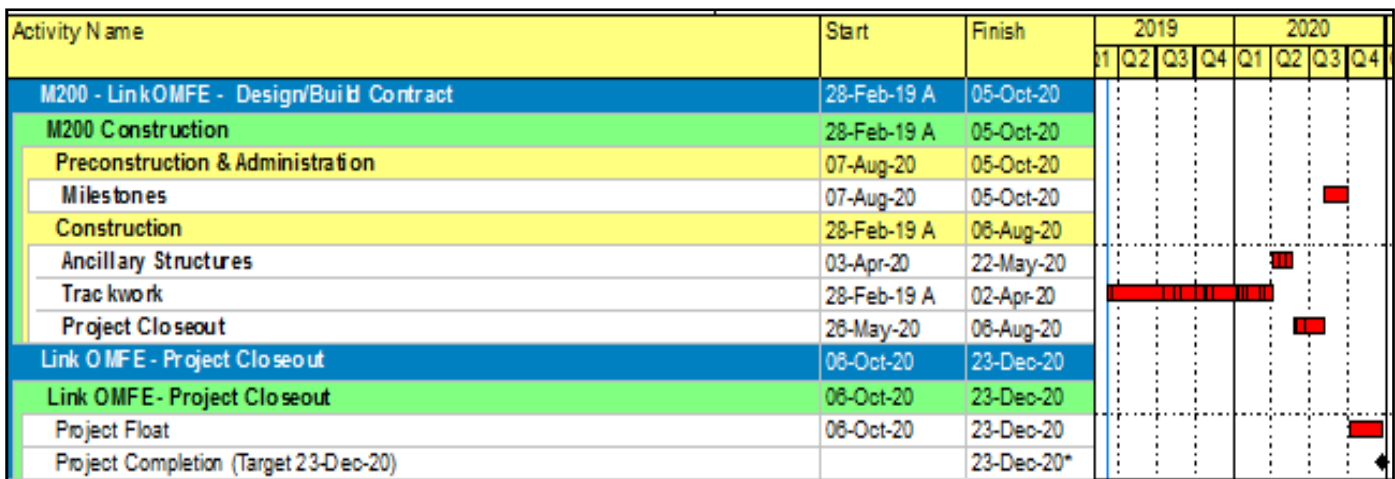
Project Schedule

The schedule for OMF East is now entirely within the M200 contract, which is presented below. The Contractor continues to progress as planned and is forecast to complete on target. Weather impacts slowed the contractor down in February but the time will be recoverable via project float. The OMF East is expected to be available to begin receiving LRVs as needed in Summer 2020.



Critical Path Analysis

The critical path currently runs concurrently through the track work in the storage yard, which was impacted by snow for several days in February. Work in buildings continued without issue, so the two concurrent critical paths have diverged.



Community Outreach

- Ongoing engagement with the public on potential construction impacts to the neighborhood.

Sound Transit Board Actions

Board Action	Description	Date
	None to report this period.	

Construction Safety

Data/ Measure	February 2019	Year to Date	Project to Date
Recordable Injury/Illness Cases	0	1	2
Days Away From Work Cases	0	0	0
Total Days Away From Work	0	0	0
First Aid Cases	1	1	4
Reported Near Mishaps	1	2	5
Average Number of Employees on Worksite	70	-	-
Total # of Hours (GC & Subs)	11,534	32,602	125,606
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	0.00	6.13	3.18
LTI Rate	0.00	0.00	0.00
Recordable National Average	3.10	3.10	3.10
LTI National Average	1.20	1.20	1.20
Recordable WA State Average	5.70	5.70	5.70
LTI WA State Average	2.30	2.30	2.30

Note: Due to the timing of contractor's reporting periods, the current month's numbers above are a combination of actuals and estimates. All previous months' numbers are reconciled and replaced with actuals.

Contract M200 - OMF East Design Build

Current Progress

Design: Hensel Phelps (HP) advanced design packages (DP) for the following areas: Sound Transit's comments were sent to HP regarding DP 3A IFC, Track and Train Control Systems. Design updates continue to DP 3A as HP progresses toward resubmittal of DP 3A in March. DP 3A is the final design package awaiting IFC approval.

