

Progress Report

Link Light Rail Program



Hilltop Tacoma Link Extension Ground Breaking

November | 2018



Prepared by Project Control & VE | Design, Engineering & Construction Management

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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.

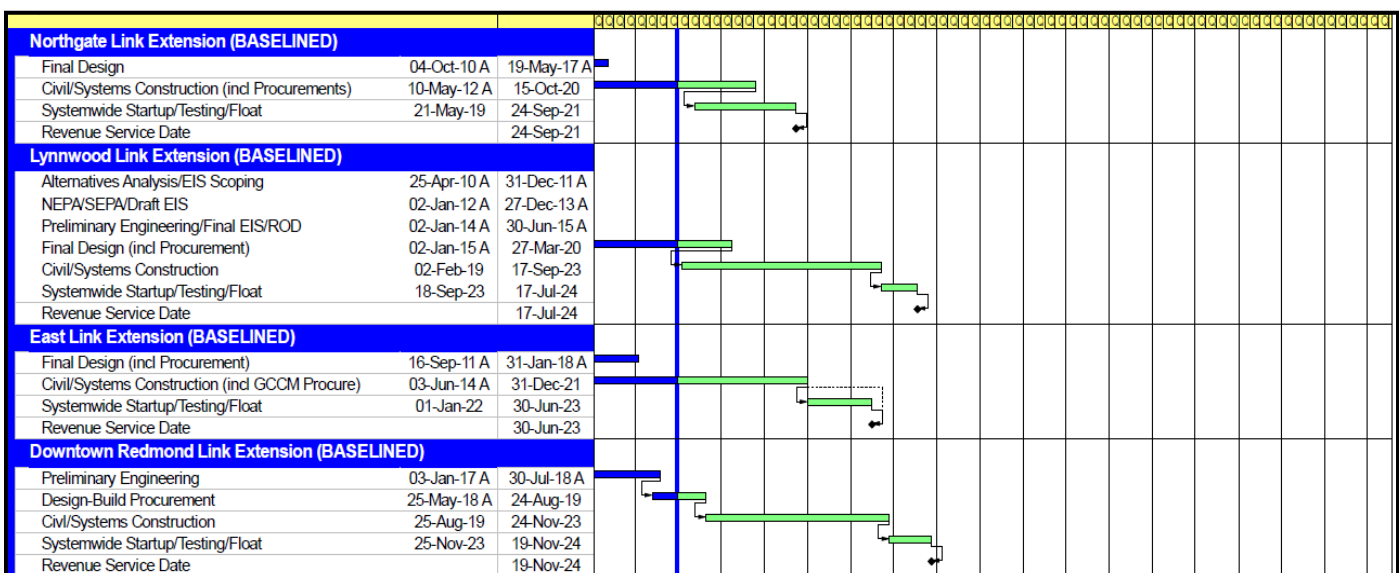
Program Budget

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	\$1,517.8	\$1,508.3	\$36.2	\$1,554.0	\$202.0
Northgate Link Extension	\$1,899.8	\$1,641.5	\$1,303.8	\$205.4	\$1,846.9	\$52.9
Lynnwood Link Extension	\$2,771.6	\$345.0	\$290.6	\$2,426.6	\$2,771.6	\$0
East Link Extension	\$3,677.2	\$3,031.1	\$1,619.9	\$646.0	\$3,677.1	\$0
Downtown Redmond Link Ext.	\$1,530.0	\$32.6	\$24.5	\$145.4	\$1,530.0	\$0
West Seattle and Ballard Link Ext.	\$285.9	\$30.8	\$21.9	\$255.1	\$285.9	\$0
South 200th Link Extension	\$383.2	\$331.9	\$328.6	\$0.8	\$332.6	\$50.6
Federal Way Link Extension	\$2,451.5	\$105.3	\$83.7	\$2,346.2	\$2,451.5	\$0
Hilltop Tacoma Link Extension	\$217.3	\$181.7	\$38.1	\$35.6	\$217.3	\$0
Tacoma Dome Link Extension	\$125.7	\$13.3	\$6.9	\$112.4	\$125.7	\$0
Link O & M Facility: East	\$449.2	\$356.8	\$179.0	\$92.4	\$449.2	\$0
LRV Fleet Expansion	\$740.7	\$655.4	\$87.0	\$85.3	\$740.7	\$0
Total Link	\$16,288.2	\$8,243.4	\$5,492.3	\$6,387.3	\$15,982.7	\$305.5

Program Schedule

Schedules for active projects are summarized below.

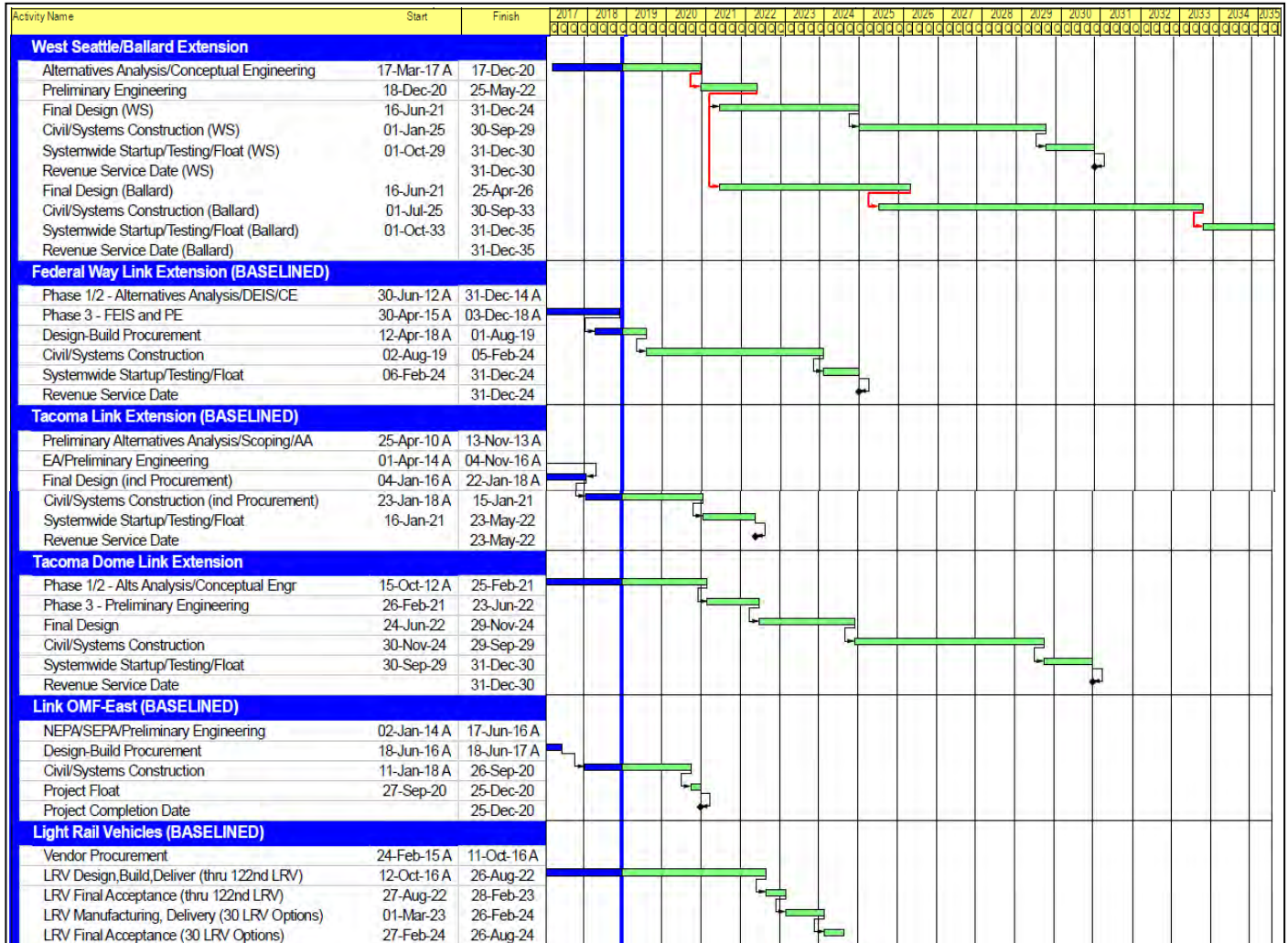


Link Light Rail Program Overview



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. 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 determination that all requirements are now met.
- Commercial issues with all prime civil contractors (with the exception of Capitol Hill Station Contractor) has been negotiated as the project proceeds through the close out process.
- 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 \$280K 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 about \$991M 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	\$83.23	\$82.77	\$88.10	\$25.45
Preliminary Engineering	\$24.39	\$24.26	\$24.26	\$24.26	\$24.26	\$0.00
Final Design	\$77.94	\$90.31	\$87.96	\$86.71	\$89.17	\$1.14
Construction Services	\$68.53	\$94.81	\$86.88	\$86.58	\$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	\$998.23	\$991.09	\$1,021.84	\$136.34
Vehicles	\$103.91	\$103.91	\$99.20	\$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	\$1,517.85	\$1,508.35	\$1,554.00	\$202.00
Finance Cost	\$191.71	\$191.71	\$191.71	\$174.87	\$191.71	\$0.00
Project Total	\$1,947.68	\$1,947.72	\$1,709.56	\$1,683.22	\$1,745.71	\$202.00

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 \$979M 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	\$456.10	\$456.03	\$461.58	(\$11.12)
20 Stations	\$366.33	\$350.75	\$345.64	\$343.09	\$353.10	(\$2.34)
30 Support Facilities: Yards, Shops	\$7.01	\$24.83	\$23.55	\$23.46	\$24.80	\$0.03
40 Sitework & Special Conditions	\$59.03	\$67.39	\$57.37	\$54.92	\$56.77	\$10.62
50 Systems	\$69.63	\$116.42	\$102.17	\$101.82	\$102.40	\$14.02
Construction Subtotal (10 - 50)	\$1,128.82	\$1,009.85	\$984.82	\$979.32	\$998.64	\$11.21
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	\$306.38	\$302.73	\$317.95	\$28.63
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	\$1,517.50	\$1,508.35	\$1,554.00	\$202.00
100 Finance Cost	\$191.71	\$191.71	\$191.71	\$174.87	\$191.71	\$0.00
Project Total	\$1,947.68	\$1,947.72	\$1,709.21	\$1,683.22	\$1,745.71	\$202.00

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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 resolve items needed for contract closeout.
- **U District Station/UW Campus (N140):** In the north area of the station, Hoffman completed underpinning the foundation of Neptune Theatre. Crews in the central area, continued removal of temporary shoring platform to lid level on east/west sides. In the south area, Hoffman placed concrete in various locations throughout and commenced formwork and rebar for the escalator wall.
- **Roosevelt Station (N150):** At the north entry, Hoffman commenced exterior wall framing, continued steel erection of clerestory columns, and completed metal roof decking. In the central area Hoffman completed installation of sprinklers and ceiling grid and continued installation of bottom section of escalator 2. On basement levels 2 and 3 in the south area, crews continued various electrical installations and set attenuators for emergency fans.
- **Northgate Station (N160): Guideway Substructure/Superstructure:** Continued installation of systems conduit and emergency walkway frames. **Station:** Continued night shift steel erection, setting station columns, beams and cross bracing steel for roof structure. **Garage:** Added safety/security provisions on all levels. Garage was opened to the public on November 19.
- **Trackwork (N180):** Stacy Witbeck continues direct fixation track installation in the U District and Roosevelt Stations. Columbia Pre Cast continues casting 16Hz slabs; approximately 85% complete.
- **Environmental:** Clean ESMS Audit of N160 in early November. Continuing environmental compliance weekly inspections.

Closely Monitored Issues

- Pushing to turn over the north end of the Northgate guideway to trackwork contractors in December; additional manpower is available now that the parking garage is open.
- The additional stair at the U District Station from the intermediate landing to the platform level is at 60% design development.

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 \$1,846.9M, which is \$52.9M below the current project budget, which is unchanged since the last period. This period approximately \$28.3M was incurred, bringing the total project expenditures from \$1.26B to \$1.29B. Project commitments are at \$1.64B 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	\$65.7	\$65.7	\$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	\$114.5	\$134.7	\$(2.6)
Construction Services	\$118.3	\$118.3	\$103.1	\$75.0	\$110.4	\$7.9
3rd Party Agreements	\$11.8	\$11.8	\$9.8	\$6.7	\$12.4	\$(0.6)
Construction	\$1,343.0	\$1,343.0	\$1,226.7	\$926.3	\$1,332.9	\$10.2
ROW	\$112.3	\$112.3	\$100.6	\$100.5	\$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	\$1,641.5	\$1,303.8	\$1,846.9	\$52.9

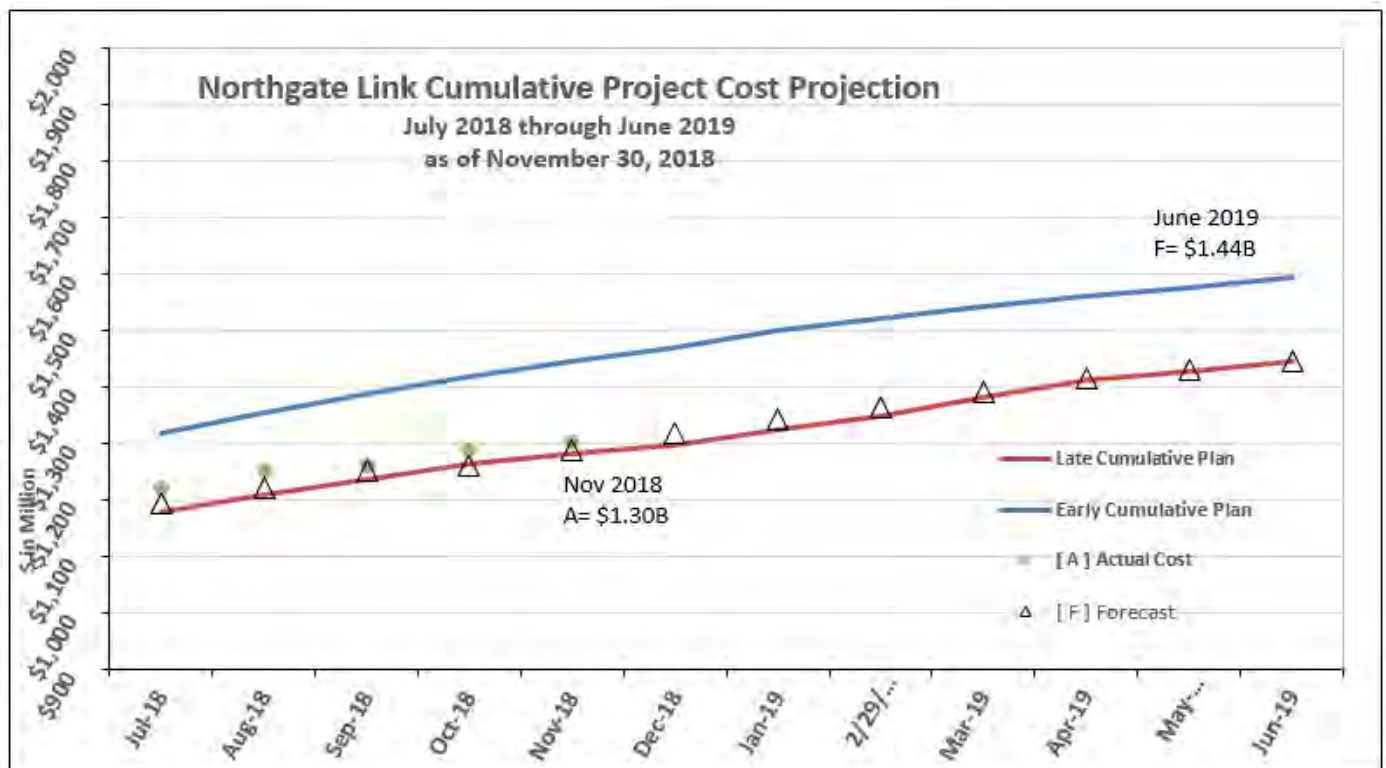
Cost Summary by SCC

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	\$549.8	\$514.1	\$478.4	\$532.4	\$17.4
20 Stations	\$376.1	\$424.1	\$420.9	\$269.8	\$447.2	\$(23.1)
30 Support Facilities: Yard, Shop	\$5.3	\$5.3	\$6.4	\$6.1	\$6.4	\$(1.2)
40 Sitework & Special Conditions	\$140.8	\$224.2	\$167.5	\$140.1	\$202.0	\$22.2
50 Systems	\$110.9	\$96.7	\$107.4	\$23.3	\$119.5	\$(22.8)
Construction Subtotal (10 - 50)	\$1,228.7	\$1,300.1	\$1,216.3	\$917.6	\$1,307.5	\$(7.5)
60 Row, Land, Existing Improvements	\$119.9	\$110.9	\$100.6	\$100.5	\$105.5	\$5.4
80 Professional Services	\$420.7	\$431.6	\$324.6	\$285.6	\$428.4	\$3.2
90 Contingency	\$130.4	\$57.2	\$0.0	\$0.0	\$5.4	\$51.8
Total (10 - 90)	\$1,899.8	\$1,899.8	\$1,641.5	\$1,303.8	\$1,846.9	\$52.9

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 \$15.8M included \$13.9M for the ongoing major construction contracts including the N140, N150, and N160 Station Finishes contracts, and the N180 Trackwork contract, and other miscellaneous construction; \$1.2M was incurred for civil and systems final design and design support during construction; and \$0.5M 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 \$1.30B of which about \$926M (71%) is attributed to the Construction Phase. The project cost is currently predicted to increase to approximately \$1.4B 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 risk register is updated quarterly. The following remain the top project wide risks:

- Multiple contract interfaces.
- Potential shortage of skilled labor and O&M support during startup and integration testing.
- Duration uncertainties for system installation, integration, and testing.
- Coordination with third parties (City of Seattle, WSDOT, UW etc.).
- Obsolescence of interfacing systems.

Contingency Management

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

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 at the end of 3rd QTR 2018. This period, AC decreased by \$4.8M due to the execution of change orders on the N150 and N160 Station contracts, the N180 Trackwork contract, and the Civil Design Services During Construction contract. The UAC was unchanged this period and the 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%	\$138.9	23.7%
Unallocated Contingency	\$98.3	5.2%	\$35.0	6.0%
Total:	\$396.2	20.9%	\$173.9	29.6%

Contingency by Type

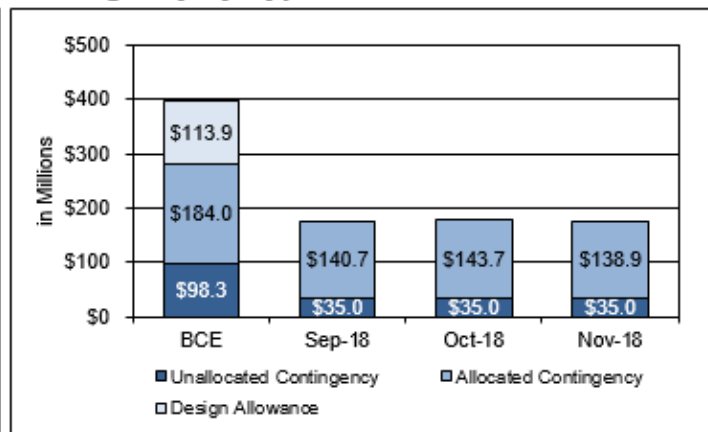
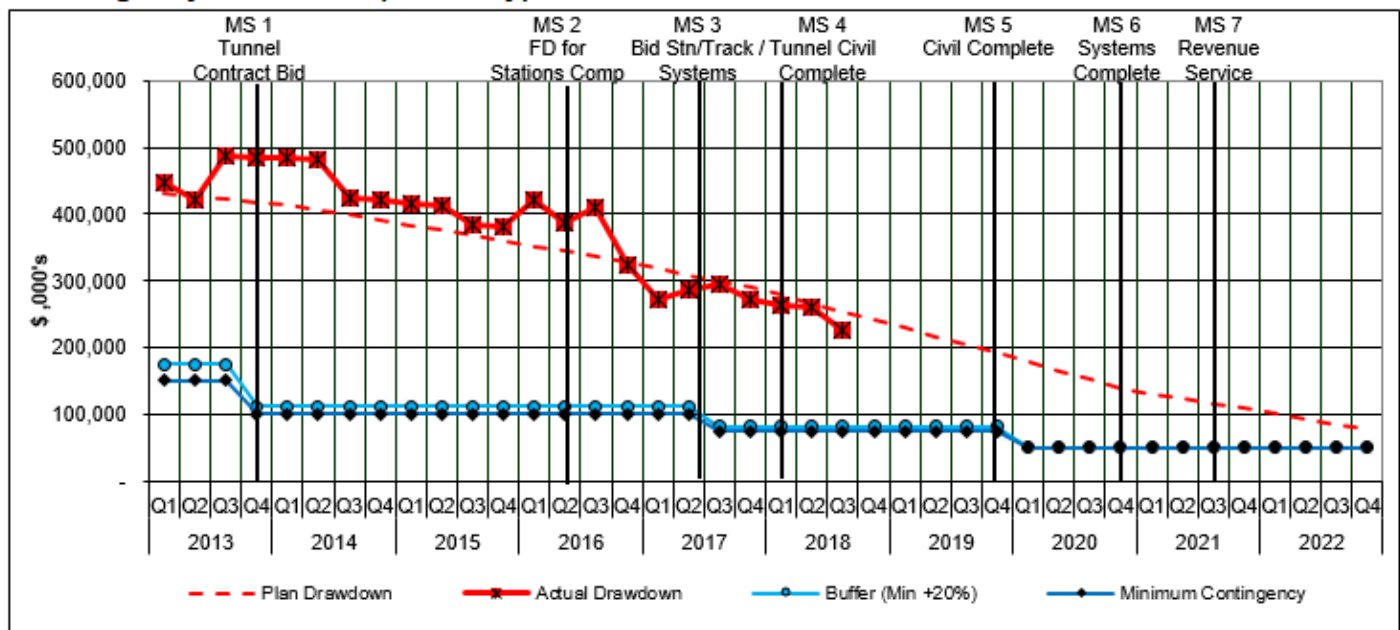


Table figures are shown in millions.