Construction: HP continued north vault assemble with precast panel placement, grouting, bedding, and installing of welds. Excavation and subgrade excavation of the west crane pad at the north vault was completed as well. Utility vault installation continued with excavation, placing concrete encasement, and backfilling. Installation of the perimeter fence continued along the south and west boundaries of the project. OMF building work is ongoing with structural steel framing of the southwest portion of the building. Concrete placement at building footings continues to advance.

Next Period's Activities

- Approval of DP #003A IFC.
- Continue North Vault work continues.
- Continue work for OMFE building.
- Continue OCS pole foundation work.
- Continue work at north pit, south pit, train wash pit, wash room pit, and truck wash pit.

Closely Monitored Issues

- **Site infiltration issue:** Contractor has submitted an RFC stating differing site conditions on the soil infiltration rate. ST has rejected this RFC and currently working on partnering activities to resolve the issue. Mediation has begun.
- **North Vault Subgrade Condition:** Potential differing site condition.

Cost Summary

Present Financial Status	Amount
M200 Contractor – Hensel Phelps	
Original Contract Value	\$218,912,000
Change Order Value	\$2,088,595
Current Contract Value	\$220,951,942
Total Actual Cost (Incurred to Date)	\$73,946,130
Percent Complete	37.6%
Authorized Contingency	\$21,891,200
Contingency Drawdown	\$2,088,595
Contingency Index	3.9

*Excludes Betterments



Structural Steel Erection at OMF East Building.

Link Light Rail Light Rail Vehicle Fleet Expansion

Project Summary

Scope	Design, manufacturing, assembly, inspection, testing and delivery of 152 low floor light rail vehicles for service requirements of Northgate, East Link and Lynnwood Link Extensions.
Phase	Manufacturing
Budget	\$740.7 Million (Baseline September 2015, Amended April 2017)
Schedule	Project Completion: 3rd QTR 2024



Artist rendering of the new light rail vehicles fleet.

Key Project Activities

- Qualification testing continues on the first and the second LRV
- LRV Familiarization training was held in January at Siemens facility in Sacramento California.
- 6 cars in final assembly / static and dynamic test phase, with water-tightness test and open item closure underway.
- Final design, test results and other critical deliverables prioritized and in review.
- Planning for first car final inspection and shipment.

Closely Monitored Issues

- Settlement agreement in process to close commercial dispute regarding car jacking points and door supplier change.
- Test Waivers, Siemens is behind on submitting anticipated waiver requests and test procedures.
- First Article inspection packages with open items still be resolved; quality audit surveillance complete.



201 HVAC Qualification Test Set-up



Car Shells being stored outside.

Project Cost Summary

The LRV Fleet Expansion Project has an approved baseline budget of \$740.7M. The project cost is summarized into two cost tables. The first table is in accordance with Sound Transit's Work Breakdown Structure (WBS) displaying the cost summary by phase. The second table summarizes project cost by SCC, in accordance to the FTA Standard Cost Categories (SCC) format. Both tables show figures in millions.

In February, the majority of this period's costs are attributed to administration costs in relation to staff costs of \$68.5k and quality assurance of \$20.8k.

Cost Summary by Phase

Project Phase	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
ADMINISTRATION	\$6.4	\$6.4	\$1.7	\$1.5	\$6.4	\$0.0
CONSTRUCTION SERVICES	\$18.0	\$18.0	\$4.8	\$3.9	\$18.0	\$0.0
VEHICLES	\$716.3	\$716.3	\$649.3	\$83.3	\$716.3	\$0.0
Total	\$740.7	\$740.7	\$655.8	\$88.6	\$740.7	\$0.0