Contingency Drawdown (Quarterly)



Link Light Rail

Northgate Link Extension

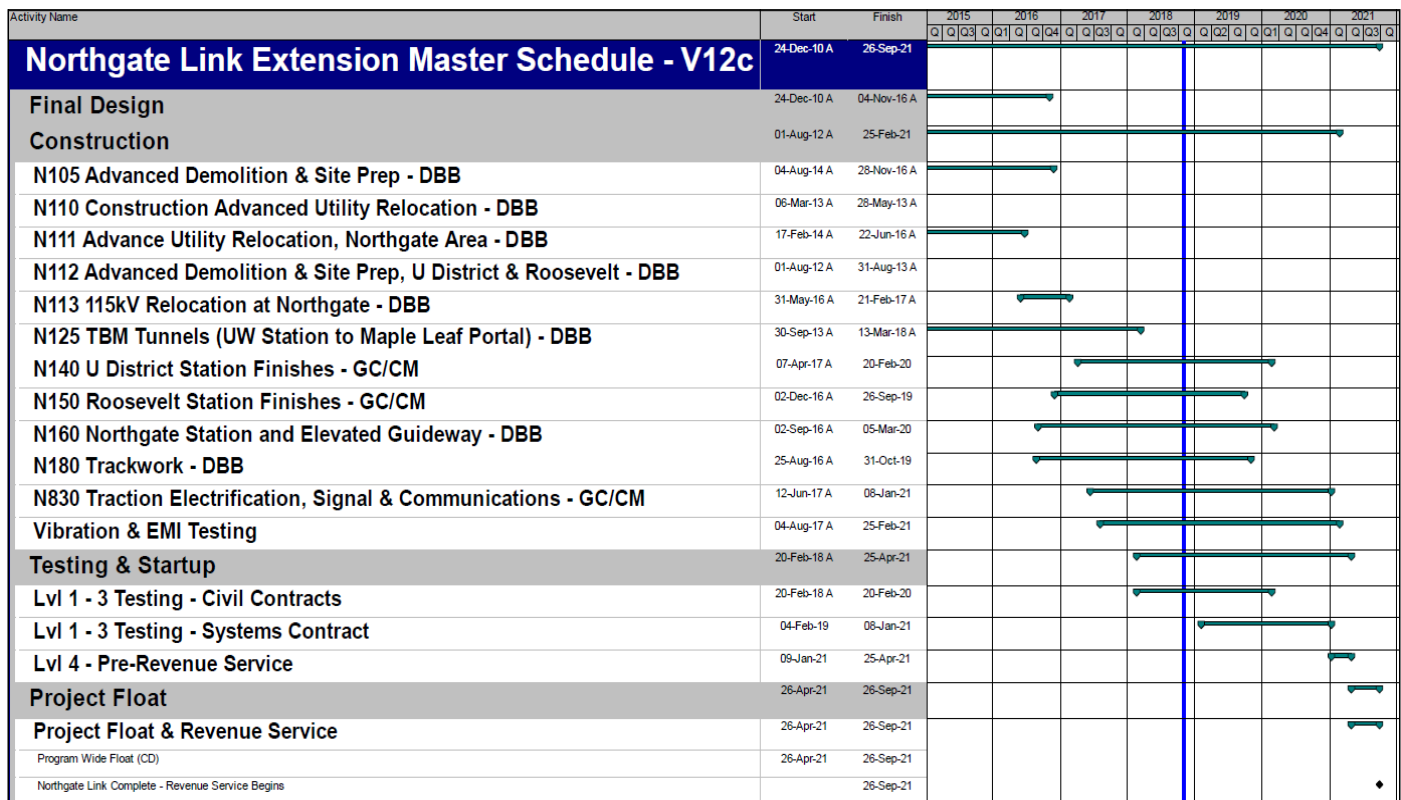


Project Schedule

As of November 2018, all Northgate Link civil contracts are under construction and the calculated physical percent complete for all major construction contracts is approximately 72.8%.

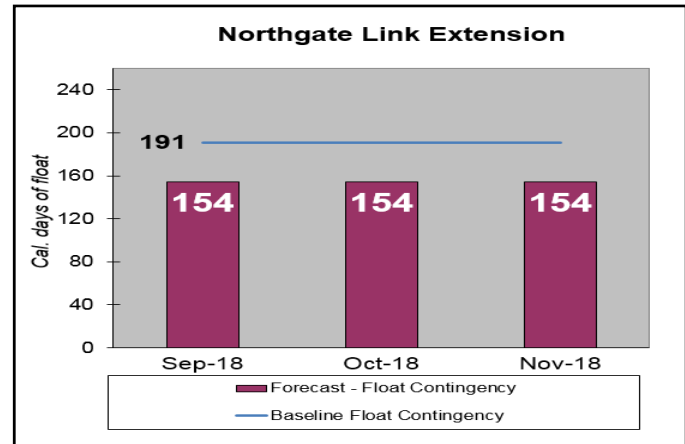
The Northgate Link Extension remains on schedule for the period. Civil construction is still forecast to complete in 3rd QTR 2020. Systems construction is forecast to complete in late 4th QTR 2020.

- The N125 Tunneling Contract status is unchanged with close-out efforts continuing.
- The N140 U District Station contractor, Hoffman Construction, is continuing with headhouse structural work, Systems Rooms finishes, and EMP rough-in throughout the lower levels. Ventilation and Fire Damper ductwork is underway.
- At Roosevelt Station (RVS), N150, headhouse CMU and systems room finishes continue. Ventilation and Damper installation is underway as well as escalator installations. Utility installation on 66th Street is ongoing. Below grade systems access has been achieved.
- The N160 contractor, Absher Construction, along with ST completed and opened the Parking Garage to the Public on Nov. 19th. On the guideway, Fire Suppression piping and Acoustic Panels are being installed. Platform canopy and station structural work continues, as does stair installation.
- The N180 Trackwork contractor, Stacy & Witbeck, is preparing to install floating slabs & trackwork in the UDS Station. Rail installation continues in the tunnels between UDS and RVS. At MLP, the forming and pouring for the stair tower walls is ongoing. Track slab pours at MLP are ongoing. Columbia precast is nearing completion of the 16Hz slabs.
- The N830/E750 Systems Contractor, Mass Electric (MEC), is continuing engineering and procurement work for signals and communications and OCS. MEC successfully completed the Northgate Parking Garage systems installation, and has received access to the below grade portion of the Roosevelt Station.
- Revenue Service date for Northgate Link Extension is scheduled in September 2021.



Project Float

The Northgate Link Project currently retains 154 days of unallocated project float. The station, trackwork, and systems contracts do not have Sound Transit Controlled Float. Interface float exists for interim milestones only and is Sound Transit managed, not contractual.



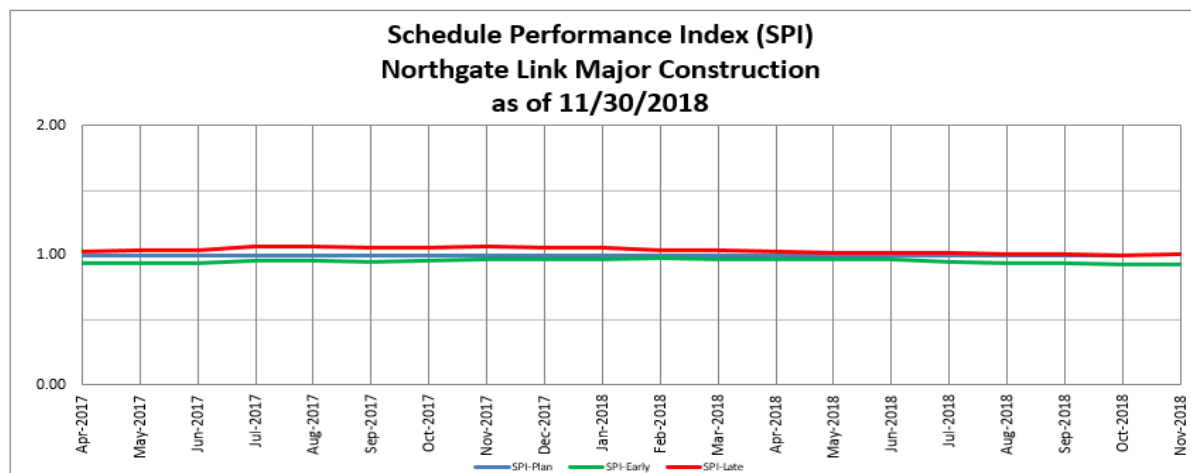
Critical Path Analysis

The critical path for the Northgate Link Extension continues to run through the N830 Systems installations, then into the Testing & Commissioning proceeding the Pre-Revenue Service period. The handover of the track from N180 to N830 remains a key interface, but has gained additional interface float due to longer than expected systems procurements.

Activity ID	Activity Name	Start	Finish	2019												2020												2021											
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	F	Mar	Apr	May	Jun	Jul	Aug	Sep
Northgate Link Extension Master Schedule - V12c		20-Feb-18 A	26-Sep-21																																				
Testing & Startup		20-Feb-18 A	25-Apr-21																																				
Lvl 1 - 3 Testing - Civil Contracts		20-Feb-18 A	20-Feb-20																																				
Lvl 1 - 3 Testing - Systems Contract		04-Feb-19	08-Jan-21																																				
Lvl 4 - Pre-Revenue Service		09-Jan-21	25-Apr-21																																				
Project Float		26-Apr-21	26-Sep-21																																				
Project Float & Revenue Service		26-Apr-21	26-Sep-21																																				
NGLSUM9010 Northgate Link Project Float (CD)		26-Apr-21	26-Sep-21																																				
NGLPWF1000 Program Wide Float (CD)		26-Apr-21	26-Sep-21																																				
NGLMS9000 Northgate Link Complete - Revenue Service Begins		26-Sep-21	26-Sep-21																																				
N830/E750 - Systems		12-Jun-17 A	13-Jan-22																																				
General		12-Jun-17 A	13-Jan-22																																				
N830 Project		12-Jun-17 A	14-Feb-19																																				
N830 Engineering		18-Sep-17 A	26-Feb-18 A																																				
N830 Construction		15-Aug-18 A	14-Feb-19																																				
N830 Indirects		12-Jun-17 A	10-Jul-17 A																																				
N830 Change Orders / Provisional Sums		07-Sep-17 A	23-Jan-18 A																																				

Schedule Performance Index

The early Schedule Performance Index (SPI) for the project is at 0.93 for this period. The late SPI is at 1.00 showing that in general, performance is satisfactory. The early and late numbers have been trending within a range of 0.04 above or below the current period numbers for several months.



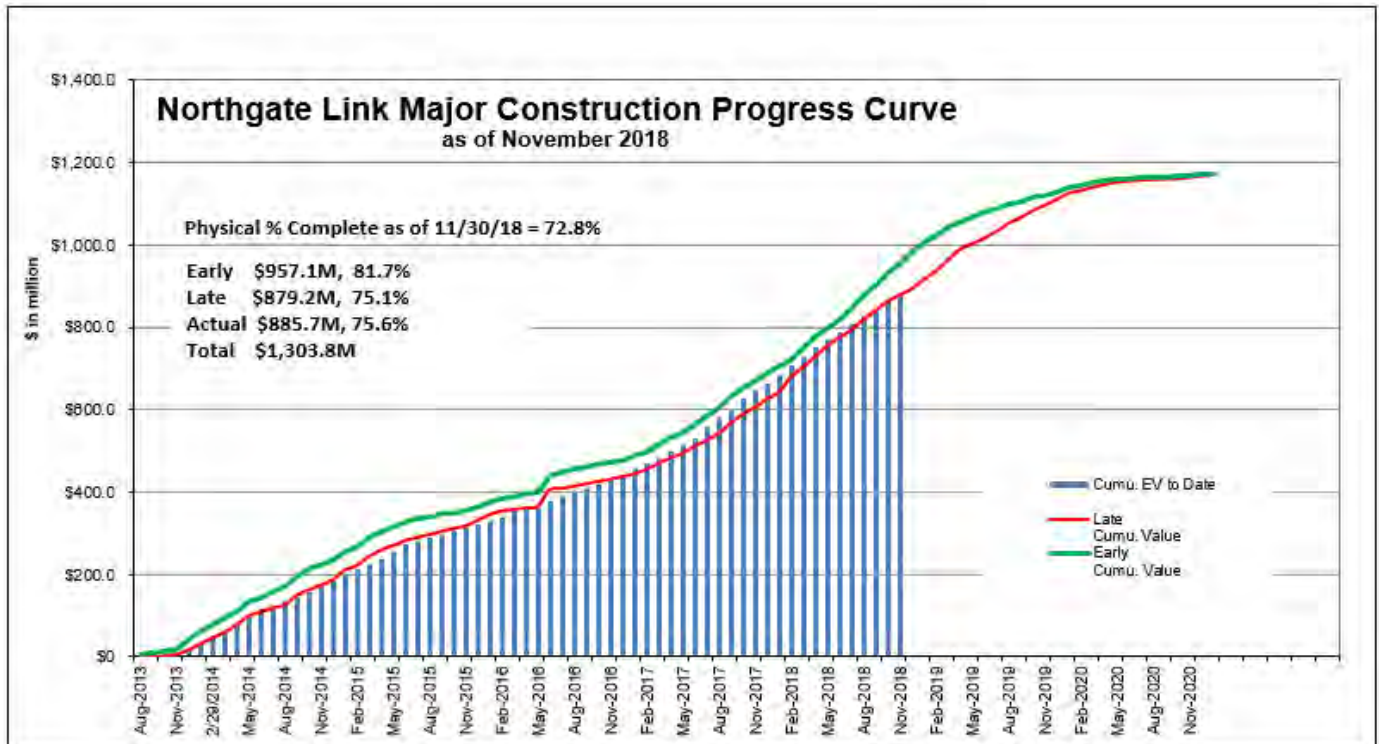
Link Light Rail

Northgate Link Extension



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 is completed and opened to the public in November. Systems procurement continues for signals and communications. 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 72.8% as compared to approximately 70% of contractual duration expended.



Community Outreach

University District Station (N140)

- Co-chaired a booth at the U District Farmers Market.

Roosevelt Station (N150)

- Attended the Transportation Choices forum on Transit Talks. A panel was set up of different representatives from various agencies including Sound Transit. There were approximately 66 people in attendance from the Roosevelt Neighborhood.

Community Outreach continued...

Northgate Station (N160)

- Communicated message to community blogs/calendars about upcoming Northgate Park and Ride changes.
- Co-tabled University District Street Fair.
- Instituted Phase 1 of signage Plan for Northgate Park and Ride Facilities.
- Coordinated three rounds of street teaming and designated Northgate Park and Ride facilities.
- Distributed Project Update.

Sound Transit Board Actions

Board Action	Description	Date
	None to report.	

Construction Safety

Data/ Measure	November 2018	Year to Date	Project to Date
Recordable Injury/Illness Cases	0	23	102
Days Away From Work Cases	0	0	6
Total Days Away From Work	0	0	397
First Aid Cases	4	50	147
Reported Near Mishaps	2	34	118
Average Number of Employees on Worksite	463	-	-
Total # of Hours (GC & Subs)	79,222	1,050,330	3,958,463
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	0.00	4.38	5.15
Lost Time Injury (LTI) Rate	0.00	0.00	0.30
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.

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.



N140—South Circulation Tube Assembly Installation

Contract N140—U District Station Finishes

Current Progress

The N140 Contractor, Hoffman Construction, is continuing structural work below and above grade as well as MEP work below grade.

- Commenced assembly of air handler units BL1.
- Continued north secant pile wall excavation.
- Continued removal of Peri shoring platform to lid level, GL5 to GL8 east and west sides.
- Commenced installation of south entrance canopy structural steel.
- Commenced installation of CMU walls Platform Level to BL3.
- Completed assembly of escalator enclosure. Erect structural steel.

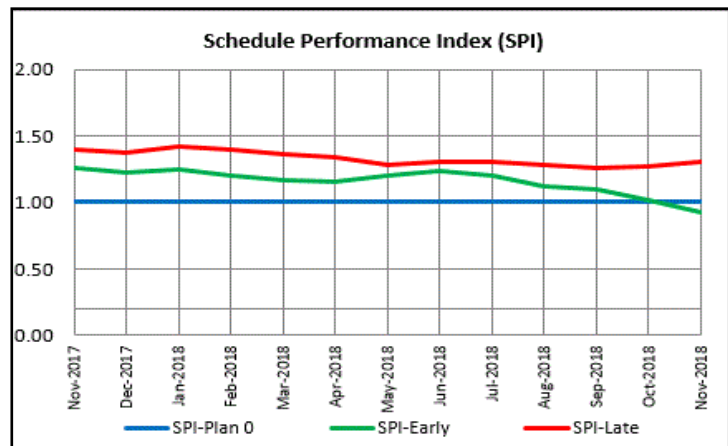
Schedule Summary

The schedule update for November 2018 was returned to the contractor as “Revise and Resubmit” due to the inclusion of a time impact analysis for future work that has not yet been negotiated or agreed upon. The October update currently stands as the last accepted update with no changes in the milestones at this time.

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	759	330	10-Feb-17 A	20-Feb-20													
MILESTONES	0	0	20-Feb-20	20-Feb-20													
Milestone 4 - Substantial Completion	0	0		20-Feb-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	759	330	10-Feb-17 A	20-Feb-20													
Structure	685	256	10-Feb-17 A	04-Nov-19													
EXTERIOR SHELL / SKIN	131	131	18-Dec-18	21-Jun-19													
INTERIORS	372	300	23-Jul-18 A	09-Jan-20													
ELEVATORS	185	185	26-Feb-19	15-Nov-19													
ESCALATORS	353	257	18-Jun-18 A	05-Nov-19													
STAIRS	330	208	10-May-18 A	27-Aug-19													
SITEWORK	342	219	18-Jun-18 A	21-Oct-19													
START-UP & COMMISSIONING	206	206	30-Apr-19	20-Feb-20													

Schedule Performance Index

This period, the SPI early is at 0.93 and the SPI late is 1.31. The early index indicates that the contractor is performing slightly behind of the plan when compared to the baseline schedule and cash flow and is expected to trend the same way next period.



Link Light Rail

Northgate Link Extension

Next Period's Activities

- Complete installation of wall formwork and rebar for north headhouse and elevator 2 walls.
- Complete installation of wall mechanical, electrical, and plumbing (MEP) rough in for north headhouse GL10 / GLH.3.
- Commence wall formwork, rebar and MEP rough in for GLL.1 and GL7.3.
- Continue north secant pile wall excavation.
- Commence formwork and MEP rough in for north entry.
- Continue assembly of air handler units BL1.
- Commence fire stopping caulking of CMU walls basement level 2 to basement level 1.
- Complete removal of Peri Shoring GL5 to GL8, east and west sides.
- Remove platform level GL1.6 to GL4 formwork.
- Install track slab curb formwork and rebar GL1.6 to GL4 and place concrete.

Closely Monitored Issues

- The initial design concept for the additional stairs from the street level to the platform level was completed and distributed to the Contractor and Sound Transit for review and comment this month. The design team is now in the Design Development (DD) phase and the 60% DD submittal this month.
- The Contractor provided notification regarding cost and time impacts due to additional stem walls and related work at the north end. The contractor is working on a time impact analysis and possible mitigation measures.

Cost Summary

Present Financial Status	Amount
N140 Contractor—Hoffman Construction	
Original Contract Value	\$ 159,836,688
Change Order Value	\$ 1,001,306
Current Contract Value	\$ 160,837,994
Total Actual Cost (Incurred to Date)	\$ 74,972,345
Financial Percent Complete	46.6%
Physical Percent Complete	42.0%
Authorized Contingency	\$ 7,991,834
Contingency Drawdown	\$ 1,001,306
Contingency Index	3.4



UDS – South Circulation Tube Assembly

Contract N150—Roosevelt Station Finishes

Current Progress

Hoffman Construction (HCC) is continuing structural work at the North and South Headhouses. Concrete Masonry Unit (CMU) block installation at the Headhouse entrances continues. Mechanical, Electrical, and Plumbing (MEP) continues throughout the station below grade. Major accomplishments this period include:

- Achieved Milestone 2—Systems Room Access Below Grade on Nov. 1st.
- Continued north basement level 3 electrical work.
- Commenced drywall, mud and taping at south basement level 2 rooms.
- Completed fire alarm rough-in at north platform.

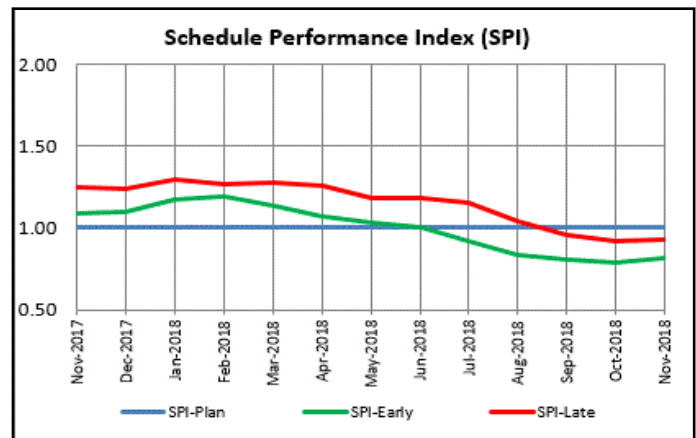
Schedule Summary

The N150 November schedule update now forecasts an nine day late Substantial Completion date. The critical path is currently driven by the North Headhouse Finishes and NE 66th St Restoration. The Civil/Systems interfaces continue to retain adequate float.

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	715	209	02-Dec-16 A	26-Sep-19																
MILESTONES	0	0	26-Sep-19	26-Sep-19																
MILESTONE 3 - SUBSTANTIAL COMPLETION OF ALL WOR	0	0		26-Sep-19*															M	
PRECONSTRUCTION	0	0	02-Dec-16 A	02-Dec-16 A																
ISSUE CONSTRUCTION NTP	0	0		02-Dec-16 A																
CONSTRUCTION	667	209	13-Feb-17 A	26-Sep-19																
MOBILIZATION	562	75	13-Feb-17 A	29-Apr-19																
STRUCTURE	582	124	13-Feb-17 A	28-May-19																
INTERIORS	342	166	23-Mar-18 A	26-Jul-19																
HEADHOUSE	380	202	21-Mar-18 A	17-Sep-19																
BUS SHELTER	30	30	11-Feb-19	22-Mar-19																
BIKE CAGE	13	13	08-Mar-19	26-Mar-19																
ELEVATORS	154	154	01-Nov-18 A	11-Jul-19																
ESCALATORS	130	130	03-Dec-18	05-Jun-19																
STAIRS	128	67	04-Sep-18 A	07-Mar-19																
CP-31	276	55	19-Feb-18 A	20-Mar-19																
CONSTRUCTION ACCESS INFILL	68	68	30-Apr-19	05-Aug-19																
START-UP & COMMISSIONING	188	188	17-Dec-18	11-Sep-19																
SITE RESTORATION	332	209	07-Jun-18 A	26-Sep-19																
ARTWORK	229	99	15-Aug-18 A	10-Jul-19																
CLOSEOUT	92	92	15-May-19	24-Sep-19																
N830 TRACTION ELECTRIFICATION, SIGNALS, C	31	11	01-Nov-18 A	17-Dec-18																

Schedule Performance Index

This period, the SPI early is at 0.80 and the SPI late is at 0.90. The early index suggests that the contractor is performing slightly behind plan when compared to the baseline schedule as it was last period. However, with the delivery and installation of the escalators, elevators and tile work on-site, the SPI is anticipated that the SPI will trend closer 1.0 next month.



Link Light Rail

Northgate Link Extension

Next Period's Activities

- Continue installation of ceiling at south platform.
- Complete fire alarm rough-in at south platform.
- Complete hanging electrical panels and pulling wire in conduits at south basement level 3.
- Complete setting attenuator and transitions for emergency fan 4 at south basement level 3.
- Complete dampers for emergency fan 4 at south basement level 3.
- Continue mechanical, electrical, and plumbing (MEP) overhead rough-in and hanging electrical panels at north and south basement levels 1 and 2.
- Complete setting attenuator and transitions for emergency fan 5 at south basement level 2.
- Complete setting dampers at south basement level 2.
- Continue drywall, mud and taping at south basement level 2 rooms.
- Continue installation of CMU at north entrance.
- Complete utility work on 66th Street.

Closely Monitored Issues

- Sound Transit Board is scheduled for December to replenish the N150 contract contingency by \$7M.
- Design has made major progress in responding to Requests for Information (RFIs) and urgent submittals.

Cost Summary

Present Financial Status	Amount
N150 Contractor - Hoffman Construction	
Original Contract Value	\$ 152,291,184
Change Order Value	\$ 4,621,655
Current Contract Value	\$ 156,912,839
Total Actual Cost (Incurred to Date)	\$ 106,892,528
Financial Percent Complete	68.1%
Physical Percent Complete	60.1%
Authorized Contingency	\$ 7,614,559
Contingency Drawdown	\$ 4,621,655
Contingency Index	1.0



Roosevelt Station — View looking Northwest

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

Current Progress

The N160 Contractor, Absher Construction, has completed the Parking Garage with a Nov. 19th opening. Guideway finishes are continue, and work on the station continues to progress. Accomplishments to date:

- Continuing installation of systems conduit and grounding cable (Elcon). Installing 4" diameter flex conduits across expansion joint locations.
- Continuing night shift steel erection and welding over 103rd.
- Placed PERI shoring between the north wall and C1 mezzanine cap for support of upper escalator beams.
- Began clearing site of FC-7. Removed asphalt, checked two locations for contaminated soils.
- Installed drain piping from FC-6 thru adjacent gabion wall baskets.
- Continue Garage Punchlist and requested Safety/Security improvements.

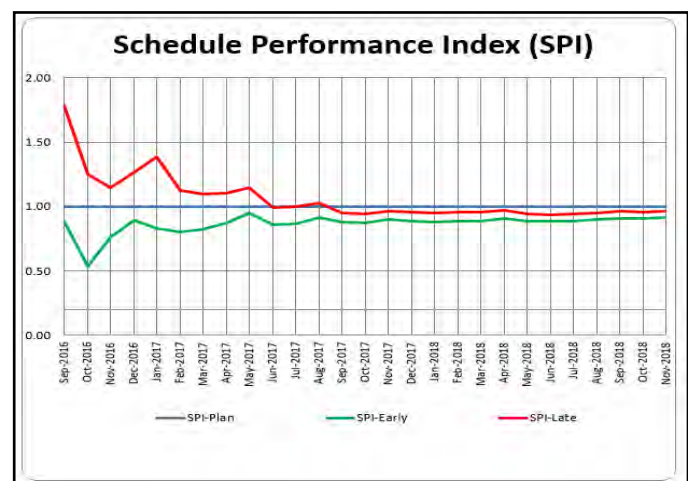
Schedule Summary

The project schedule for November maintains a 5-Mar-20 substantial completion date, four day late. Milestones 1, 5, and 8 have negative float, but are not impacting other contracts. The critical path for the project remains the station structure & station finishes, in particular the installation of vertical transportation (escalators and stairs).

Activity Name	OD	RD	Start	Finish	2017				2018				2019				2020			
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
N160 - Northgate Station Finishes	892	318	01-Sep-16 A	05-Mar-20																
1.00 - General Requirements	886	0	01-Sep-16 A	05-Mar-20																
1.10 - Project Start-up	0	0	01-Sep-16 A	01-Sep-16 A																
Contract Award/NTP (See Site Access Dates)	0	0	01-Sep-16 A																	
1.20 - Contractual Milestones	0	0	05-Mar-20	05-Mar-20																
Absher Contract Milestones	0	0	05-Mar-20	05-Mar-20																
MS08 - Substantial Completion [Site Access+1201c	0	0		05-Mar-20*																
2.00 - Procurement	778	211	02-Sep-16 A	01-Oct-19																
3.00 - Preparatory Work	861	318	17-Oct-16 A	05-Mar-20																
4.00 - Earthwork & Utilities	801	318	04-Jan-17 A	05-Mar-20																
5.00 - Guideway (inc. Station Unit)	514	15	03-Jan-17 A	21-Dec-18																
6.00 - Station Finishes	443	269	27-Mar-18 A	24-Dec-19																
7.00 - Garage	375	13	27-Jun-17 A	19-Dec-18																
8.00 - At-Grade Restoration	578	277	22-Sep-17 A	07-Jan-20																
9.00 - Transition to Operations	5	5	24-Dec-18	31-Dec-18																
10.00 - Project Close-out	76	76	14-Nov-19	05-Mar-20																

Schedule Performance Index

This period, the SPI early is at 0.91 (unchanged from last month), and the SPI late is at 0.97 (up from 0.96 last month). The early index indicates that the contractor continues performing slightly behind plan when compared to the baseline schedule. The 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:** Continue processing and reviewing of submittals and RFIs. Continue CIP meetings with N830. Conduct Readiness Review meeting for Escalators 2 and 3.
- **Guideway Substructure/Superstructure:** Continue installation of systems conduits, emergency walkway, acoustical panels, fire suppression piping, plinth rebar corrections, and punchlist concrete repairs.
- **Station:** Continue escalator formwork and reinforcing at units 2 and 3. Continue Stair 2 wall and stringer formwork and reinforcing. Continue shift steel erection of Platform over 103rd. Continue installation of beams, joists and decking for lobby roof. Begin Mezzanine level exterior metal studs
- **Parking Garage:** Continue to complete final punchlist corrections. Complete corrective actions to stop areas of water leakage/intrusion from SCL conduits. Activate new light poles along 103rd.
- **Utility & Drainage Work:** Continue MSE retaining walls. Continue underground ducts for TPSS and Signal Facility. Continue FC-7 Installation and backfill.

Closely Monitored Issues

- Schedule slippage continues on elevated structure and station.
- Guideway deck grades and plinth bar locations have been surveyed by N180 – many locations have been corrected, but review of elevations and tolerances is underway.
- Garage opened on Nov. 19 as planned, with a few punchlist items to be completed. Some water leakage has been identified and root cause is being evaluated. Contractor proceeding with action to seal the leaks.

Cost Summary

Present Financial Status	Amount
N160 Contractor - Absher Construction	
Original Contract Value	\$ 174,000,000
Change Order Value	\$ 6,418,831
Current Contract Value	\$ 180,418,831
Total Actual Cost (Incurred to Date)	\$ 131,449,194
Financial Percent Complete	72.9%
Physical Percent Complete	70.2%
Authorized Contingency	\$ 17,400,000
Contingency Drawdown	\$ 6,418,831
Contingency Index	1.9



Installation of acoustical panels along Guideway.

Contract N180 – Trackwork UWS to Northgate Station

Current Progress

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

- Continue construction of DF Plinths in Work Area 3, North and South bound.
- Continue to coordinate with N140 on access to UDS Platform area.
- Construct Track Slabs and Transition Approach slabs at Maple Leaf Portal.
- Erect Level 2 inside forms for MLP Stair Tower.
- Ongoing placement of CDF in 26kV trench.

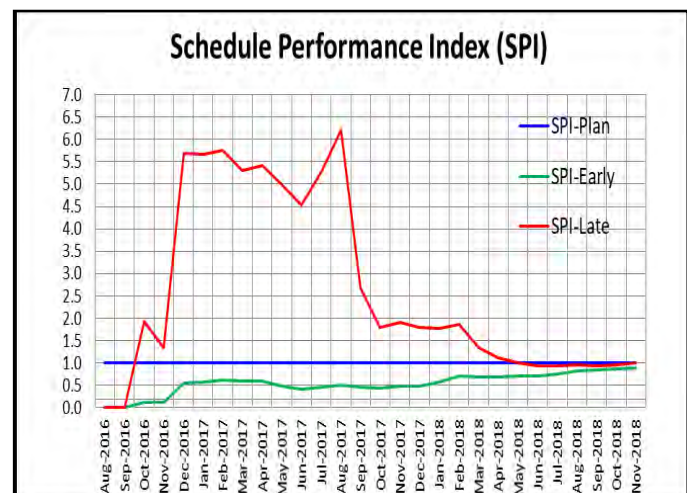
Schedule Summary

The N180 schedule for November continues to forecast an on-time completion of work. The critical path is unchanged and continues to run through the construction of the plinths within the tunnels which is crew driven.

Activity Name	OD	RD	Start	Finish	16	2017				2018				2019			
						Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
N180 - Trackwork	801	230	25-Aug-16 A	31-Oct-19													
Milestones	0	0	31-Oct-19	31-Oct-19													
Milestone 7d - Substantial Completion of Work Area 7, 7.1, 7.2 (10/31/19)	0	0		31-Oct-19*													
Construction	800	229	25-Aug-16 A	30-Oct-19													
Mobilization	691	229	25-Aug-16 A	30-Oct-19													
Submittals	1062	240	25-Aug-16 A	01-Aug-19													
Procurement	588	169	07-Oct-16 A	06-Aug-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)	306	38	15-Dec-17 A	30-Jan-19													
Work Area 3 (N08 - UDS to RVS Tunnels)	213	11	05-Feb-18 A	17-Dec-18													
Work Area 4 (N09 - Roosevelt Station)	178	15	19-Mar-18 A	28-Dec-18													
Work Area 5 (N10 - RVS to MLP Tunnels)	303	133	28-Feb-18 A	14-Jun-19													
Work Area 6 (MLP and At Grade Guideway)	341	171	19-Mar-18 A	08-Aug-19													
Work Area 7 (Elevated Guideway South of NGS)	141	141	03-Dec-18	26-Jun-19													
Work Area 7.1 (N11 - Northgate Station)	77	77	02-Jan-19	19-Apr-19													
Work Area 7.2 (Elevated Guideway North of NGS)	114	114	04-Jan-19	14-Jun-19													

Schedule Performance Index

The contractor's performance has exceeded the late schedule SPI 1.01 and behind the early schedule SPI 0.90. Performance in between the curves is normally what is expected. 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 punchlist activities.
- Work Area 2.2 floating slab installation through UDS Station
- Work Area 3 DF Track Construction in North Bound & South Bound tunnels will be completed.
- Work Area 5 DF Track Construction in North Bound & South Bound tunnels will be started.
- Work Area 5.1 Preparations for relocation/removal of existing temp electrical feeds.
- Work Area 6 Maple Leaf Portal stair tower level 2 walls.
- Work Area 6 Continued track slab construction at Maple Leaf Portal face.
- Work Area 6 acoustical barrier foundation and wall concrete placements.
- Work Area 6 MOW transition slab construction.
- North and South Bound transition approach slabs onto the bridge structure.

Closely Monitored Issues

- The most notable monitored issue going forward appears to be the Direct Fixation track construction in work areas 3 and 5. This is currently driving the critical path of the schedule. There is a lot of work to be completed and due to the logistics of tunnel construction, it is solely dependent on the production rate of the crew as they make their way north toward Maple Leaf Portal. This will be tracked and adjustments will be made in the coming months in order to ensure continued schedule successes. Current productions indicate that work will exceed the critical path as long as rebar installation can keep up with the remaining trades.
- 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	\$ 2,902,143
Current Contract Value	\$ 74,358,093
Total Actual Cost (Incurred to Date)	\$ 53,015,914
Financial Percent Complete	71.3%
Physical Percent Complete	75.7%
Authorized Contingency	\$ 10,718,393
Contingency Drawdown	\$ 2,902,143
Contingency Index	2.63



Maple Leaf Portal View.

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:

- Obtain access to the Roosevelt Station below grade systems rooms. Conduct Readiness Review for an early December work start.
- Confirm MVSS Factory Acceptance Tests for January 2019.
- Continue As-Built drawings for Northgate Station Parking Garage.

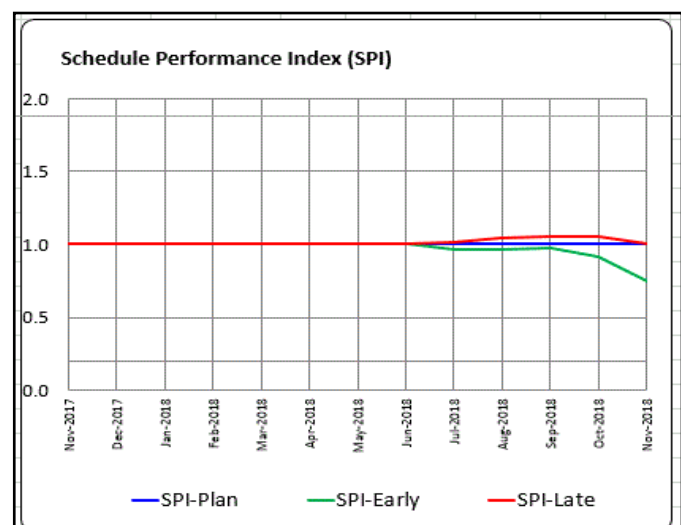
Schedule Summary

The N830 November schedule update forecasts an on-time completion. The interim milestone for Permanent Power at U-District Station is forecast at 14 days late. ST and MEC are working with Seattle City Light to improve this date, which is dependent on SCL service. The interim milestones for early track access also show as late. ST is working with the N180 contractor to determine if the early access opportunity is still a possibility.

Activity Name	OD	RD	Start	Finish	2017	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	880	514	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	748	514	20-Dec-17 A	08-Jan-21																				
N830 Construction	748	514	20-Dec-17 A	08-Jan-21																				
N830 Milestones	0	0	28-Dec-20	28-Dec-20																				
MS#05 Northgate: Substantial completion of Northgate Li	0	0		28-Dec-20*	MS#05 Northgate																			
N830 OCS	466	405	10-Sep-18 A	26-Jul-20																				
N830 Traction Power / Substations Procurement	606	372	20-Dec-17 A	08-Jun-20																				
N830 Signals	422	361	15-Aug-18 A	21-May-20																				
N830 Communications	566	363	10-Feb-18 A	27-May-20																				
N830 Radio	411	290	09-Jul-18 A	03-Apr-20																				
N830 Trunk Fiber	406	345	28-Sep-18 A	29-Apr-20																				
N830 Testing and Commissioning	572	416	07-Sep-18 A	08-Jan-21																				

Schedule Performance Index

The Contractor performed slightly ahead of the late schedule (SPI 1.01) and behind the early schedule (SPI 0.75) in comparison to the baseline work plan.



Link Light Rail

Northgate Link Extension

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.
- Contractor scheduled to start work on the MVSS at the Roosevelt Station in early December.

Closely Monitored Issues

- The Construction Management Consultant and Sound Transit continue to closely monitor the schedule of the procurement packages and to ensure it does not impact upcoming work activities.
- Ongoing coordination for the IDS cutover change from full shutdown to single tracking and the additional risk that is associated with this change associated with the contractor's revised means and methods approach to completing the work.

Cost Summary

Present Financial Status	Amount
N830 Contractor - Mass Electric Construction Co.	
Original Contract Value	\$ 104,660,444
Change Order Value	\$ 577,084
Current Contract Value	\$ 105,237,528
Total Actual Cost (Incurred to Date)	\$ 21,606,266
Financial Percent Complete	20.5%
Percent Complete	27.0%
Authorized Contingency	\$ 5,233,022
Contingency Drawdown	\$ 577,084
Contingency Index	2.4

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



NG Station OCS Pole Foundation Verification, Nov 9, 2018.

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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.

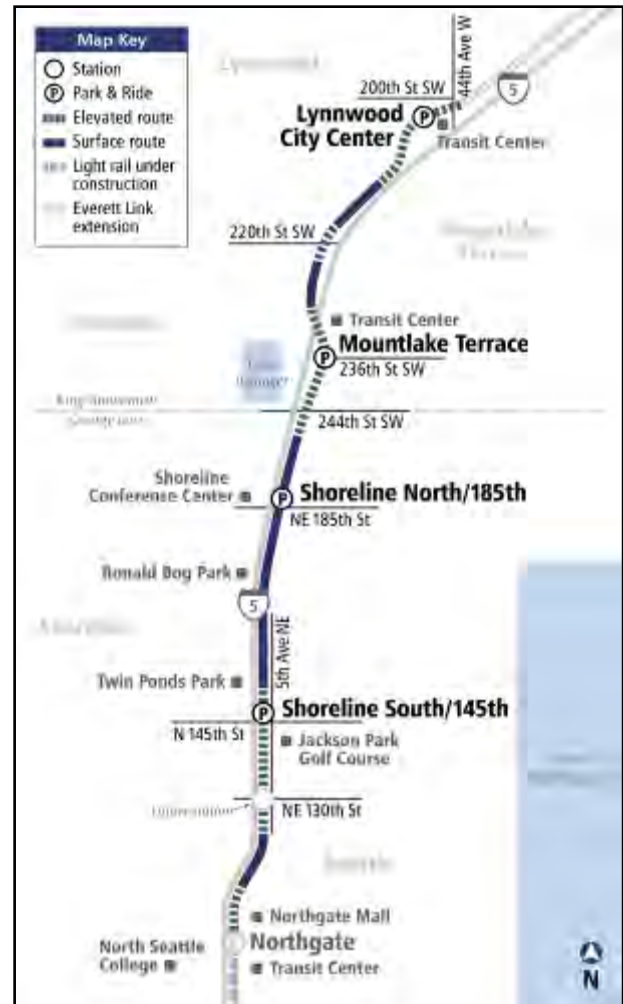
Stations Shoreline South/145th, Shoreline North/185th, Mountlake Terrace, Lynnwood City Center

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 final draft of the WSDOT Project Development Approval for L200 Early Work on Nov. 5th.
- Completed negotiations with SKH for L200 early work scope on Nov. 9th.
- Federal Transit Administration (FTA) transmitted Full Funding Grant Agreement (FFGA) to Congress for 30-day review on Nov. 19th.
- Received L300 Early Work Issued for Construction (IFC) Plans and Specifications from design consultant on Nov. 19th.
- Issued substantial completion notice for the L115 demolition contract with Dickson Company on Nov. 20th.
- Sent a draft concurrence letter for station design enhancements to the City of Mountlake on Nov. 30th.
- Began negotiations with Skanska for L300 early work scope.
- SCL started relocation/raising existing overhead primary distribution 26kV power lines crossing I-5 in Shoreline.
- Snohomish PUD started installation of steel power poles along the Interurban Trail, south of the Lynnwood Transit Center.

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 November 2018, \$12.3 M was incurred, of which \$6.8 M was for advancing civil & systems final design, and \$3.6 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, and early demolition 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	\$27.2	\$27.0	\$98.2	\$0.0
Preliminary Engineering	\$39.1	\$39.1	\$39.1	\$39.1	\$39.1	\$0.0
Final Design	\$164.2	\$164.2	\$111.1	\$88.0	\$164.2	\$0.0
Construction Services	\$128.4	\$128.4	\$20.6	\$15.4	\$128.4	\$0.0
3rd Party Agreements	\$14.6	\$14.6	\$10.1	\$5.6	\$14.6	\$0.0
Construction	\$1,921.4	\$1,921.4	\$15.6	\$5.2	\$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	\$121.3	\$110.3	\$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	\$345.0	\$290.6	\$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	\$791.8	\$0.0
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	\$14.9	\$4.8	\$421.1	\$0.0
50 Systems	\$244.4	\$244.4	\$0.0	\$0.0	\$244.4	\$0.0
Construction Subtotal (10 - 50)	\$1,793.0	\$1,793.0	\$14.9	\$4.8	\$1,793.0	\$0.0
60 Row, Land	\$235.7	\$235.7	\$121.3	\$110.3	\$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	\$208.8	\$175.4	\$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	\$345.0	\$290.6	\$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.