Cost Summary by SCC

SCC Element	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Construction Subtotal (SCC 10 - 50)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
60 ROW, LAND, IMPROVEMENTS	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
70 VEHICLES	\$702.8	\$702.8	\$654.1	\$87.2	\$702.8	\$0.0
80 PROFESSIONAL SERVICES	\$6.1	\$6.1	\$1.6	\$1.5	\$6.1	\$0.0
90 CONTINGENCY	\$31.7	\$31.7	\$0.0	\$0.0	\$31.7	\$0.0
Capital Total (SCC 10 - 90)	\$740.7	\$740.7	\$655.6	\$88.6	\$740.7	\$0.0

**Totals may not equal column sums due to rounding of line entries.*

Risk Management

The Risk and Contingency Management Plan (RCMP) establishes a risk management and oversight process for identifying, assessing, and monitoring risks and develops risk reduction/mitigation plans. It provides a tool for the project team to proactively manage risks on the project. It is Sound Transit's responsibility for continuously monitoring project status and associated risks. The project's qualitative risk register reflects 4th QTR 2018.

The current top risk areas are listed below:

- Hoist Beam Lifting Issues, OMF (Forest St.) not able to lift car until limit springs are upgraded by Siemens
- Design of the propulsion and auxiliary power system is new; risk of unknown issues during acceptance testing.
- Commissioning of LRVs is impacted due to lack of sufficient space, lift access or other resources at OMF (Forest St.).
- Interface details between old ATP and ST1 vehicle.
- Link Storage Capacity constraints may delay delivery or increase cost of receiving spare parts for ST2 LVR.

Link Light Rail Light Rail Vehicle Fleet Expansion



Contingency Management

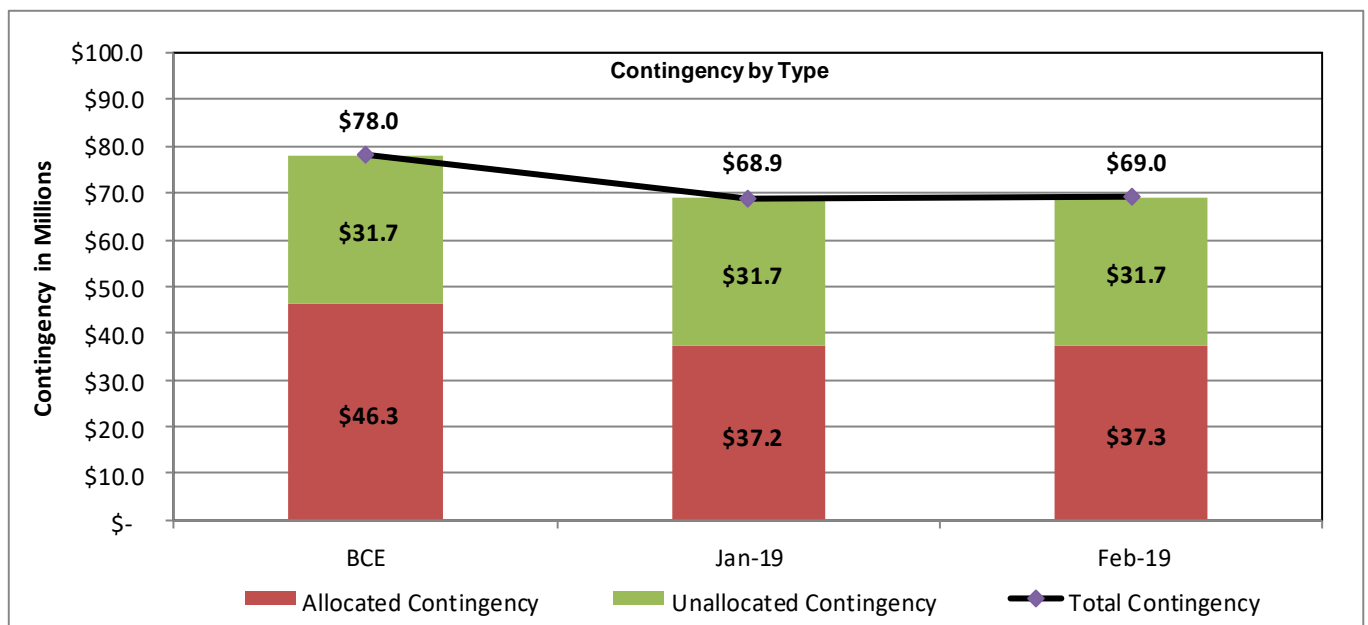
The project's budget was Baseline in September 2015 and was amended in April 2016 to exercise the option LRV contained a total of \$78.0M of Total Contingency. The project's Total Contingency is currently at \$69.0M or about 12.1 % of remaining work in the project.