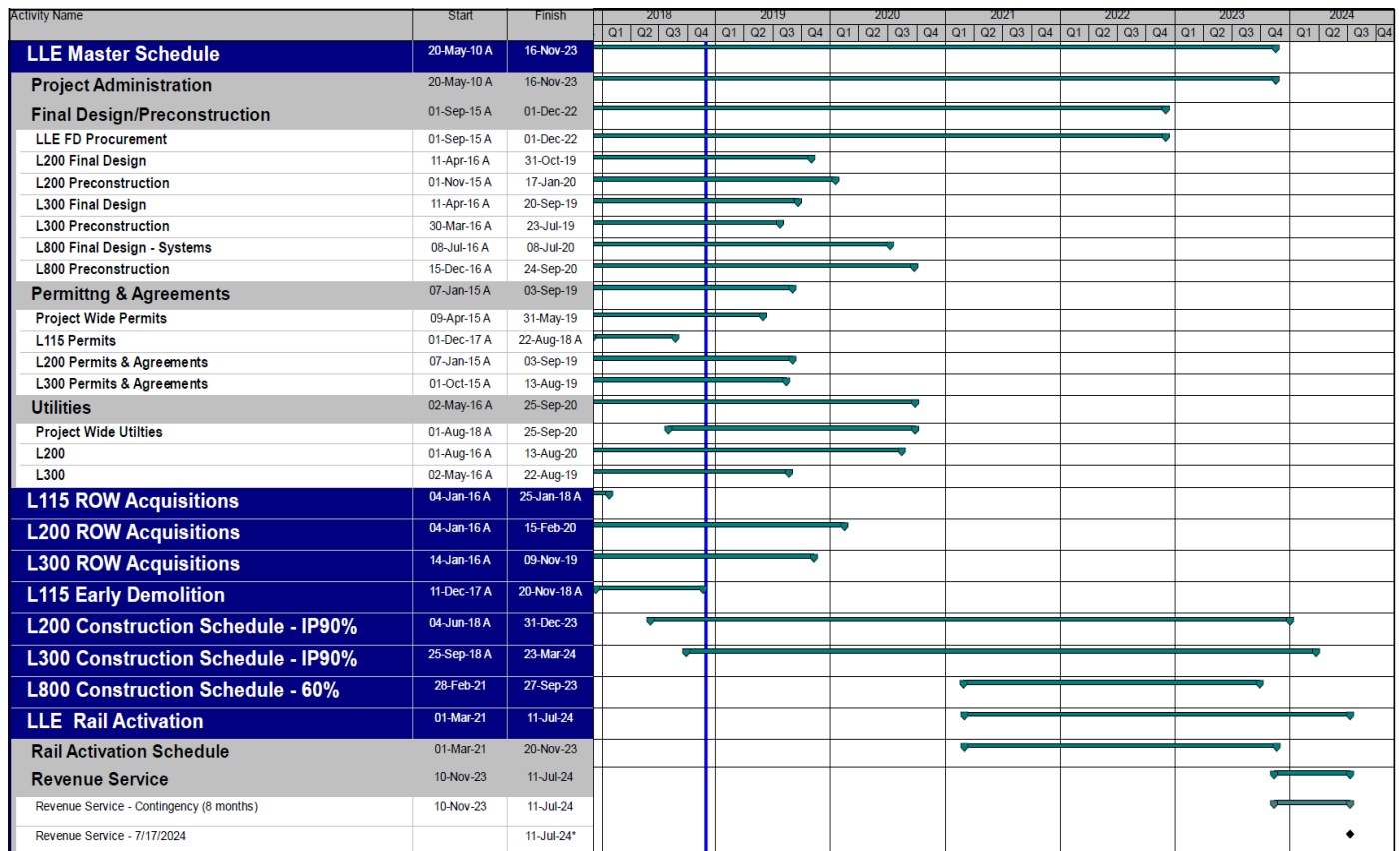
The next quarterly (4th QTR) risk update for the project is scheduled for December 2018. ST includes participation of construction management consultants and construction contractors in its risk management program.

The following are the top project risks:

- FFGA approval and execution schedule.
- 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 team continues to progress through final design for the L200 & L300 main packages. Preparation for early work packages is nearing completion with NTP expected in Q1 2019. The L115 demolition work is complete. Right-of-Way acquisition and permitting continue to be closely monitored for potential critical path impacts. The team clarified the demolition permit process for the L200 contract, revised schedules accordingly and removed this issue from the critical path. The critical path currently runs through the L200 contract negotiations and ST Board approval to NTP for the early work and the start of on-site construction. The team is continuing to work on civil-systems interfaces. Revenue Service for Lynnwood Link remains 2024.



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, AC increased by \$1.7 M due to executing one construction services contract and one third party agreement below budget, and decreased \$0.1 M due to a change order to a final design contract, for a net increase of \$1.6 M.

Corrections were also made to the September and October periods to reflect an increase to AC due to executing a final design change order below budget.

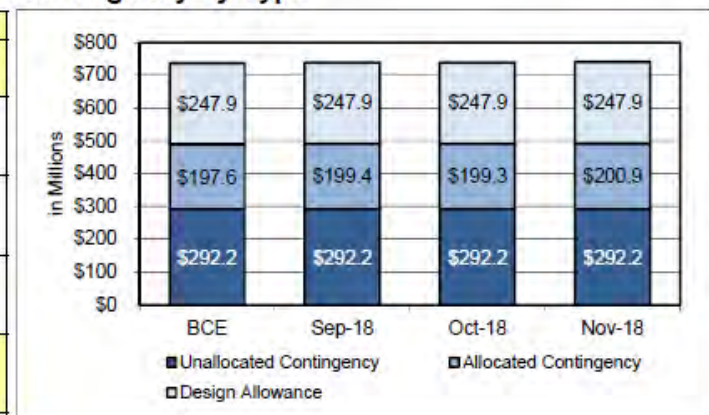
No drawdown to UAC occurred in this period.

Contingency Status (Monthly)

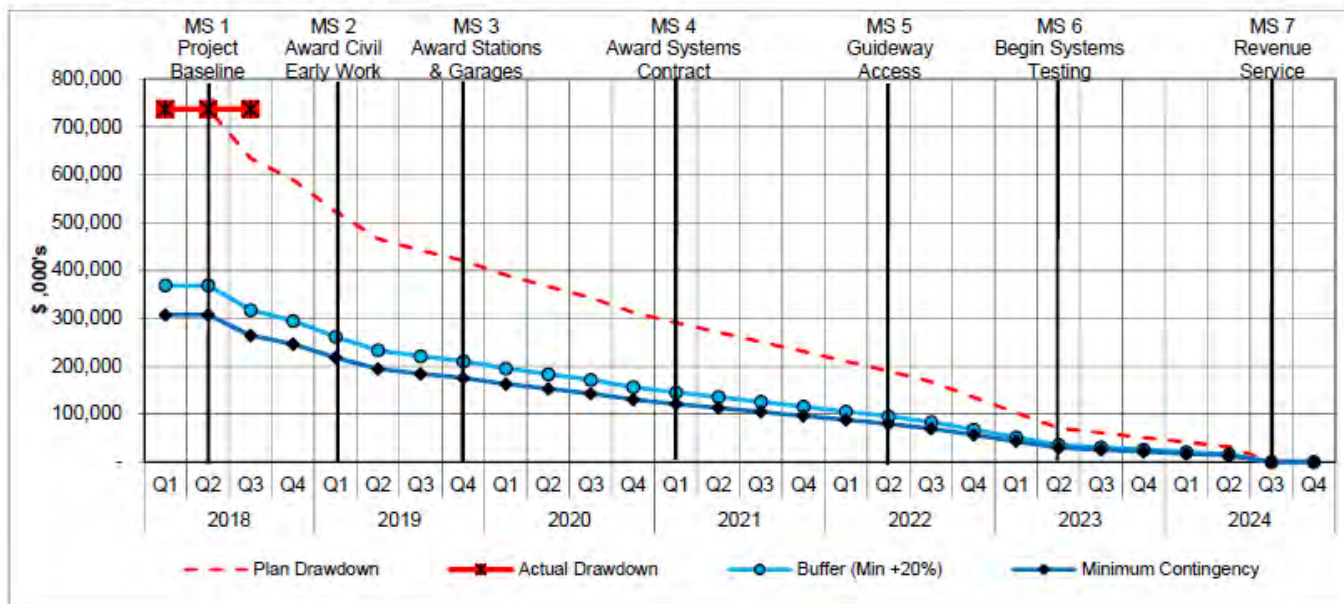
Type	Baseline		Current Status	
	Amount	% of Total Budget	Remaining Amount	% of Work Remaining
Design Allowance	\$247.9	8.9%	\$247.9	10.0%
Allocated Contingency	\$197.6	7.1%	\$200.9	8.1%
Unallocated Contingency	\$292.2	10.5%	\$292.2	11.8%
Total:	\$737.7	26.6%	\$741.1	29.9%

Table figures are shown in millions.

Contingency by Type



Contingency Drawdown (Quarterly)



Link Light Rail

Lynnwood Link Extension



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
365	350	208	105	236	142
<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>					

- The Board Approved parcels increased because two (2) parcels were approved at the October Board Meeting (R2018-39).
- The additional five (5) parcels were the result of two parcels being re-platted into separate tracts.

Community Outreach

In November, the Community Outreach team performed personal outreach to over 100 community members.

- Performed person-to-person outreach to residents concerning noise monitoring, electrical service field observations, pavement coring, utility potholing, and survey activities.
- Responded to inquiries about parking at the Lynnwood Transit Center, construction haul routes and pedestrian circulation near NE 116th St. in Seattle, and fumes after the demolition of a property in Seattle.
- Responded to the Church of the Nazarene for signage aid in wayfinding, the Snohomish County Fire Marshall to relocate a construction fence blocking a fire hydrant in Lynnwood, and to a Community Transit request for information about temporary parking at the Lynnwood Ride Store.
- Coordinated with King County Metro on the replacement of their bus stop near the Seattle micro-housing demolition site.

Sound Transit Board Actions

Board Action	Description	Date
M2018-150	Authorizes the chief executive officer (CEO) to amend the contract with PGH Wong Engineering, Inc. to provide construction management services for the construction phase of the Lynnwood Link Extension (LLE) in the amount of \$75,426,930, for a new total authorized contract amount not to exceed \$83,729,135.	11/15/2018
M2018-151	Authorizes the CEO to execute a reimbursement agreement with the City of Mountlake Terrace for design services for LLE in an amount not to exceed \$250,755.	11/15/2018
M2018-152	Authorizes the CEO to execute an amendment to the Permitting and Reimbursement Agreement with the City of Mountlake Terrace to add continued design review and construction support services for LLE in the amount of \$2,131,287 for a new total authorized agreement amount not to exceed \$3,125,232.	11/15/2018

Civil Final Design Overview

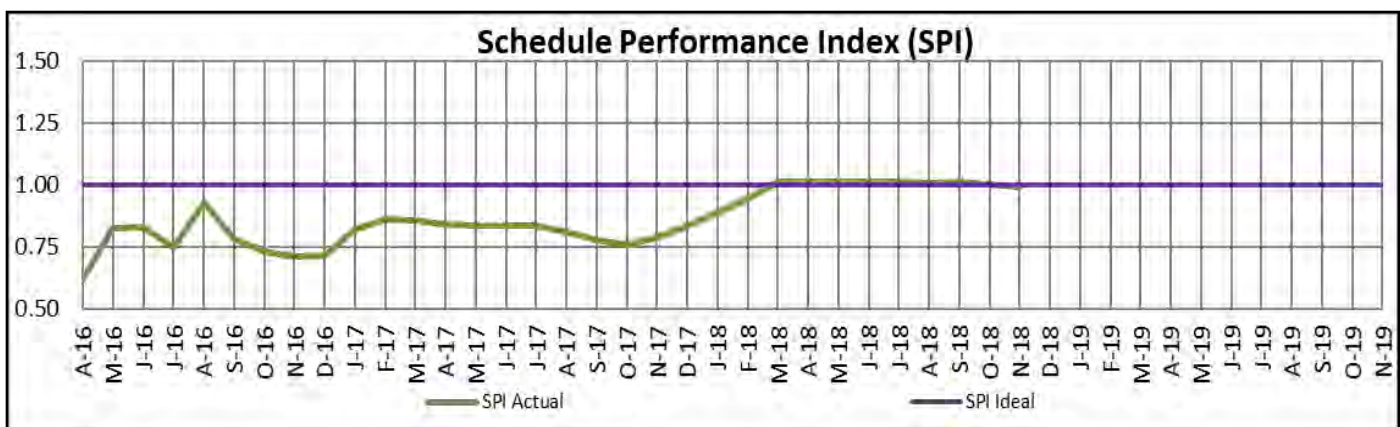
Sound Transit executed a professional services contract with HNTB Jacobs in April 2016 to perform civil final design along the entire Lynnwood Link alignment. Design services include preparation of comprehensive civil contract documents for construction, design coordination and cooperation with the GC/CM 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

- Advancement of the civil final design.
- Submittal of the L200 & L300 Early Work Issue For Construction (IFC) design packages.
- Start of Quality Assurance for L200 & L300 Main Packages

Schedule Performance Index

The cumulative Schedule Performance Index (SPI) trends at 0.99 through November 2018, which means that the cumulative amount of work accomplished is slightly less than the amount of work originally planned.



Link Light Rail Lynnwood Link Extension

Cost Performance Index

\$80.6 M of the total contract amount, 80%, has been spent through November 2018. The civil final design percent complete is 81%, with an earned value of \$81.6 M. The cumulative Cost Performance Index (CPI) through November is 1.01 indicating that expenditures are consistent and trending lower than the earned value of work performed.



Cost Summary

Contract	Cumulative To-date
Amount Invoiced	\$80.6 M
% Spent	80%
Earned Value	\$81.6 M
% Complete	81%
SPI	0.99
CPI	1.01



Lynnwood Link project staff engage with attendees at the Lynnwood Fair on 44th.

Systems Final Design Overview

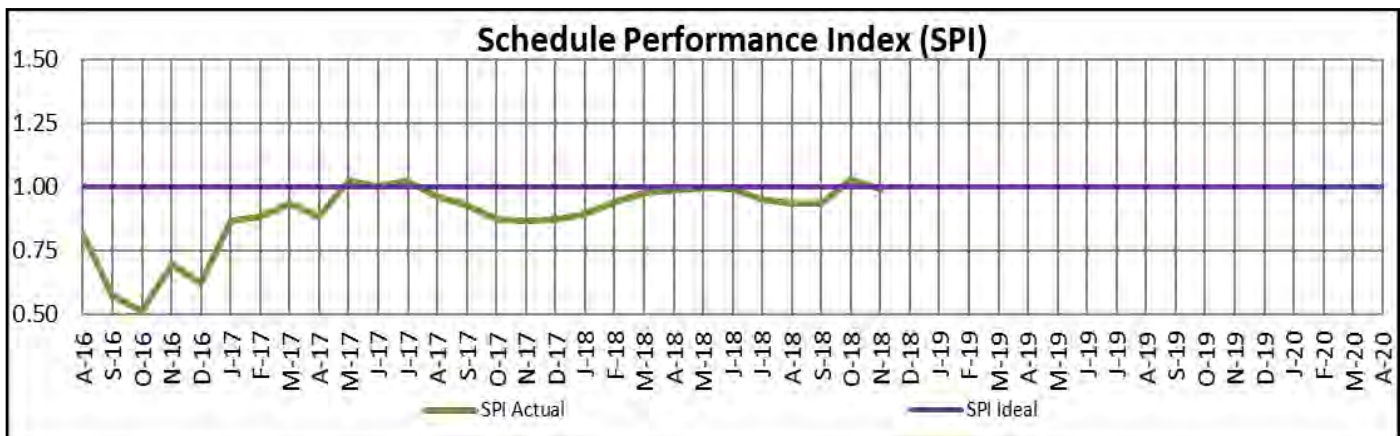
Sound Transit executed a professional services contract with LTK Engineering in July 2016 to perform systems final design along the entire Lynnwood Link alignment. Design services include preparation of comprehensive systems contract documents for construction, design coordination and cooperation with 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

- Advancement of 90% Design work, targeting 1st Quarter 2019 completion.
- Held L800 constructability review on November 1st and 2nd.

Schedule Performance Index

The cumulative Schedule Performance Index (SPI) trends at 0.99 through November 2018, which means that cumulative amount of work accomplished is slightly less than the amount of work originally planned.

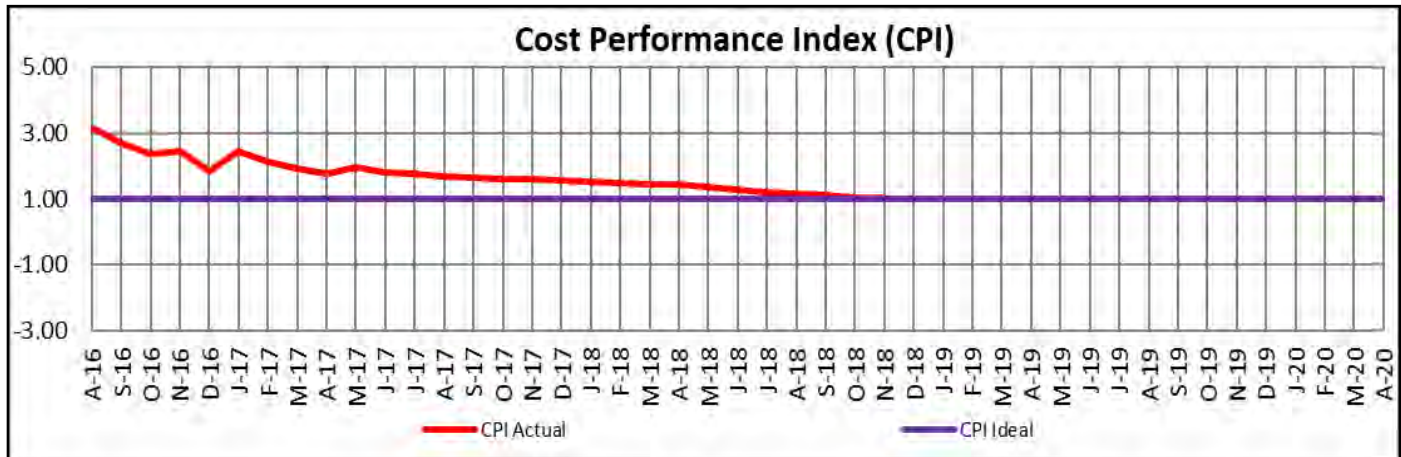


Link Light Rail

Lynnwood Link Extension

Cost Performance Index

\$6.5 M of the total contract amount, 69%, has been spent through November 2018. The systems final design percent complete is 71%, with an earned value of \$6.7 M. The cumulative Cost Performance Index (CPI) through November is 1.03 indicating that expenditures are significantly lower than the earned value of work performed.



Cost Summary

Contract	Cumulative To-date
Amount Invoiced	\$6.5 M
% Spent	69%
Earned Value	\$6.7 M
% Complete	71%
SPI	0.99
CPI	1.03



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

Civil Construction Management Overview

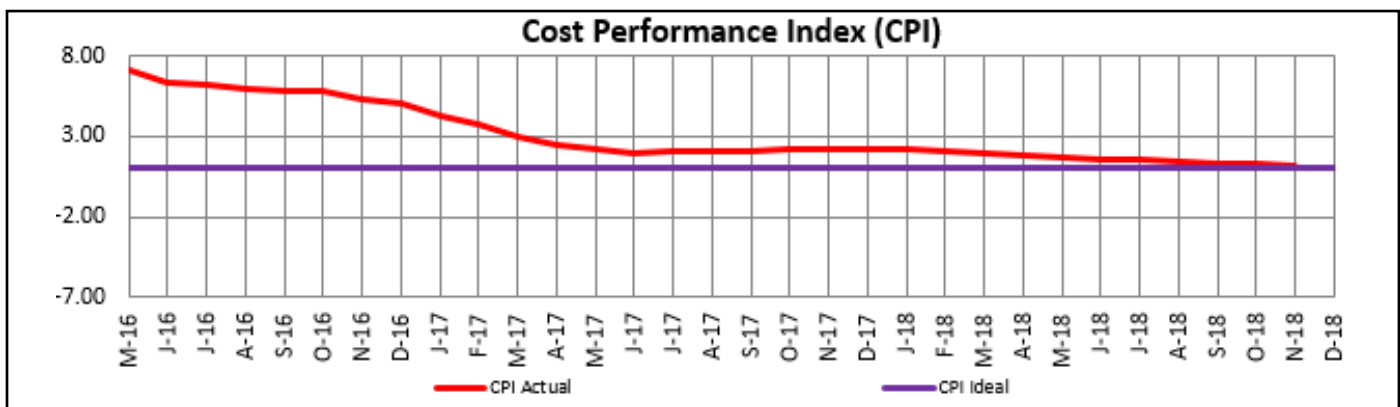
Sound Transit executed a professional services contract with PGH Wong in May 2016 to perform civil Construction Management (CMC) Services, including procurement support, permit support, contract document review, construction estimate reviews, participation in value engineering, risk assessments and constructability reviews, construction management support and oversight of early works by adjacent private and public developments, and public and private utility relocations.

Current Progress

- Coordinating meetings with design, GC/CM, and Sound Transit teams.
- Coordination on various preconstruction activities including cost estimates, schedule, and constructability.
- Participate in negotiations of the L200 early work contract.
- Construction management oversight for the L115 demolition contract.

Cost Performance Index

\$6.2 M of the total contract amount, 83%, is spent through November 2018, with an earned value of \$7.5 M. The cumulative Cost Performance Index (CPI) is 1.21, indicating that expenditures are lower than the earned value of work performed. Phase 1 of the contract was planned to end in January 2018, but the schedule extended along with the schedule for design completion. Phase 2 of the contract is expected to begin in December 2018.



Cost Summary

Contract	Cumulative To-date
Amount Invoiced	\$6.2 M
% Spent	83%
Earned Value	\$7.5 M
CPI	1.21

Link Light Rail

Lynnwood Link Extension



GC/CM Pre-Con Overview - L200 Northgate to NE 200th Street

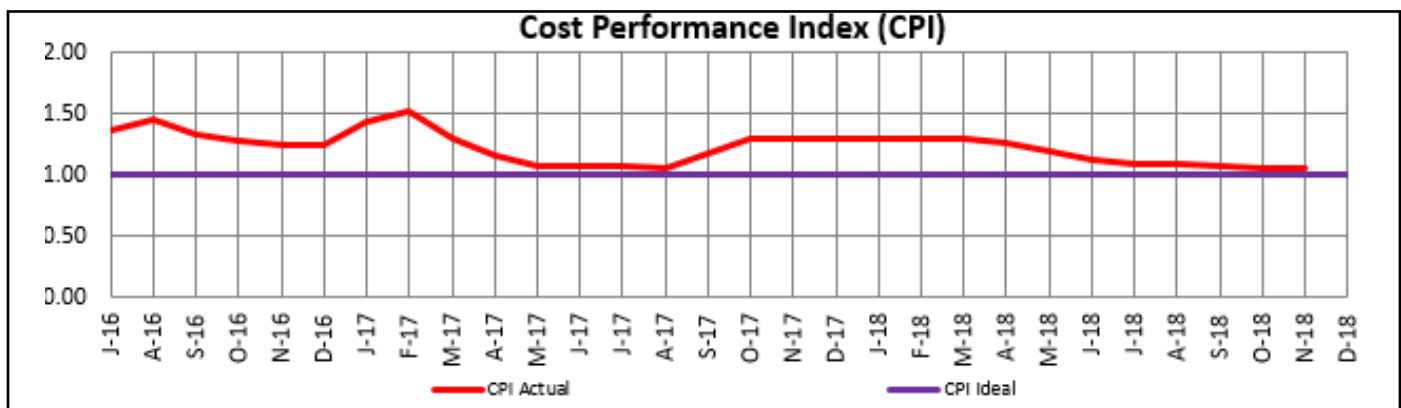
Sound Transit executed a professional services contract with Stacy & Witbeck Kiewit Hoffman in June 2016 to perform GC/CM pre-construction services for the L200 segment, including assistance in preparation of final construction plans including traffic control, preparation of schedules, reviewing right-of-way 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

- Coordinating meetings with design, Construction Management Consultant (CMC), and Sound Transit teams.
- Progress on various preconstruction activities including cost estimates, schedule, and constructability.
- Final negotiation of L200 early work package.

Cost Performance Index

\$4.7 M of the total contract amount, 93%, is spent through November 2018, with an earned value of \$5.0 M. The cumulative Cost Performance Index (CPI) is 1.05 indicating that expenditures are lower than expected for the earned value of work performed.



Cost Summary

Contract	Cumulative To-date
Amount Invoiced	\$4.7 M
% Spent	93%
Earned Value	\$5.0 M
CPI	1.05

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

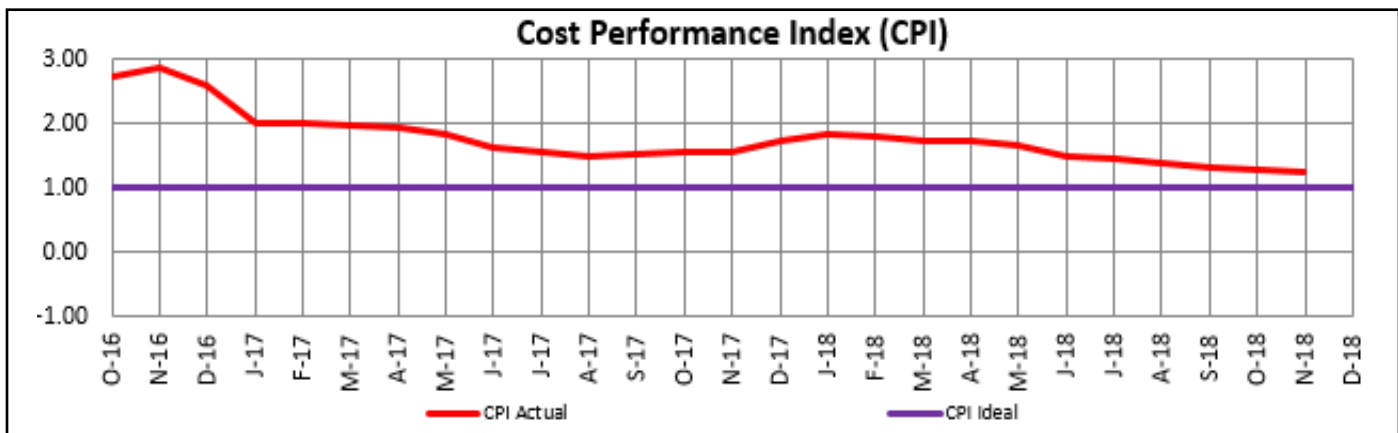
Sound Transit executed a professional services contract with Skanska in October 2016 to perform pre-construction services for the L300 segment, including assistance in preparation of final construction plans including traffic control, preparation of schedules, reviewing right-of-way needs, identifying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

Current Progress

- Coordinating meetings with design, Construction Management Consultant (CMC), and Sound Transit teams.
- Progress on various preconstruction activities including cost estimates, schedule, and constructability.
- Bidding out subcontract work and negotiating self-perform work for the L300 early work package.

Cost Performance Index

\$4.2 M of the total contract amount, 79%, has been spent through November 2018, with an earned value of \$5.3 M. The cumulative Cost Performance Index (CPI) is 1.24, indicating that expenditures are lower than expected for the earned value of work performed.



Cost Summary

Contract	Cumulative To-date
Amount Invoiced	\$4.2 M
% Spent	79%
Earned Value	\$5.3 M
CPI	1.24

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.

Phase

Construction

Budget

\$225.6 Million

Schedule

Construction Complete: 4th QTR 2018



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

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** – Continue troubleshooting irrigation system issues; on-going resolution to BIM modeling issues; as-built documentation; material acceptance documentation
- **Mercer Island Tunnel** – Continue tracking warranty items; ongoing conduit & wiring labeling
- **Mount Baker Ridge Tunnel** – Troubleshoot SCADA directional assignments to corresponding CCTV monitors; continue tracking warranty items; ongoing identification & corrective warranty work to resolve overheating and damage to ASD fuse terminal & conductors
- **SCADA** – Continue troubleshooting multiple alarm issues
- **Simplex** – Ongoing corrective work to resolve multiple 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 4th Quarter 2018, due to the following:

- Challenges continue with final commissioning of the Fire/Life/Safety Systems, including incomplete BIM As-Built data, incomplete or missing O&M manuals, and missing test reports;
- 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. November's monthly expenditure was \$644.6K, and included Contractor payments for portions of the final commissioning plus additional work identified as scope gap. Future expenditures are expected to continue to taper off. 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	\$18.0	\$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	\$169.2	\$198.3	\$0.0
Total	\$225.6	\$225.6	\$206.8	\$191.0	\$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	\$169.2	\$190.7	\$0.0
80 Professional Services	\$26.3	\$26.3	\$22.6	\$21.8	\$26.3	\$0.0
90 Unallocated Contingency	\$18.7	\$8.7	\$0.0	\$0.0	\$8.7	\$0.0
Total	\$225.6	\$225.6	\$206.8	\$191.0	\$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. Although there was no change to the Current Contingency Amount, there was an increase in the % of Contingency Remaining due to the decrease in the remaining budget from the previous period. This results in an increase to 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%	\$2.3	6.6%
Unallocated Contingency	\$18.7	8.3%	\$8.7	25.0%
Total:	\$35.7	15.8%	\$10.9	31.6%

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

Project Schedule

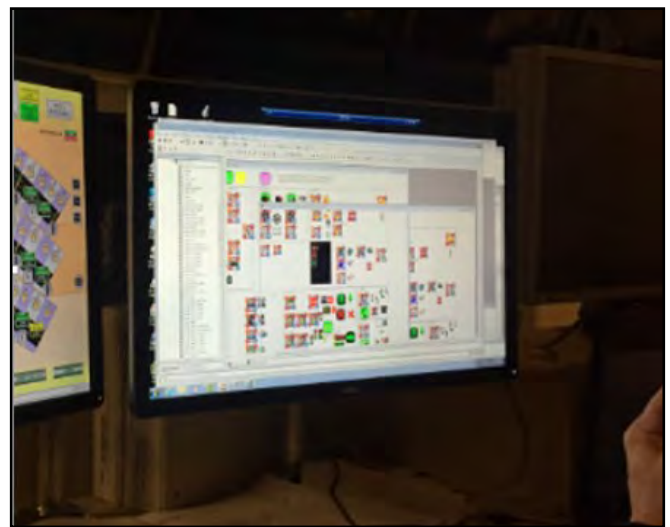
Project Milestones for construction are indicated below; forecast dates were submitted by WSDOT as anticipated dates, but have not at this time been accepted. Ongoing negotiations between WSDOT and the contractor to resolve commercial issues continue to push out the forecast Substantial and Physical Completion dates, now anticipated for 1st 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	Q1/2019	2/20/2017	Q1/2019	5/31/2017	6/14/2017 A	5/31/2017	Q1/2019

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



Checking wire terminations in tunnel control panels



SCADA programming screens — MBRT control room

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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; Ongoing electrical retrofit for cathodic protection; ongoing retrofit of approach structures; TPSS site 2 construction; ongoing overlay grinding for plinth attachment.
- **Mercer Island (E130):** Ongoing MI Tunnel & E Channel Bridge electrical retrofit and structural modifications; ongoing construction of Mercer Island Station structures and TPSS sites 3 and 4; ongoing ballasted track installation.
- **IDS to Mt. Baker Tunnel (E130):** Ongoing retrofit of tunnel electrical and structural modifications; ongoing construction of Judkins Park Station East Head House.

South Bellevue to Redmond

- **South Bellevue (E320):** Continued parking garage construction, working up through level four and continued work on the main span over I-90 via the Traveler system; excavation of trench for 112th undercrossing continues, as well.
- **Downtown Bellevue Tunnel (E330):** Continued installation of spray applied waterproofing in the invert and placed protection layer in the invert. Commenced rebar installation and placement of the invert concrete.
- **Downtown Bellevue to Spring District (E335):** Commenced reinforcing steel placement for center wall and continued concrete placements for exterior wall at the cut-and-cover structure.
- **Bel-Red (E340):** Installed false decking, form & pour girder stops, and form Guideway OCS and overhangs. Poured girder stop at final remaining pier. Continued on wall panel placement at south-side of station.
- **SR520 to Redmond Technology Station (E360):** Design – IFC for OVS Ped Bridge Architecture Drawings were submitted for ST review. Construction – 35/35 shafts complete, 31/31 columns complete, and 30/31 caps complete. Girder erection has resumed. OVS Ped Bridge concrete placement work continues. OVS and RTS station work is ongoing.
- **Systems (E750):** Continued with submittals, components and product design. Coordinated Installation Plan discussions between civil and system contractors.

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, 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) continues to be projected at approximately \$3.68B. This period's expenditure is about \$41M, pushing the total project expenditure to date cost from \$1.58B to \$1.62B. Project commitments has risen to over \$3B with all major construction contracts in place and construction is on-going throughout the alignment.

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	\$76.3	\$76.3	\$186.2	\$0.0
Preliminary Engineering	\$55.9	\$55.9	\$54.8	\$54.7	\$55.9	\$0.0
Final Design	\$283.0	\$283.0	\$245.6	\$211.8	\$283.0	\$0.0
Construction Services	\$257.5	\$257.5	\$196.7	\$76.0	\$257.5	\$0.0
3rd Party Agreements	\$52.2	\$52.2	\$38.5	\$20.8	\$52.2	\$0.0
Construction	\$2,544.3	\$2,544.3	\$2,150.4	\$912.9	\$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	\$268.7	\$267.2	\$298.2	\$0.0
Total	\$3,677.2	\$3,677.2	\$3,031.1	\$1,619.9	\$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	\$889.2	\$454.0	\$959.1	(\$214.5)
20 Stations	\$397.7	\$474.2	\$434.1	\$140.8	\$470.9	(\$73.2)
30 Support Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$808.5	\$568.3	\$457.7	\$249.7	\$600.2	\$208.3
50 Systems	\$353.8	\$367.9	\$346.9	\$55.8	\$329.8	\$24.0
Construction Subtotal (10 - 50)	\$2,304.6	\$2,360.1	\$2,127.9	\$900.3	\$2,360.0	(\$55.4)
60 Row, Land	\$288.5	\$288.5	\$268.7	\$267.2	\$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	\$634.5	\$452.3	\$889.2	\$9.2
90 Unallocated Contingency	\$182.9	\$136.6	\$0.0	\$0.0	\$136.6	\$46.2
Total (10 - 90)	\$3,677.2	\$3,677.2	\$3,031.1	\$1,619.9	\$3,677.1	\$0.0

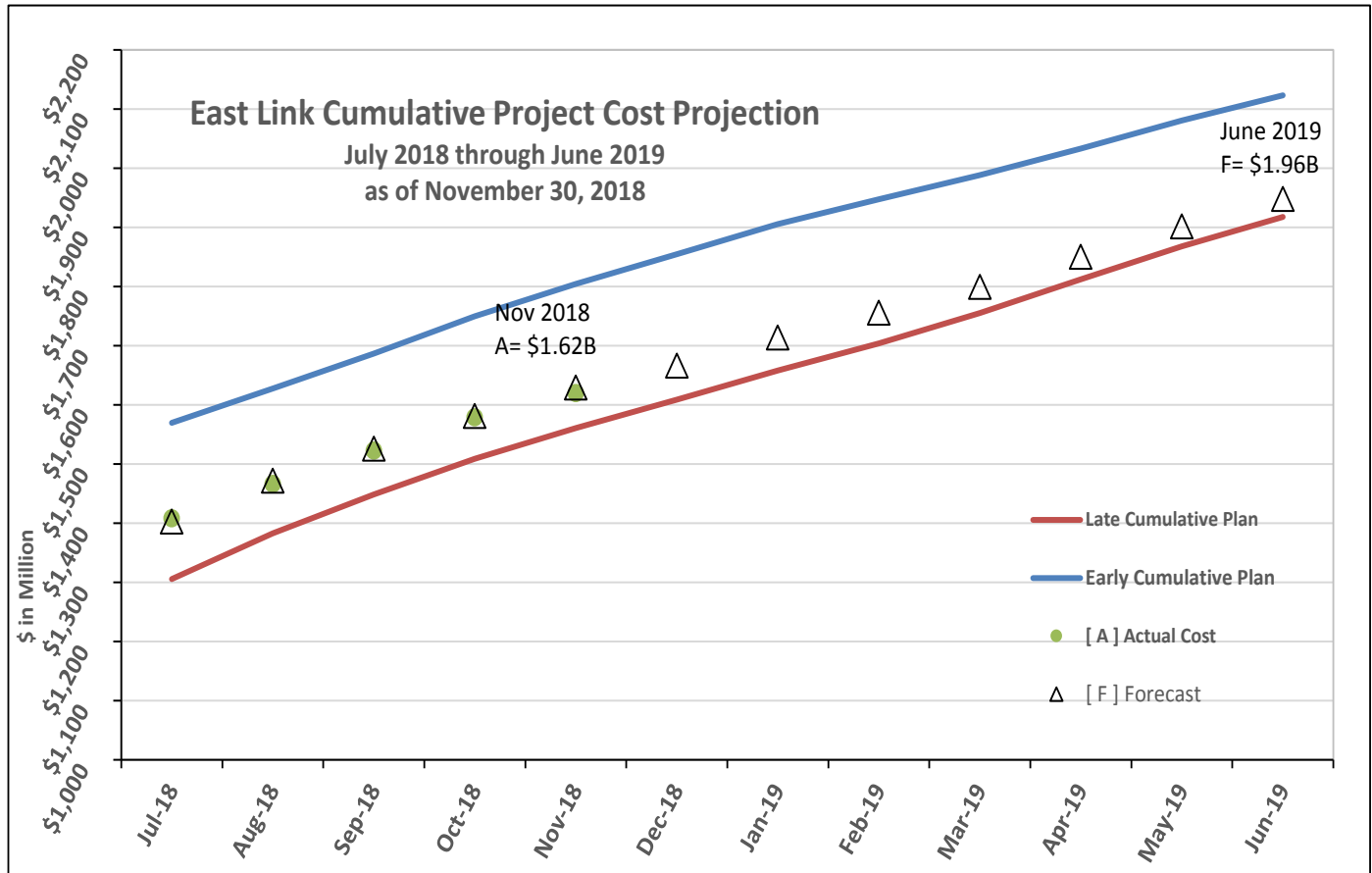
Link Light Rail

East Link Extension



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 \$41M where Construction Phase is responsible for over 78% or approximately \$32.3M of November's expenditure. Total project cost incurred to date topped \$1.62B, to which about \$900M was recorded in the Construction Phase. The project expenditures continue to pick up and is predicted to rise to approximately \$1.96B by June 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 3rd QTR 2018 risks update was completed in early October. Following the completion of the Risk Mitigation Milestone #4 (completion of SEM Tunneling), East Link's Quantitative Risk Assessment took place on the week of October 29th. It is anticipated that the draft report from this workshop will be issued before the year end.

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 November 2018, all major construction contracts have been procured, the total contingency balance stands at \$417M (previously \$417.6M). 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 \$0.5M. Due to rounding, total AC remained at \$276.8M. The contingency draw in this period is primarily driven by aggregation of construction change orders in the project, primarily the construction contracts.

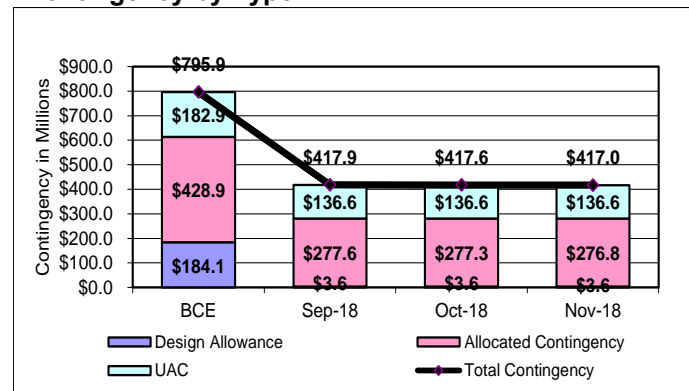
Unallocated Contingency (UAC) is used to address general project-wide cost risks and uncertainties. The UAC balance remains unchanged at \$136.6M.

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%	\$276.8	13.5%
Unallocated Contingency	\$182.9	5.0%	\$136.6	6.6%
Total	\$795.9	21.6%	\$417.0	20.3%

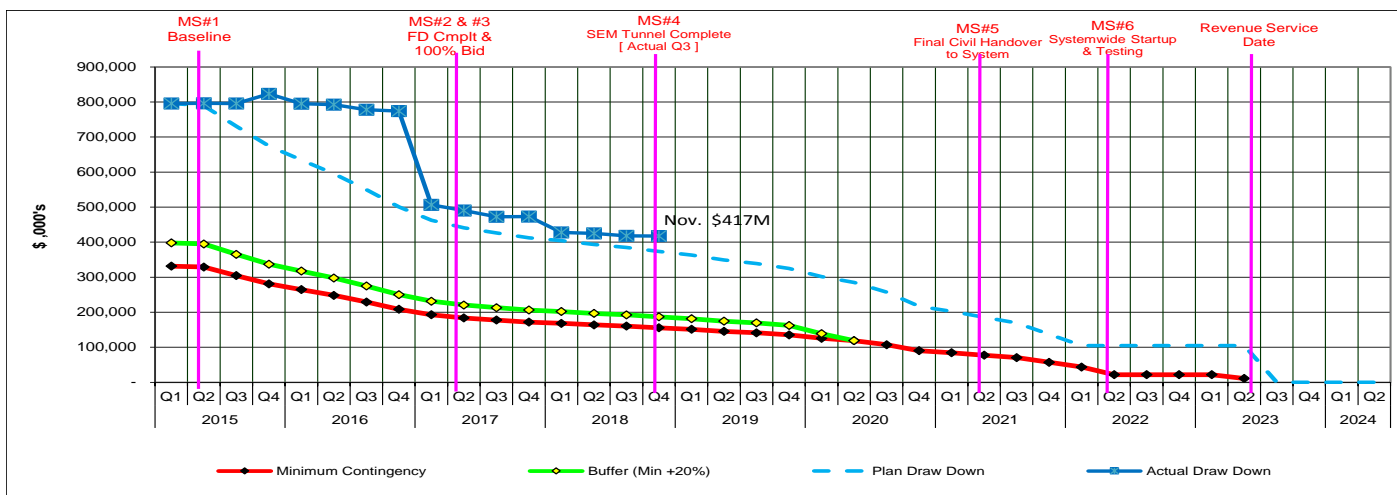
Table figures are shown in millions.