Design Allowance (DA) was established to account for unquantified scope at the time of the cost estimate. This project contains \$0 design allowance.

Allocated Contingency (AC) is used to address risks, complexity and unforeseen conditions during the execution of work, including procurement. The project baseline's allocated contingency was \$46.3M. The current available allocated contingency is \$36.1M . Approximately \$1M contingency was drawn last quarter for LRV change orders.

Contingency Status	Baseline		Current	
	Amount	% of Total	Amount	% of Work Remaining
Design Allowance	\$ -	0.0%	\$ -	0.0%
Allocated Contingency	\$ 46.3	6.4%	\$ 37.3	6.6%
Unallocated Contingency	\$ 31.7	4.3%	\$ 31.7	0.0%
Total	\$ 78.0	10.7%	\$ 69.0	12.1%

Contingency by Type



Project Schedule

The LRV Fleet Expansion project schedule is shown below. The progress schedule below was established by using the last monthly production schedule submittal and forecast milestones updates for engineering final design during the weekly progress and coordination meeting.

As of February 2019, Siemens continues to forecast the 2nd LRV to be shipped in place of 1st LRV to Sound Transit facility will arrive on or before March 27, 2019. This is the result of the schedule for re-work on the 1st LRV which will cause it to ship after LRV#005 in 2nd QTR 2019. At time of publication, the arrival of the 1st LRV has been postpone subject to completion of the First Article of Inspection.

Activity ID	Activity Name	Start	Finish	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
ST2 Light Rail Vehicle Fleet Expansion				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
ST2 Light Rail Vehicle Fleet Expansion														
LRV Engineering and Manufacture														
A1820	LRV Design Reviews, Manufacturing, and System Tests	11-Oct-18	04-Mar-19											
LRV Delivery Schedule														
LRV #1-122 (122 LRV Base Order)														
A1825	Delivery of 1st LRV (BL 27-Mar-19)		15-Mar-19											
A1835	Delivery of 40th LRV - Northgate Link Vehicle Deliveries Complete (BL 26-Jun-20)		04-May-20											
A1838	Delivery of 42nd LRV - Existing OMF at capacity (104 LRVs) (BL 27-Jul-20)		22-May-20											
A2080	Final Acceptance of Vehicles (BL 28-Feb-23)		01-Feb-23											
A2070	Delivery of 122nd LRV - Final ST2 Delivery (BL 26-Aug-22)		06-Jul-22											
LRV #123 - 152 (30 LRV Options) - Change Order #4														
A2080	Delivery of 152nd LRV - Final Delivery (BL 26-Feb-24)		20-Dec-23											
A2090	Final Acceptance of Vehicles (BL 28-Aug-24)		26-Jun-24											
Project Closeout														

Critical Path Analysis

The critical path continues from LRV #15 through #122 car shell production, final assembly, shipment and arrival at O&M Facility, to Final Acceptance Test milestone completion of LRV #152. Delivery of all 40 light rail vehicles required for Northgate Link Extension is currently anticipated approximately a year ahead of the start of revenue service. This is well within requirements for a successful commissioning and testing of the LRVs prior to revenue simulation period. Consequentially, the planned deliveries and commissioning and testing of light rail vehicles are also ahead of requirements for East Link Extension.