Contingency by Type



Contingency Drawdown

At the end of the 3rd QTR 2018, East Link Project's total contingency drawdown plan is trending within plan with an overall balance was approximately \$417.9M 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 November is approximately \$417M.



Contingency Drawdown as of November 30, 2018

Link Light Rail

East Link Extension



Project Schedule

The Integrated Master Schedule is presented below.

E130 continued structural work on both stations and began laying ballasted track on the East Channel Bridge.

E320 continued pier table work for the long span structure, and continued installing walls at the parking garage, along Bellevue Way SE, and at the 112th undercrossing; continued removal of roadway at 112th undercrossing.

E330 continued final tunnel lining work.

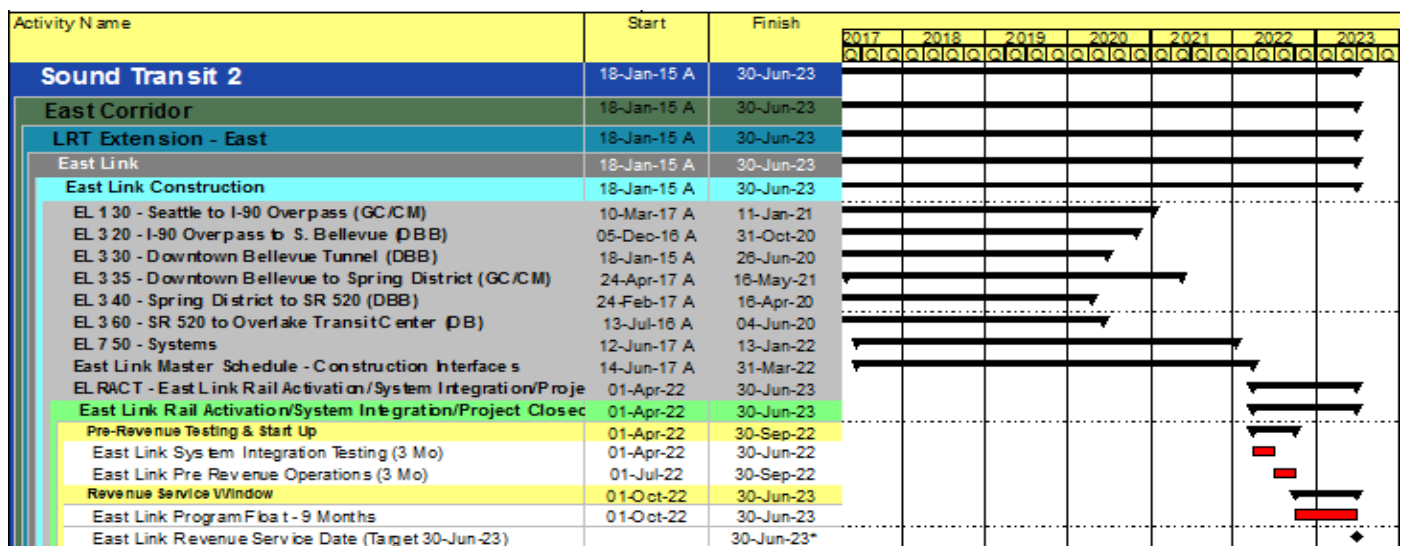
E335 continued work on aerial guideway and the long span over I-405; continued placing trackwalls in the Kirkland Wye and placing sub-ballast and permanent fencing; continued trench wall construction east of 120th Station; and continued civil work at the station sites.

E340 continued sanitary sewer installation and retaining wall placement on Spring Blvd; continued placing wall panels at 130th Station; and resumed forming end diaphragms for the aerial guideway.

E360 continued placing columns and caps along the aerial guideway. Wall placement continued, working east toward RTS. Construction on the OVS pedestrian bridge continued with foundations at the east abutment and in the SR520 median.

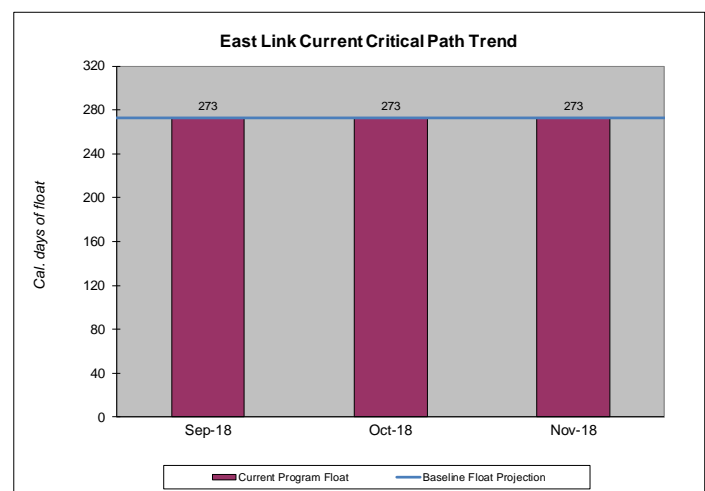
E750 Systems contractor continued product design, submittal, and procurement. This phase of work will be on-going for the next year. The physical construction on Northgate Link will occur before commencing on East Link. Systems construction on East Link is anticipated to start on the eastern segment of E130 in Summer of 2019.

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



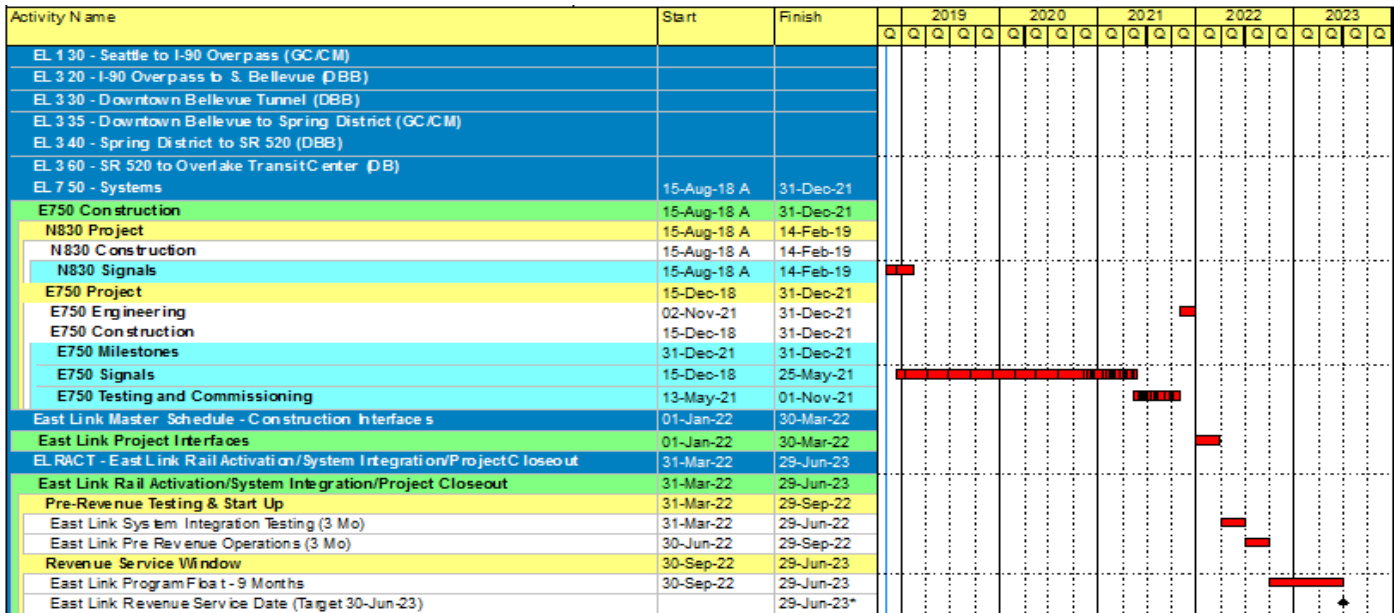
Project Float

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



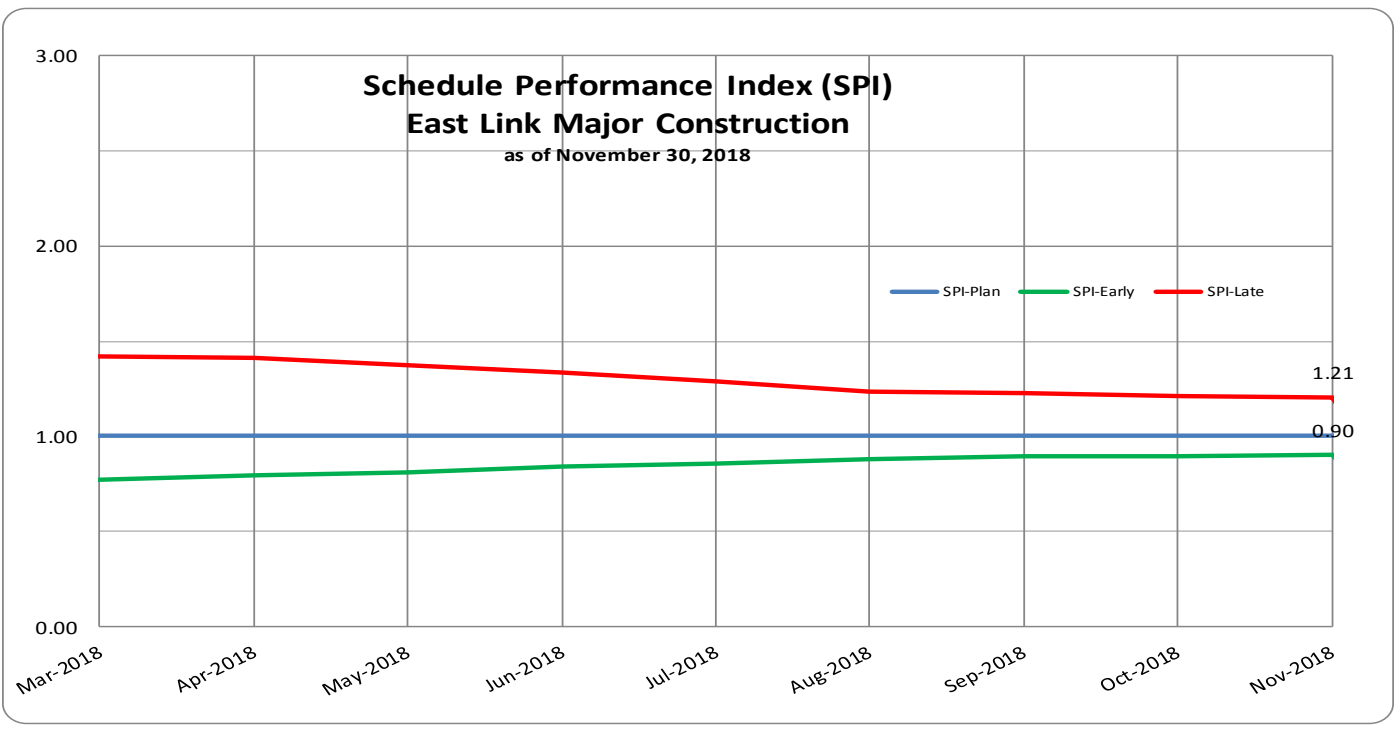
Critical Path Analysis

The East Link Critical path currently runs entirely through the E750 contract, driven by the signal work that is ongoing on Northgate Link. The interface points at the E130 and E335 handovers continue to be near-critical and will be monitored appropriately.



Schedule Performance Index

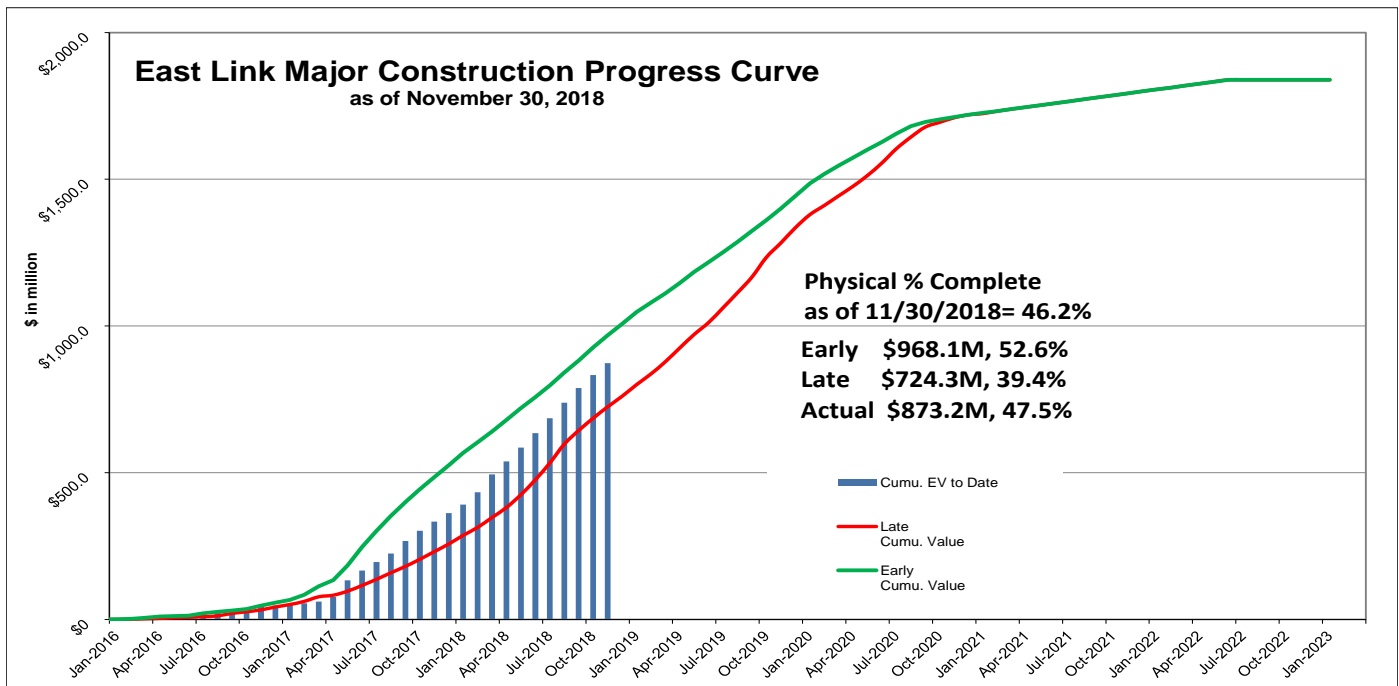
The early Schedule Performance Index (SPI) for East Link's Major Construction Packages is at 0.9 for this period, which is the same as last month. The late SPI is at 1.21 showing that in general, performance is satisfactory.



Link Light Rail East Link Extension

Project Cash Flow Projection

All seven major construction contractors are now mobilized. All major civil work is well underway. 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 November, performance is trending appropriately between the early/late projection as drawn from the master schedule.



E320 South Bellevue: Columns and guideways leading to 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.
- Launched East Link Light Rail Facebook Group through our Facebook social media channel. Currently have 360 followers.
- Provided East Link project information to Microsoft's commute trip reduction staff. Microsoft is developing an audio/visual tour that will include facts related to sustainability at the Redmond Technology Station.



E335 Downtown Bellevue to Spring District: Bridge spanning over Highway I-405 along NE 6th Street on November 30, 2018

Sound Transit Board Actions

Board Action	Description	Date
	None this period	

Construction Safety

Data/ Measure	November 2018	Year to Date	Project to Date
Recordable Injury/Illness Cases	2	25	38
Days Away From Work Cases	0	6	7
Total Days Away From Work	61	351	353
First Aid Cases	3	85	115
Reported Near Mishaps	10	91	183
Average Number of Employees on Worksite	976	-	-
Total # of Hours (GC & Subs)	142,787	1,611,525	2,313,978
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	2.80	3.10	3.28
LTI Rate	0.00	0.74	0.61
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.

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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]

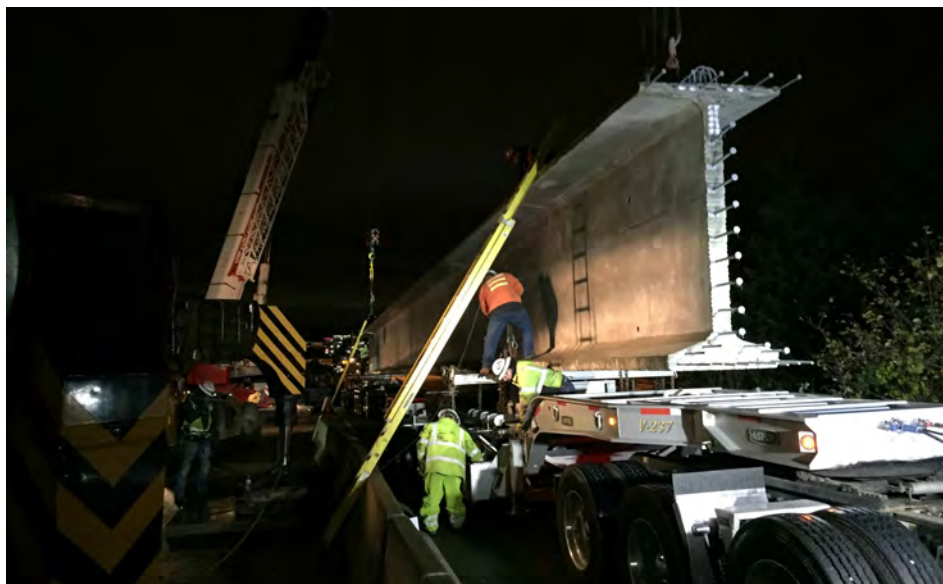
Status: See following pages under Contract E340.

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).



E360 SR520 to Redmond Technology Station: Preparation to hoist aerial guideway girder

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

Current Progress

D2 Structure & Mt. Baker Tunnel (West Segment): Ongoing retrofit of tunnel electrical and structural modifications; ongoing construction of Judkins Park Station East Head House.

Floating Bridge Retrofit (Center Segment): WSDOT Winter Work Moratorium: Ongoing electrical retrofit for cathodic protection; ongoing retrofit of approach structures; TPSS 2 construction; ongoing overlay grinding for plinth attachment.

Mercer Island (East Segment): Ongoing MI Tunnel & E Channel Bridge electrical retrofit and structural modifications; ongoing construction of Mercer Island Station structures and Traction Power Sub Station (TPSS) sites 3 and 4; ongoing ballast track installation.

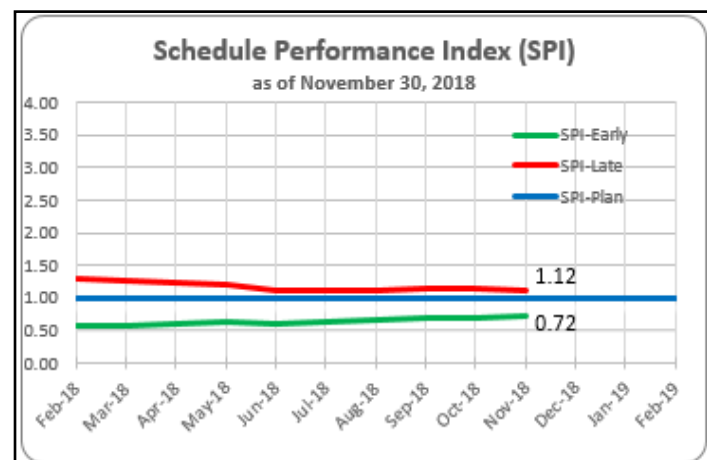
Schedule Summary

The critical path for this project continues to run through the demolition of the Rainier Avenue Bridge, then through Judkins Park Station. Contractor is currently forecast to achieve all milestones on or ahead of target completion dates.

Activity Name	Start	Finish	2019	2020
E130 Construction	10-Mar-17 A	11-Jan-21		
Milestones	10-Mar-17 A	11-Jan-21		
Access Milestones	10-Mar-17 A	12-May-17 A		
16. Notice To Proceed - Package 1	10-Mar-17 A			
16. Notice To Proceed - Remaining Scope	12-May-17 A			
Major Project Complete Milestones	17-Jul-19	11-Jan-21		
16. MS#01 - Substantial Completion Mercer Island Station to East End Of Project (17-Jul-19)		17-Jul-19*		
16. MS#02 - Substantial Completion Mercer Island Sta to West Mercer Island Lid (29-Jan-20)		05-Dec-19*		
16. MS#03 - Substantial Completion of IDS Conversion (27-Feb-20)		23-Feb-20*		
16. ST E130 Work Complete		12-Nov-20		
16. MS#04 - Substantial Completion All Work (12-Dec-20)		12-Dec-20*		
16. Acceptance		11-Jan-21		
Construction	20-Mar-17 A	10-Nov-20		
Preliminary Activities	03-Apr-17 A	01-Oct-20		
Sitework	23-Aug-17 A	07-Dec-18		
Demolition	20-Jul-17 A	29-Mar-19		
Tunnel Modifications	18-Sep-17 A	20-Aug-19		
Stations	15-Sep-17 A	23-Sep-20		
OCS Bases/Frames	02-Apr-18 A	10-Aug-20		
Civil/Utilities	05-Jul-17 A	10-Nov-20		
Electrical	20-Mar-17 A	08-Oct-20		
Structures Retrofit	20-Mar-17 A	10-Nov-20		
Trackwork	29-Jan-18 A	27-Oct-20		
Systems	26-Jun-17 A	10-Nov-20		
IDS Modification	16-Sep-19	23-Feb-20		

Schedule Performance Index

This period, the SPI early is 0.72, SPI late is 1.12. The early index indicates the Contractor is behind their early finish plans; the late index shows the Contractor is on target with their late finish plan. These figures support the fact the Contractor encountered challenges in the initial phases of the post-tensioning scope, but continues to catch up to their baseline plan. The WSDOT winter work moratorium on the Floating Bridge is now in effect until the end of March 2019; during the moratorium, construction activities that do not require movement of ballast in the pontoons will continue as planned.