LRV Manufacturing Critical Path Schedule

Activity ID	Activity Name	Start	Finish	Total Float	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
SEA0940	Car Shell Production LRV#015	20-Nov-18	09-Feb-19	0.00	Q4										
SEA1110	Car Shell Production LRV#122	17-Dec-20	19-Feb-21	0.00											
SEA18020	Car Shell Finishing LRV#123	08-Mar-22	11-Apr-22	0.00											
SEA18720	Car Shell Production LRV#129	14-Apr-22	13-Jun-22	0.00											
SEA18040	Final Assembly LRV#123	20-Apr-22	30-Jun-22	0.00											
SEA18180	Final Assembly LRV#124	08-May-22	20-Jul-22	0.00											
SEA22480	Car Shell Production LRV#152	06-Jun-23	08-Aug-23	0.00											
SEA22500	Car Shell Finishing LRV#152	18-Aug-23	20-Sep-23	0.00											
SEA22520	Final Assembly LRV#152	29-Sep-23	08-Dec-23	0.00											
SEA22420	Shipment and Arrival at O&M Facility LRV#151	20-Nov-23	28-Nov-23	0.00											
SEA22580	Contractual Delivery LRV#152	20-Dec-23		0.00											
SEA22570	Acceptance Testing (includes MP and GBV) LRV#152	21-Dec-23	07-Mar-24	0.00											
SEA22580	Burn-In LRV#152	08-Mar-24	28-Mar-24	0.00											
SEA22590	Contractual Conditional Acceptance (Milestone A-E) LRV#152	01-Apr-24		0.00											
SEA22600	Final Acceptance (Milestone A-F) LRV#152	26-Jun-24		0.00											

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Link Capital Program Staffing October – December 2018 (updated quarterly)

Recruiting Status

The following positions were filled in 4th QTR 2018 to support the Link Capital Program:

Position	Position
DECM Executive Director	Sr. Scheduling Engr
Deputy Project Director, Lynnwood Link	Risk Engineer
Permit Administrator (2)	Principal Construction Manager (2)
Sr. Land Use Permitting	Deputy Construction Manager
Manager, Civil Engineering	Sr. Project Manager
Mechanical Engr, Fire Protection	Deputy Project Director, Vehicles
Sr. Systems Engr, Traction Electrification	Capital Signage Specialist
Sr. Systems Engr, Rail/Vehicle	Project Director, Environmental Affairs
Project Control Coordinator (2)	Sr. Environmental Planner
Sr. Project Control Specialist	Environmental Planner

As of the end of 4th QTR 2018, below is the current DECM and PEPD staffing levels:

Division	Total Positions	Open Positions	Filled Last Quarter
Executive, includes Project Directors	22	3	2
Project Management	34	2	3
Civil/Structural Engineering	60	13	1
System Engineering	40	2	2
Architecture & Art	18	0	1
Permitting	13	1	3
Construction Management	31	3	3
Project Control	62	3	5
Real Property	19	2	0
Capital Project Development	34	2	0
Environmental Affairs & Sustainability	27	2	3
TOTAL	360	33	23