Link Light Rail East Link Extension

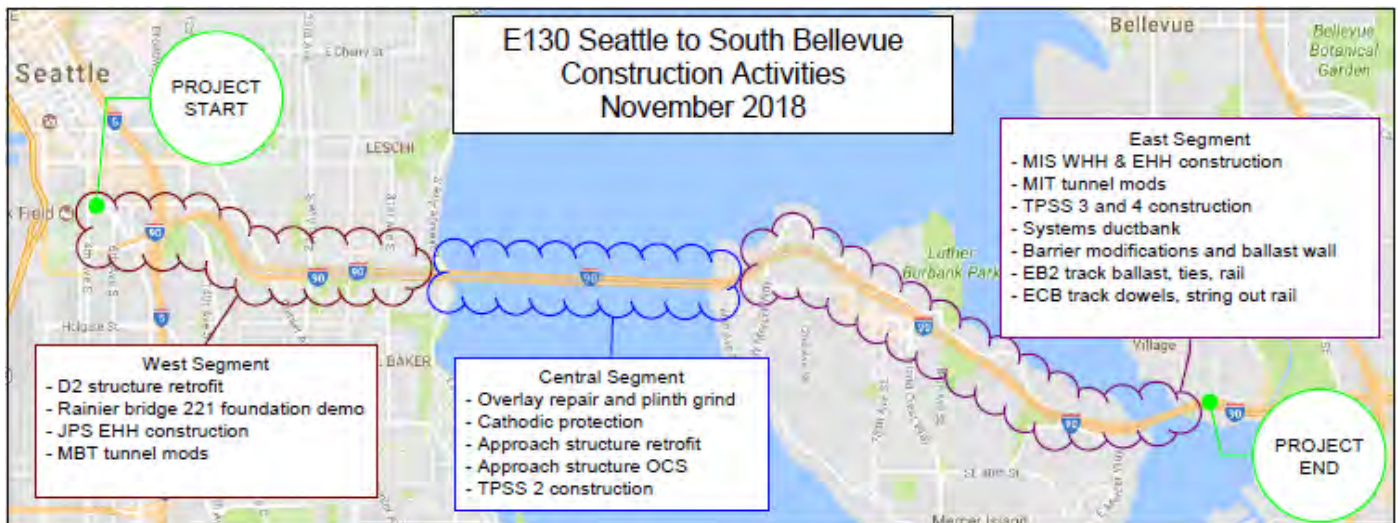
Next Period's Activities

- **West Segment:** Continue electrical and structure retrofits; ongoing Judkins Park Station construction, utility work.
- **HMH Floating Bridge (Center Segment):** Continue electrical retrofit; ongoing lightweight concrete plinth attachment and rail layout; WSDOT winter work moratorium continues
- **East Segment:** Ongoing mechanical/electrical rough-in at MI Station, TPSS sites construction, ongoing structures retrofit.; 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.

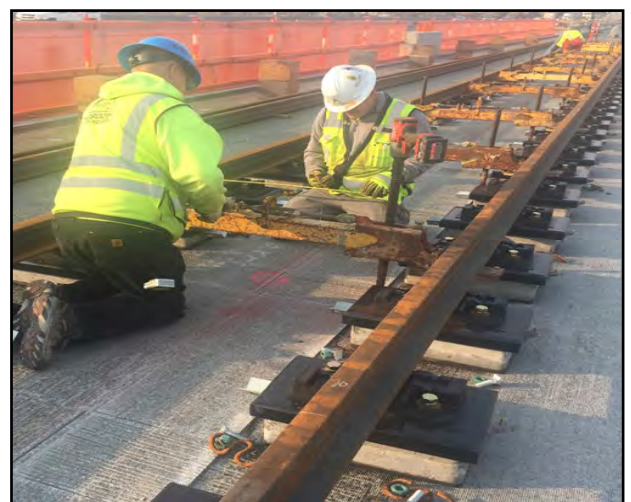
E130 Construction Activities



Cost Summary

Present Financial Status	Amount
E130 Contractor - Kiewit-Hoffman	
Original Contract Value (incl. Phase 2 MACC)	\$665,000,000
Change Order Value	\$16,035,950
Current Contract Value	\$680,080,950
Total Actual Cost (Incurred to Date)	294,674,706
Percent Complete	42.5%
Authorized Contingency	\$46,660,541
Contingency Drawdown	\$16,035,950
Contingency Index	1.2

Contract Value excludes Betterment



Building track section on the floating bridge

Contract E320 – South Bellevue

Current Progress

I-90 Flyover: Continue Traveler doing long span segmental work crossing I-90; continue installing mechanically stabilized earth (MSE) walls at Bellevue interchange and waterline work under I-90 structure.

Bellevue Way SE: Continue excavation to subgrade, soldier pile and tie back work. Column and cap formwork demobilization.

S. Bellevue Sta./P&R: Continue construction of parking garage; pouring of level three and do vertical column work for level four.

Wye-to-East Main: Continue work at 112th undercrossing, including drilling and installing dewatering well points. Continue excavation of trench, track wall work and backfill for sound wall.

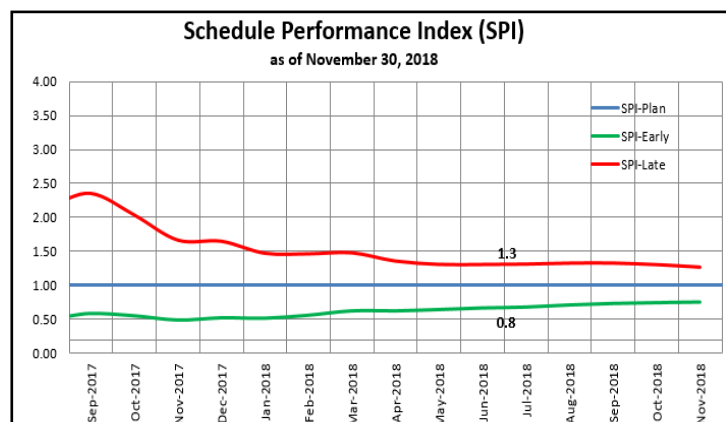
Schedule Summary

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. The October update is presented below. The November schedule update was rejected for being out of compliance with ST specifications. Work is proceeding as planned and an updated schedule is anticipated before next month.

Activity Name	Start	Finish	2019					2020			
			Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
E320 Construction	05-Dec-16 A	30-Oct-20									
Milestones and Summary	05-Dec-16 A	30-Oct-20									
Contract Milestones	05-Dec-16 A	30-Oct-20									
Limited Notice to Proceed	05-Dec-16 A										
Notice to Proceed	13-Feb-17 A										
Milestone 3A - Clear & Grub Sneydoocken (Stat of Wetland Fil' Work+365 D)		03-Dec-18*									
Milestone 1 - (Alternate) Phase B21 Not Used		23-Jan-19									
Milestone 3B - Clear & Grub Coal Creek		12-Aug-19*									
Milestone 4 - SIFT & SCADA Complete (NTP+1160D)		29-Jan-20*									
Milestone 5 - Acceptance of South Bellevue Station (NTP+1215D)		19-Jun-20*									
Milestone 2 - Final Restoration of Bellevue Way (Start+897D)		19-Jul-20									
Milestone 6 - Required Substantial Completion (NTP+1340D)		30-Oct-20*									
Construction-1	21-Apr-17 A	07-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	28-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	07-Oct-20									
Area C - 112th Ave SE, 112th Ave SE Wye to SE 8th St - Sta EB476+75 to EB508+00	13-Jun-17 A	18-Sep-20									
Area D - 112th Ave SE to SE 8th St to Main St - Sta 508+00 to EB528+25	22-May-17 A	03-Sep-20									
Area E - Coal Creek Stream Enhancement	09-Jul-18 A	12-Aug-19									
Area F - Sneydoocken Mitigation	23-Apr-18 A	03-Dec-18									

Schedule Performance Index

The E320 project is roughly 20 months into the projected duration of 44 months and has completed and billed an earned value percentage of roughly 45%. This period, the SPI early is at 0.8 and the SPI late is at 1.3. When evaluating the SPI, it is important to note that the numbers indicate that the Contractor continues to be behind the early finish plans, but maintains ahead of the late curve when compared to the baseline work plan.



Link Light Rail East Link Extension

Next Period's Activities

I-90 Flyover: Continue wall work and long span work over I-90 via Traveler system. Begin excavation work for sub-grade track slab.

Bellevue Way SE: Continue soldier pile and tie back work at several points along Bellevue Way.

S. Bellevue Sta/P&R: Continue level three and four of parking garage construction.

Wye-to-East Main: Continue track wall work, dewatering well installation and excavation for trench.

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	\$1,524,974
Current Contract Value	\$321,199,249
Total Actual Cost (Incurred to Date)	\$149,210,880
Percent Complete	45.1%
Authorized Contingency	\$38,532,000
Contingency Drawdown	1,524,974
Contingency Index	11.1

* \$ Amount excludes betterments and STArt.



Traveler working over I-90

Contract E330 – Downtown Bellevue Tunnel

Current Progress

Tunnel invert : Continued installation of spray applied waterproofing in the invert and placed protection layer in the invert. Continued installing invert drainage mat and smoothing layer. Continue installing fiberglass dowels to support reinforcing in invert. Commenced rebar installation and placement of the invert concrete.

Tunnel Crown: Continued applying smoothing layer and patching on crown.

Between Portals: Completed shotcrete work at the shaft and commenced demobilizing the equipment off the site.

South Portal: Completed placing the mud slab for the South Portal Cut and Cover. Batch plant demobilization under way.

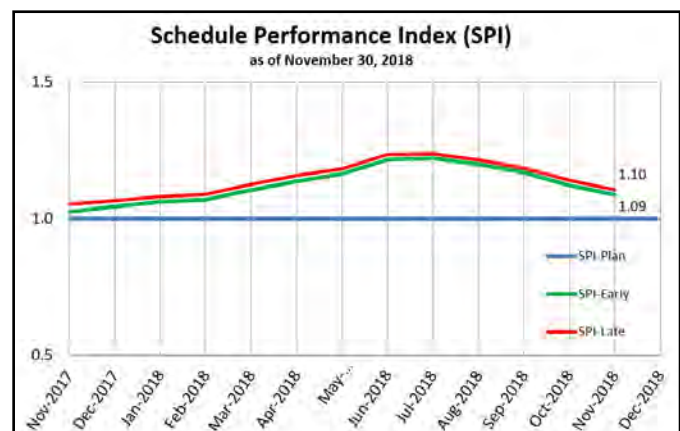
Schedule Summary

The critical path for this contract follows the final tunnel lining and the completion of the South Portal structure. The Contractor is now forecast to achieve Substantial Completion ahead of their contractual requirements.

Activity Name	Start	Finish	2019				2020	
			Q4	Q1	Q2	Q3	Q4	Q1
E330 Construction	15-Dec-15 A	31-May-20						
CONSTRUCTION	15-Dec-15 A	31-May-20						
MILESTONE CONSTRUCTION EASEMENTS	15-Dec-15 A	31-May-20						
MILESTONES	15-Dec-15 A	31-May-20						
CALCULATED MILESTONES	15-Dec-15 A	31-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		28-Jan-20						
MLST 4 - Substantial Completion Total Contract		31-May-20						
MOBILIZATION	08-Feb-16 A	25-Apr-19						
SITEWORK	29-Feb-16 A	31-May-20						
PRECONSTRUCTION	21-Mar-16 A	24-Feb-20						
TRAFFIC CONTROL	25-Mar-16 A	07-Oct-19						
SURVEY & MONITORING	29-Feb-16 A	03-May-18 A						
NORTH PORTAL AREA	13-Jun-16 A	14-Oct-16 A						
SOUTH PORTAL AREA	08-Feb-17 A	08-Apr-17 A						
SKYLINE BUILDING RETROFIT	29-Feb-16 A	31-May-20						
TUNNELING	01-Feb-17 A	03-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	03-Jan-20						
MID TUNNEL	08-Mar-18 A	07-Oct-19						
DEMOBE	13-Mar-17 A	18-May-20						

Schedule Performance Index

In November, the SPI early is at 1.09 and the SPI late is at 1.10. Both SPIs are well ahead of the baseline work and are supported by the fact that the contractor achieved earlier than planned tunnel excavation completion as a result of good ground conditions and elimination of spiles during excavation. Storm water issues and seepage have impacted production and delayed completion of invert waterproofing and smoothing layer application in the tunnel. Due to late finish of the shaft lining, the stair well work will be shifted to start and completed by summer of 2019 to avoid the rainy season.



Link Light Rail East Link Extension



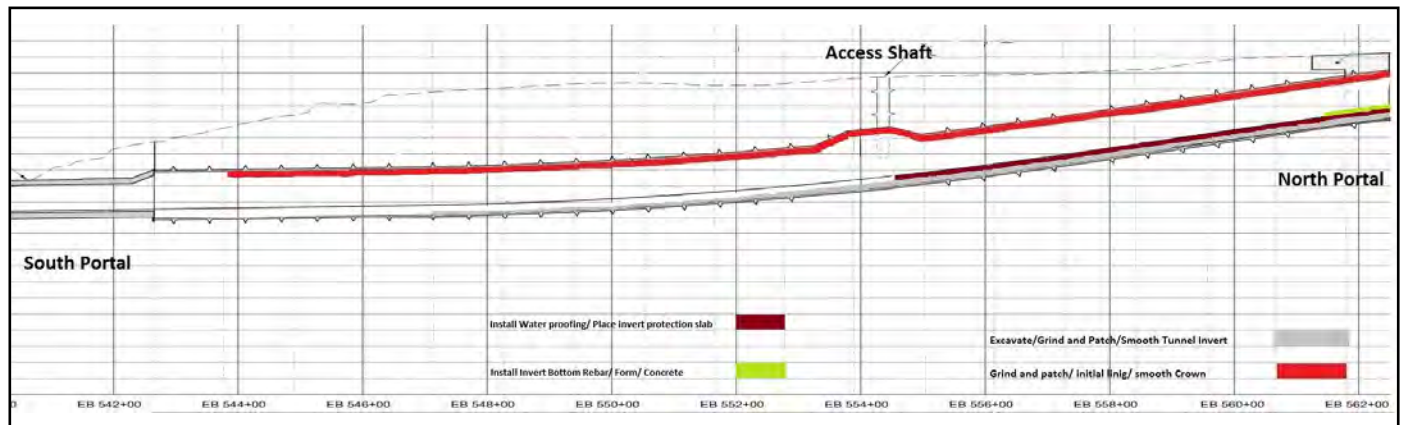
Next Period's Activities

- **Tunnel invert** : Continue installing rebar dowels in invert and grind tights, invert waterproofing and protection layer. Continue rebar and concrete placement.
- **Tunnel Crown**: Complete applying smoothing layer and patching on crown.
- **Between Portals**: Complete demobilizing from the site for the winter.
- **South Portal**: Continue demobilizing the batch plant, continue material deliveries.

Closely Monitored Issues

- City of Bellevue issued additional permits for tunnel installation for the electrical and fire alarm conduits. The additional requirements will result in increased cost to ST. A condition of the electrical permit requires ST provide an Engineering Judgment from the manufacturer for means to achieve a 2-hour fire rating for the MV/LV handholds in the tunnel.
- Tunnel water seepage is a continued risk. The installation of drainage matting yielded a dry surface in most of the tunnel. Seepage through the tunnel substrate has impacted the waterproofing within the tunnel. This issue will continue and will be migrated throughout construction.

E330 Tunnel invert excavation/ place crown smoothing layer (As of 11/30/2018)



Cost Summary

Preset Financial Status	Amount
E330 Contractor– Guy F Atkinson Construction, LLC.	
Original Contract Value	\$121,446,551
Change Order Value	\$340,876
Current Contract Value	\$121,787,427
Total Actual Cost (Incurred to Date)	\$92,932,733
Percent Complete	73.4%
Authorized Contingency	\$12,144,655
Contingency Drawdown	\$340,876
Contingency Index	26.1



Mud slab poured on west half of South Portal cut-and-cover.

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

Current Progress

Area 3: N Portal/ City Of Bellevue parking: Commenced reinforcing steel placement for center wall and continued concrete placements for exterior wall at the cut-and-cover structure. Completed Cast In Place walls and commenced backfill CIP walls and abutment and plumbing adjacent to abutment at Bellevue Downtown Station.

Area 4: Aerial Guideway: Completed concrete placement for stem walls over I-405. Continued work on aerial guideway such as: placed resteel for deck and concrete for diaphragm and curbs, framed overhang and soffit.

Area 5: Pine Forest: Commenced form work and reinforcing traffic barriers and installed utility hangers and casing on 123rd Ave Bridge.

Area 6: 120th-124th Trench/Station: Continued formwork for the 120th Station platform and exterior walls. Placed concrete for the platform slab and north side platform walls.

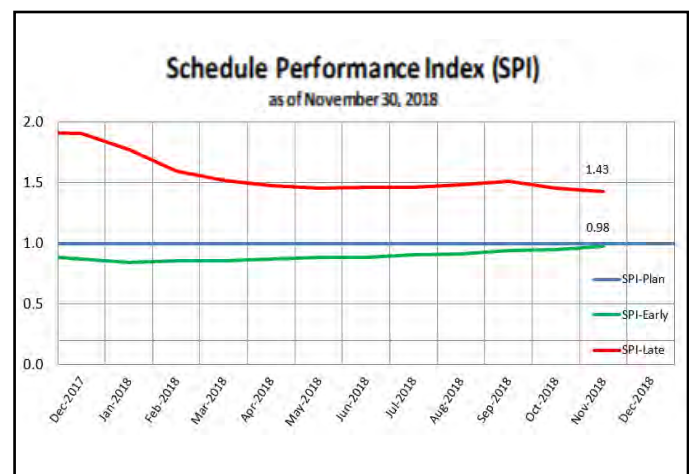
Schedule Summary

There are two primary critical paths for this contract, corresponding to the two handovers to the E750 Systems Contractor — one runs through the North Portal and BTC station work in Area 3, 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. That work will not start until mid-2020. The Contractor is currently 8 days behind their first interface milestone, but is expected to continue mitigating to deliver on schedule.

Activity Name	Start	Finish	2019	2020
E335 Construction	24-Apr-17 A	16-May-21		
Milestones	04-May-18 A	16-May-21		
Contract Milestones	30-Sep-18 A	16-May-21		
Milestone #1 - C complete North Portal Headwall Temporary Shoring		30-Sep-18 A		
Milestone #2 - C complete SDTs for Interface to SCADA		14-Jan-20*		
Milestone #3 - C complete Trackway and Stations for Primary Systems Access - BTC to EOP		13-May-20*		
Milestone #4 - C complete SEM Tunnel Trackwork for Primary Systems Access		16-Jan-21*		
Milestone #5 - C complete All Trackway and Stations for Primary Systems Access		16-Mar-21*		
Milestone #6 - Substantial Completion of all Work		16-May-21*		
Calculated Milestones	04-May-18 A	29-Apr-21		
E335 Achieves Milestone #1		04-May-18 A		
E335 Achieves Milestone #2		13-Jan-20		
E335 Achieves Milestone #3		21-May-20		
E335 Achieves Milestone #4		20-Jan-21		
E335 Achieves Milestone #5		14-Mar-21		
E335 Achieves Milestone #6		29-Apr-21		
Construction	24-Apr-17 A	30-Mar-21		
Mobilization	24-Apr-17 A	24-Apr-17 A		
Area 1: E. Main Station to South Portal (531+55 - 538+00)	11-Oct-17 A	30-Mar-21		
Area 2: South Portal to SEM Tunnel (538+00 - 562+47.91)	01-Dec-18	30-Mar-21		
Area 3: North Portal to Aerial Guideway (562+50 - 568+45)	24-Apr-17 A	30-Mar-21		
Area 4: Aerial Guideway (568+45 - 606+59)	24-Apr-17 A	30-Mar-21		
Area 5: Pine Forest to 120th (606+59 - 619+00)	07-Jul-17 A	30-Mar-21		
Area 6: 120th - End of Project (619+00 - 634+99)	01-Aug-17 A	20-Apr-20		
Testing and Commissioning	21-Jan-20	16-Dec-20		

Schedule Performance Index

This period, the SPI early is at 0.98 and the SPI late is at 1.43. The contractor continues to lag the early plan, but well ahead of the late finish plan when compared to the baseline work. Numbers are supported by the fact that major portion of the new Sturtevant Creek channel construction and road work at many intersections has not started as shown in the baselined schedule. Installation of emergency guardrail and acoustical panels on the aerial guideway and procurement/ delivery of pre-cast girders and track materials are behind compared to the baseline.