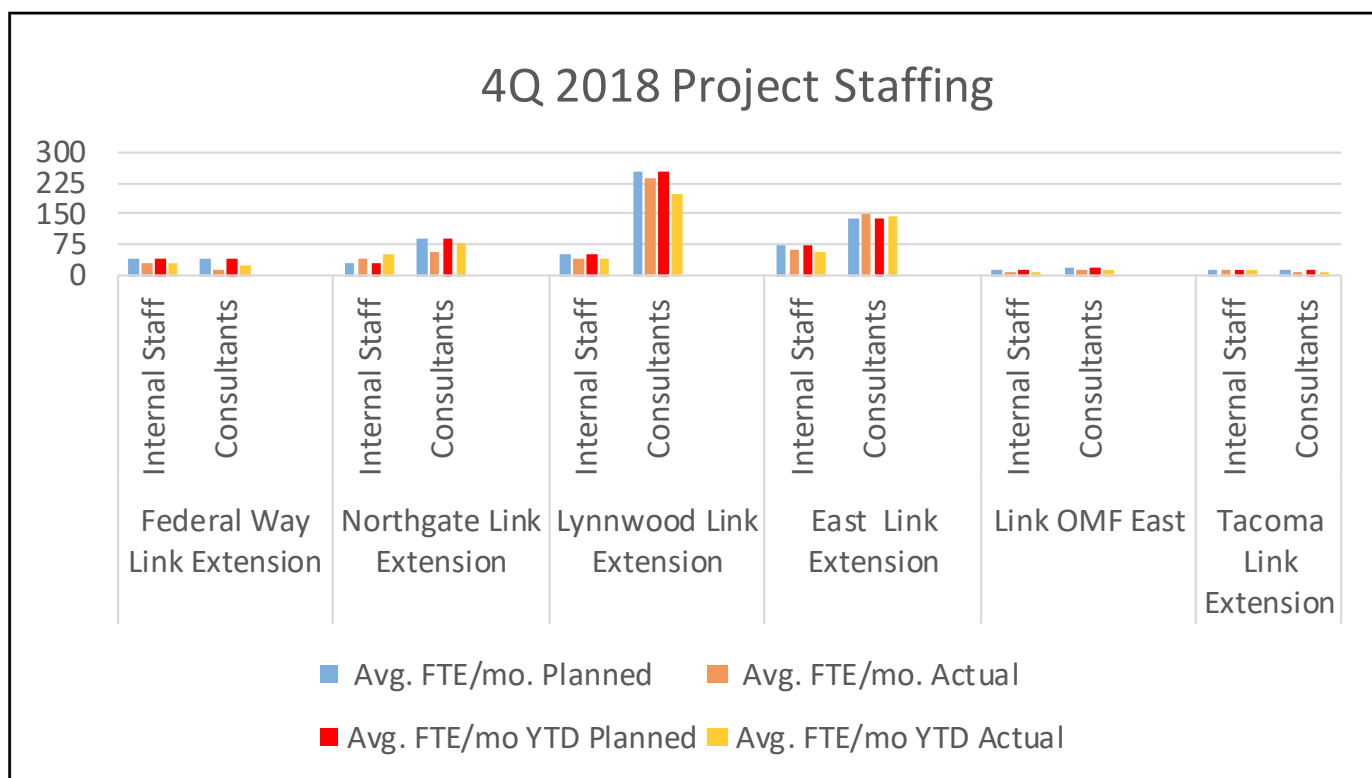
Link Light Rail Staffing Report



Staffing Variance relative to Plan

There were 197 internal and 483 consultant full time equivalents (FTE) supporting design and construction of Link light rail extensions (Table 1). Staffing for the Lynnwood, East, and Tacoma Link Extensions were within 10% of plan. Staffing for the Federal Way and Northgate Link Extensions and OMF East were 58%, 80%, and 66% of plan respectively.

Project	Sound Transit Staff				Consultants				Total (AVG. YTD)			
	FTE		Variance		FTE		Variance		FTE		Variance	
	Planned	Actual	FTE	% of Plan	Planned	Actual	FTE	% of Plan	Planned	Actual	FTE	% of Plan
Federal Way Link Extension	41	32	-9	-21%	41	15	-26	-64%	82	47	-35	-42%
Northgate Link Extension	30	39	8	27%	91	58	-33	-36%	121	96	-25	-20%
Lynnwood Link Extension	53	43	-10	-19%	255	235	-20	-8%	308	279	-30	-10%
East Link Extension	73	63	-11	-15%	140	150	10	7%	213	212	-1	-1%
OMF East	13	7	-6	-46%	19	14	-5	-26%	32	21	-11	-34%
Tacoma Link Extension	12	13	1	10%	12	11	-1	-10%	24	24	0	0%
Total	223	197	-26	-12%	558	483	-75	-13%	781	679	-102	-13%



AA	Alternative Analysis	GC/CM	General Contractor /Construction Management
APE	Area of Potential Impact	HVAC	Heating, Ventilation and Air Conditioning
BCE	Baseline Cost Estimate	ICD	Integration Control Document
BCWS	Budgeted Cost of Work	IFB	Issue for Bids
BIM	Building Information Modeling	IFC	Industry Foundation Classes
BNSF	Burlington Northern Santa Fe Railway	IRT	Independent Review Team
CCB	Change Control Board	IWP	Industrial Waste Permit
CDF	Controlled Density Fill	JA	Jacobs Associates
CHS	Capitol Hill Station	JARPA	Joint Aquatic Resource Permit Application
CM	Construction Management	KCM	King County Metro
CMU	Concrete Masonry Unit	LNTP	Limited Notice to Proceed
CO	Change Order	LRRP	Light Rail Review Panel
CPI	Cost Performance Index	LRT	Light Rail Transit
CPM	Critical Path Method	LRV	Light Rail Vehicle
DAHP	Department of Archaeology & History Preservation	LTK	LTK Engineering Services
DART	Days Away, Restricted or Modified	MACC	Maximum Allowable Construction Cost
DB	Design -Build	MDA	Major Discharge Authorization
DBPM	Design-Build Project Management	MLK	Martin Luther King, Jr. Way
DECM	Design, Engineering and Construction Management	MOA	Memorandum of Agreement
DEIS	Draft Environmental Impact Statement	MOS	Minimum Operable Segment
DP	Design Package	MOU	Memorandum of Understanding
DPD	Seattle Department of Planning and Development	MPPCV	Major Public Project Construction Variance
DSC	Differing Site Conditions	MRB	Material Review Board
DSDC	Design Support During Construction	MTP	Montlake Triangle Project
DSTT	Downtown Seattle Transit Tunnel	MUP	Master Use Permit
EFC	Estimated Final Cost	NB	Northbound
EMI	Electro Magnetic Interference	NCR	Notification of Change Report
ERC	East Rail Corridor	NCTP	North Corridor Transit Partners
FD	Final Design	NEPA	National Environmental Policy Act
FHWA	Federal Highway Administration	NOAA	National Oceanic and Atmospheric Administration
FSEIS	Final Supplemental Environmental Impact Statement	NTP	Notice to Proceed
FFGA	Full Funding Grant Agreement	OCS	Overhead Catenary System
FTA	Federal Transit Administration	OMF	Operations and Maintenance Facility
FTE	Full Time Employee	OMSF	Operations and Maintenance Satellite Facility

Link Light Rail

Acronyms



PE	Preliminary Engineering	UAC	Unallocated Contingency
PEP	Project Execution Plan	U-Link	University Link project
PEPD	Planning, Environment and Project Development	UDS	University District Station
PMOC	Project Management Oversight Consultant	USFWS	U.S. Fish and Wildlife Service
PSST	Pine Street Stub Tunnel	UW	University Of Washington
QA	Quality Assurance	UST	Underground Storage Tank
QC	Quality Control	UWS	University of Washington Station
QTR	Quarter	VE	Value Engineering
RE	Resident Engineer	VECP	Value Engineering Cost Proposal
RFC	Request for Change	WBS	Work Breakdown Structure
RFD	Request for Deviation	WDFW	Washington Department of Fish and Wildlife
RFI	Request for Information	WSDOT	Washington Department of Transportation
RFP	Request for Proposal		
RFQ	Request for Qualifications		
RIR	Recordable Injury Rates		
RMP	Risk Management Plan		
ROD	Record of Decision		
ROW	Right of Way		
SB	Southbound		
SCADA	Supervisory Central and Data Acquisition		
SCC	Standard Cost Categories		
SCL	Seattle City Light		
SDEIS	Supplemental Draft Environmental Impact Statement		
SEPA	State Environmental Policy Act		
SIP	Street Improvement Permitting		
SPI	Schedule Performance Index		
SR	State Route		
ST	Sound Transit		
START	Seattle Tunnel and Rail Team		
SWI	Stacy and Witbeck, Inc.		
TBM	Tunnel Boring Machine		
TCE	Temporary Construction Easement		
TE	Traction Electrification		
TFK	Traylor Frontier Kemper Joint Venture		
TOD	Transit Oriented Development		
TVM	Ticket Vending Machine		