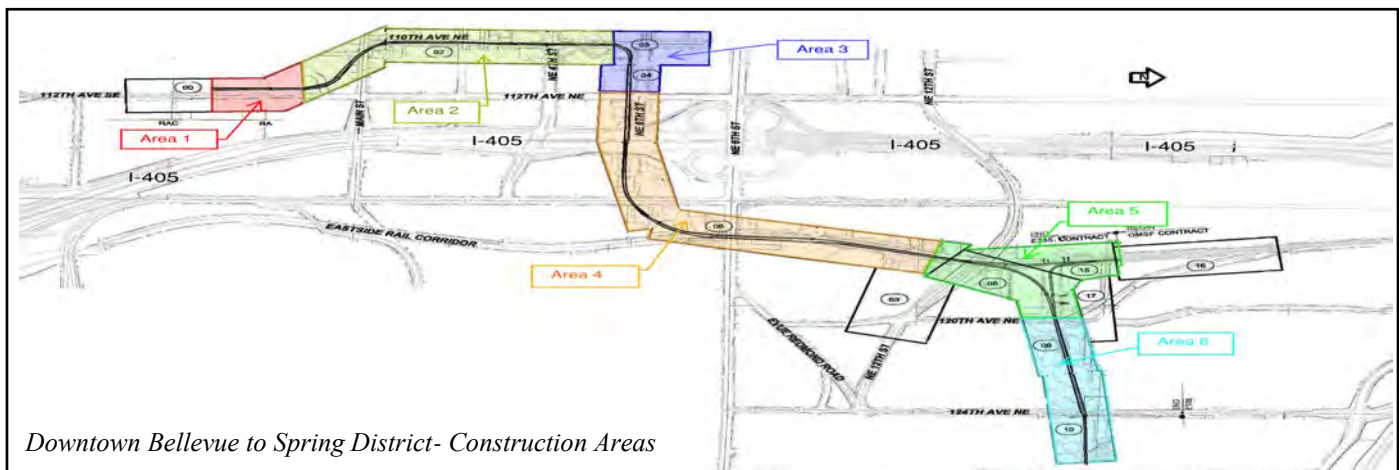
Link Light Rail East Link Extension

Next Period's Activities

- **Area 1:** S Portal/ East Main Station: Continue curb and hardscape installation for the East Main northbound kiss-and-ride.
- **Area 3:** N Portal/ City Of Bellevue parking: Continue rebar and concrete placements center wall for the cut-and-cover structure. Continue install formwork, reinforcing and backfill walls at Bellevue Downtown Station.
- **Area 4:** Aerial Guideway: Continue formwork, reinforcing and concrete placement on aerial guideway and remove some of the false works.
- **Area 6:** 120th-124th Trench/Station: Continue formwork interior/exterior walls and place concrete for the platform slab at 120th Station platform.

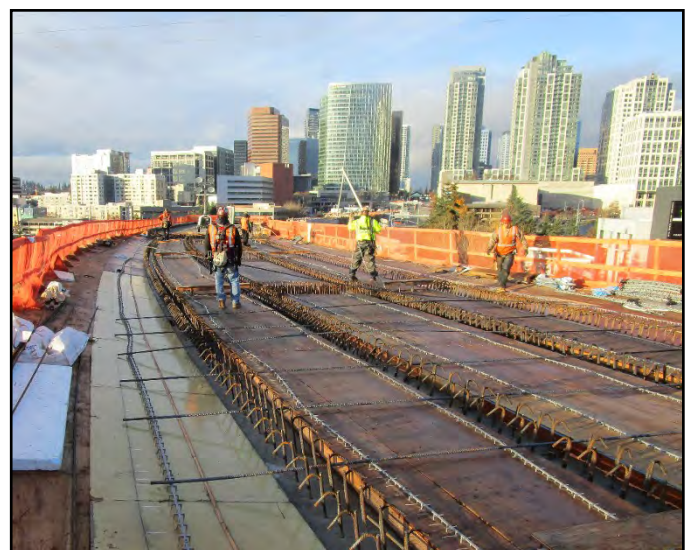
Closely Monitored Issues

- Completion of the undercrossing at 124th Avenue NE is delayed by challenges to Sound Transit's condemnation process from Seattle City Light and City of Bellevue's 124th Ave bridge and roadway impacts to SCL's utility easement. ST, SCL, and COB are negotiating a 3-party settlement agreement. Timeline for 3-party agreement delayed to end of December. To reduce schedule and cost impacts ST and SCL are negotiating an "early work" consent.
- Outstanding design issue related to the electrical/comm. scope at 120th Station being evaluated for impact. Design revisions are also ongoing related to the elevator/escalator scopes that could pose a risk to the schedule.



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	\$5,421,862
Current Contract Value	\$399,220,072
Total Actual Cost (Incurred to Date)	\$153,812,035
Percent Complete	48.8%
Authorized Contingency	\$19,689,911
Contingency Drawdown	\$5,421,862
Contingency Index	1.8



Track slab rebar installation Aerial Guideway (Area 4)

Contract E340 – Bel-Red

Current Progress

Ongoing closure at NE Spring Blvd (132nd Ave to 134th Ave). Aerial Guideway: resumed forming end diaphragms; evaluated intermediate diaphragms. South-side station retaining wall: forming for next wall pour; 5 of 13 panels have been placed to date. Spring Blvd Wall: 4 of 5 footing sections and 8 of 13 wall panels are completed to date. Installed false decking, form & pour girder stops, and form guideway OCS (Overhead Catenary System) and overhangs. Continued sanitary sewer installation and placement of PSE Gas Main on 136th Place NE. Continued placing conduit for the signal at 132nd Ave NE. Placed storm drain on NE Spring Blvd.

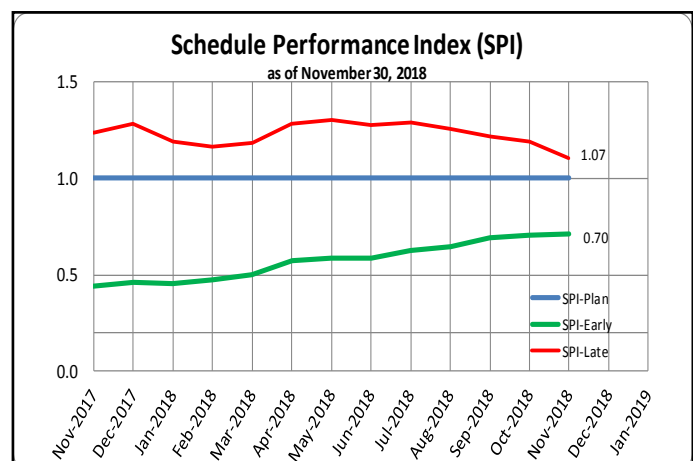
Schedule Summary

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					
			Q4	Q1	Q2	Q3	Q4	Q1
E340 Construction	24-Feb-17 A	16-Apr-20						
CONSTRUCTION	24-Feb-17 A	16-Apr-20						
~MILESTONES/EASEMENTS~	24-Feb-17 A	16-Apr-20						
~~ Milestones	24-Feb-17 A	16-Apr-20						
Contract Milestones	24-Feb-17 A	16-Apr-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)		08-Feb-19*						
MS #3 Acceptance of SDIT- NTP + 976 DAYS - (Nov 27, 2019)		21-May-19*						
MS #4 Substantial Completion - NTP + 1156 DAYS - (May 26, 2020)		16-Apr-20*						
~SUBMITTALS/PRELIMINARY ACTIVITIES~	24-Feb-17 A	30-Jun-19						
~MOBILIZATION~	24-Feb-17 A	14-Feb-19						
~SITWORK~	04-Apr-17 A	16-Mar-20						
~RETAINING WALLS~	12-Feb-18 A	30-Jul-19						
~AERIAL STRUCTURES~	15-May-17 A	12-Jul-19						
~STATIONS~	01-Aug-18 A	13-Nov-19						
~ELECTRICAL/ITS~	02-Jan-18 A	01-May-19						
~FINISHES~	03-Dec-18	22-Jul-19						
~TRACKWORK~	13-Jul-18 A	26-Nov-19						
~LANDSCAPING/FLATWORK~	22-May-18 A	18-Feb-20						
~TESTING AND COMMISSIONING~	22-Feb-19	16-Sep-19						

Schedule Performance Index

This period, the SPI early is at 0.70 and the SPI late is at 1.07. The late index indicates that the contractor continues to be ahead of the planned finish work; while the SPI early measures the Contractor's planned early finish lags. Some of the contributing factors to the SPI late index are the continued progress of the retaining wall as well as aerial guideway superstructure constructions, continued sanitary sewer work on 136th Pl. working from north to south, progressed on PSE gas installation on 136th Pl., progressed on the signal conduit installation at the 132th track crossing.



Link Light Rail East Link Extension

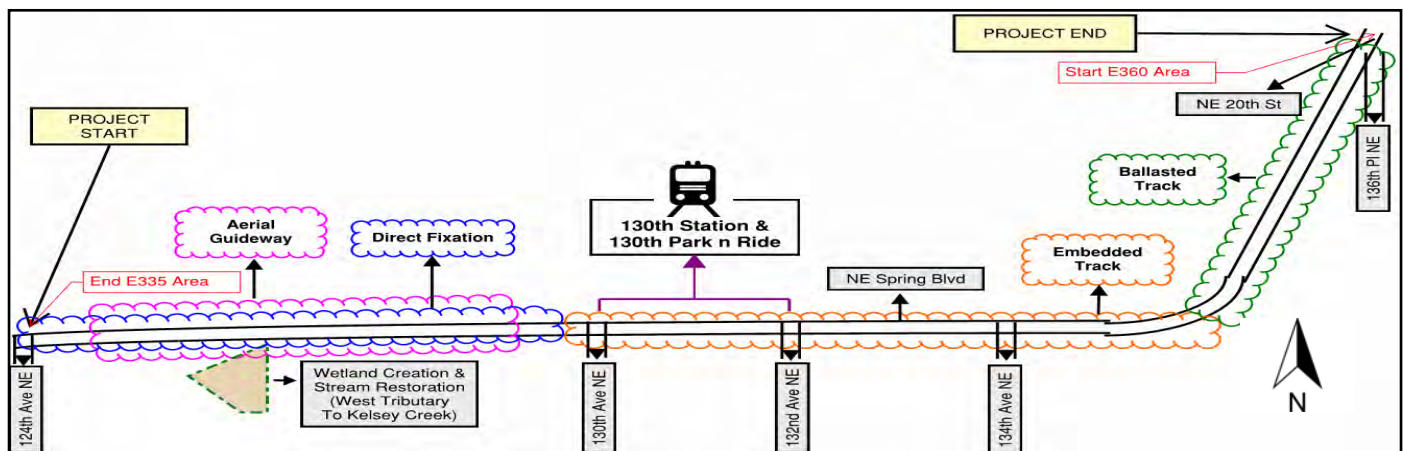
Next Period's Activities

- For the aerial guideway, continue forming and pouring end diaphragms. Evaluate intermediate diaphragms.
- Continue forming and pouring wall panels at NE Spring Blvd. Resume placement of final footing section.
- Continue forming and pouring wall panels at south-side station retaining wall.
- Storm Drain installation on 136th PI NE.
- Continue placing conduit for the signal at 132nd Ave NE. Begin placing pad for Signal Cabinet.
- Continue placing conduit from 130th utility yard to stair tower.

Closely Monitored Issues

- Delayed start on west end of the project: West Tributary, Mid-Lakes Pump Station and late start on the 124th Ave Bridge project has potential to impact to the overall project schedule.
- Working with the Contractor to determine a path forward on the differing site conditions relative to tie-backs on Soldier Pile Wall 11 between 124th NE to 130th NE. Installed a monitoring well to observe the water table and conditions.
- Working with the Contractor and Third Party Utilities to identify and find remedies for utility conflict prior to these conflicts affecting the work schedule.

E340 Construction Work Areas



Cost Summary

Present Financial Status	Amount
E340 Contractor– Max J Kuney	
Original Contract Value	\$93,170,012
Change Order Value	\$2,722,121
Current Contract Value	\$95,892,133
Total Actual Cost (Incurred to Date)	\$44,856,711
Percent Complete	46.5%
Authorized Contingency	\$9,317,000
Contingency Drawdown	\$2,722,121
Contingency Index	1.6



Installing OCS support forms on east bound span.

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

Current Progress

Design: Advanced design packages for the following areas: Kiewit Hoffman (KH) submitted IFC for OVS Ped Bridge Architecture Drawings and is currently being reviewed by ST. Landscaping - Guideway IFCE submittal preparation and SR520 Permanent Roadway 100% comment resolution are ongoing.

Construction: Work Area (WA) #2 Aerial guideway structures work continued with two columns, and two caps placed. 35/35 shafts, 31/31 columns, and 30/31 caps. Girder erection resumed with four spans set. Superstructure work for diaphragms and precast panels continues. First deck and curb span poured. WA #3/4/5 continues MSE wall backfill, sound/barrier wall placement and backfill starting at OVS and working towards Redmond Technology Station (RTS) (walls 16 and B6). OCS pole foundation and system duct bank ongoing. WA #5 start wall B4 and continue OCS pole and systems duct bank installation. WA #6 continued wall construction for RTS station walls and continue OTC Garage columns and deck/beams. M/E/P rough-in ongoing. WA #7 OVS Pedestrian Bridge foundations ongoing with footing and column construction at east/west abutments and 520 median.

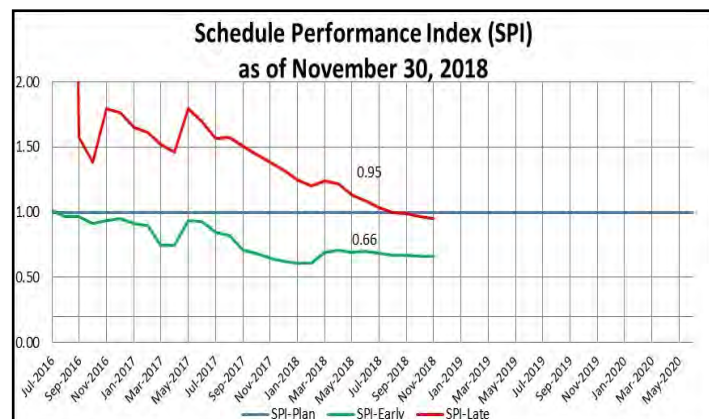
Schedule Summary

The critical path for this project currently goes through the structural work at Redmond Technology Station (formerly Overlake Transit Center). The contractor is currently forecast to complete this contract on schedule.

Activity Name	Start	Finish	2019
			Q4 Q1 Q2 Q3 Q4 Q1
E360 Construction	13-Jul-16 A	16-Feb-20	
Base Contract	13-Jul-16 A	16-Feb-20	
Design	13-Jul-16 A	15-Mar-19	
Construction	13-Jul-16 A	16-Feb-20	
General	13-Jul-16 A	16-Feb-20	
Project Milestones	13-Jul-16 A	16-Feb-20	
Notice to Proceed	13-Jul-16 A		
Civil/Systems 100% Design Submittal (NTP+300d) (09-May-2017)		10-Apr-17 A	
Substantial Completion		18-Dec-19	
Actual Acceptance of all Work		16-Feb-20	
WA #1 -Track Slab Guideway	22-May-17 A	11-Nov-19	
WA #2 -Aerial Guideway	01-Jun-17 A	19-Nov-19	
WA #3 -Ballasted Guideway Block #1	08-Jun-17 A	03-Oct-19	
WA #4 -Overlake Village Station	14-Jul-18 A	20-Nov-19	
WA #5 -Ballasted Guideway Block #2	15-Aug-17 A	11-Oct-19	
WA #6 -Overlake Transit Center	01-May-17 A	18-Dec-19	
WA #7 -OVS Pedestrian Bridge	01-Oct-18 A	19-Nov-19	
WA #8 -OTC Pedestrian Bridge	18-Dec-19	18-Dec-19	

Schedule Performance Index

This period, the SPI early is 0.66 and SPI late is .95. 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 has contributed to the slippage as well. Drilled shaft work is complete, column work is complete, and 1 cap is left. Some procurement activities have been rolled into construction activities, which has contributed to lowered late SPI recovery.



Link Light Rail East Link Extension

Next Period's Activities

- **Work Area #1:** No activity planned.
- **Work Area #2:** Final cap placement and continue diaphragm placement, precast panel set and deck/curb placement. Girder erection to resume in January.
- **Work Area #3/4:** Continue MSE abutment wall, sound station wall and OCS foundation placement.
- **Work Area #5:** Continue construction of footings/walls for track wall B6 and 16. Continue OCS placement. Duct bank placement ongoing. Start fine-grade activity.
- **Work Area #6:** Continue VCT & flyer stop foundation, garage column and deck placement. M/E/P rough-in.
- **Work Area #7:** Start forming abutment walls, wing walls and pier caps.

Closely Monitored Issues

- Microsoft designs for an alternative pedestrian bridge. Contract amendment will be required if pursued.
- 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, Wall S8 DSC, and As-Built Specification.
- Clearance requirements between the WSDOT Aggregate Disposal Site access road and aerial guideway.
- Submittal content, timeliness and completion of Construction Work Plans.

E360 Construction Work Areas



Cost Summary

Present Financial Status	Amount
E360 Contractor— Kiewit-Hoffman	
Original Contract Value	\$225,336,088
Change Order Value	\$1,448,848
Current Contract Value	\$226,784,936
Total Actual Cost (Incurred to Date)	\$119,335,625
Percent Complete	65.3%
Authorized Contingency	\$23,071,580
Contingency Drawdown	\$1,448,848
Contingency Index	8.8

Excludes Betterment



Redmond Technology Station Site Construction.

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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	Preliminary Design
Budget	\$178M through completion of Preliminary
Schedule	Revenue Service: 2024



Map of Downtown Redmond Link Extension

Key Project Activities

- Completed review of design-build statements of qualifications and conducted interviews.
- Continued drafting of RFP for the Design Build contract package for DRLE.
- Continue pursuit of resolution to storm water design requirements within Marymoor Park.
- Continue pursuit of cost responsibilities for transit integration facilities requested by King County.
- Initiated development of O & M agreement to identify responsibilities for both stations.
- Reached agreement on project permitting plan with the City of Redmond - Project Administration Agreement approved by ST Board.
- Submitted Joint Aquatic Resources Permit Application (JARPA) to the US Army Corp of Engineers and Department of Ecology.
- Continued environmental due diligence investigation on ROW parcels.

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 \$0.9M of expenses bringing the total expenditure to date from \$23.6M to \$24.5M. Preliminary Engineering and Administrative activities are the main cost drivers during this period. Agency Administrative activities are primarily staffing cost.

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	\$4.6	\$4.5	\$77.0	\$0.0
Preliminary Engineering	\$23.0	\$23.0	\$17.9	\$16.3	\$23.0	\$0.0
Final Design	\$4.5	\$4.5	\$0.0	\$0.0	\$4.5	\$0.0
Construction Services	\$58.0	\$58.0	\$1.7	\$0.5	\$58.0	\$0.0
3rd Party Agreements	\$17.0	\$17.0	\$0.3	\$0.4	\$17.0	\$0.0
Construction	\$1,151.5	\$1,151.5	\$0.0	\$0.0	\$1,151.5	\$0.0
Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$199.0	\$199.0	\$8.0	\$2.8	\$199.0	\$0.0
Total	\$1,530.0	\$1,530.0	\$32.6	\$24.5	\$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	\$198.9	\$198.9	\$8.0	\$2.8	\$198.9	\$0.0
70 Vehicles (Non-Revenue)	\$4.1	\$4.1	\$0.0	\$0.0	\$4.1	
80 Professional Services	\$289.3	\$289.3	\$24.6	\$21.7	\$289.3	\$0.0
90 Unallocated Contingency	\$47.8	\$47.8	\$0.0	\$0.0	\$47.8	\$0.0
Total (10 - 90)	\$1,530.0	\$1,530.0	\$32.6	\$24.5	\$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 of towards the anticipated 4th QTR 2018's baselining of the project. The quantitative risk assessment report is completed and finalized with good probability that supported the DRLE baseline cost and schedule assumptions.

The highest risk areas continues to be:

- 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. In November, the Sound Transit Board approved the baseline budget and schedule. Property acquisitions have begun. The RFP is anticipated to be issued in November. Project is currently forecast for completion near the end of 2024.

Activity Name	Start	Finish												
			2019	2020	2021	2022	2023	2024						
Downtown Redmond Link Extension - Preliminary Engineering	15-Dec-18 A	12-Feb-20	■	■										
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	01-Jun-24	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	0	0	1514	0
* All numbers are cumulative totals, except where noted. Number of totals may differ from other reports due to the timing of reporting periods.					

- R2018-38 increased Board Approved by 23 parcels.
- Total Acquisitions was increased by 1 parcel needed for the project as a result of modifications to the project since the 2011 Record of Decision (ROD).

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.

Sound Transit Board Actions

Board Action	Description	Date
M2018-154	Execute agreement with the City of Redmond for project administration services to provide expedited permitting, design review, and construction support services for the Downtown Redmond Link Extension in the lump sum amount of \$5,711,933	11/15/2018

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),



Map of Project Alignment

Key Project Activities

- Continued technical work required to support Level 3 alternatives evaluation and screening.
- 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 coordination with FTA regarding alternatives evaluation and screening. Initiated review of Draft Notice of Intent and Purpose and Need in advance of environmental scoping in early 2019.
- Briefed Stakeholder Advisory Group and Elected Leadership Group on Level 3 alternatives, evaluation process and criteria.
- Initiated development of consultant Scope of Work for Phase 2 (Draft EIS / Conceptual Engineering).
- Continued outreach to neighborhood and stakeholder groups throughout the project corridor.
- Continued collaboration with the city of Seattle on Racial Equity Toolkit outreach and evaluation, with primary focus on the Chinatown/International District and Delridge.
- Initiated data gathering and development of evaluation methodology for RapidRide C and D Improvements, and coordination with King County Metro and Seattle Department of Transportation.

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, it is anticipated that the project would incur approximately \$25M in 2018 for alternatives development and evaluation; conducting feasibility studies on key project scope assumption in the ST3 Plan, 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	\$5.0	\$4.5	\$63.1	\$0.0
Preliminary Engineering	\$205.4	\$24.5	\$17.2	\$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	\$0.0	\$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	\$0.1	\$0.1	\$6.0	\$0.0
Total	\$285.9	\$30.7	\$21.9	\$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	\$0.1	\$0.1	\$5.0	\$0.0
80 Professional Services	\$263.4	\$30.6	\$21.7	\$263.4	\$0.0
90 Unallocated Contingency	\$17.5	\$0.0	\$0.0	\$17.5	\$0.0
Total (10 - 90)	\$285.9	\$30.8	\$21.9	\$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.

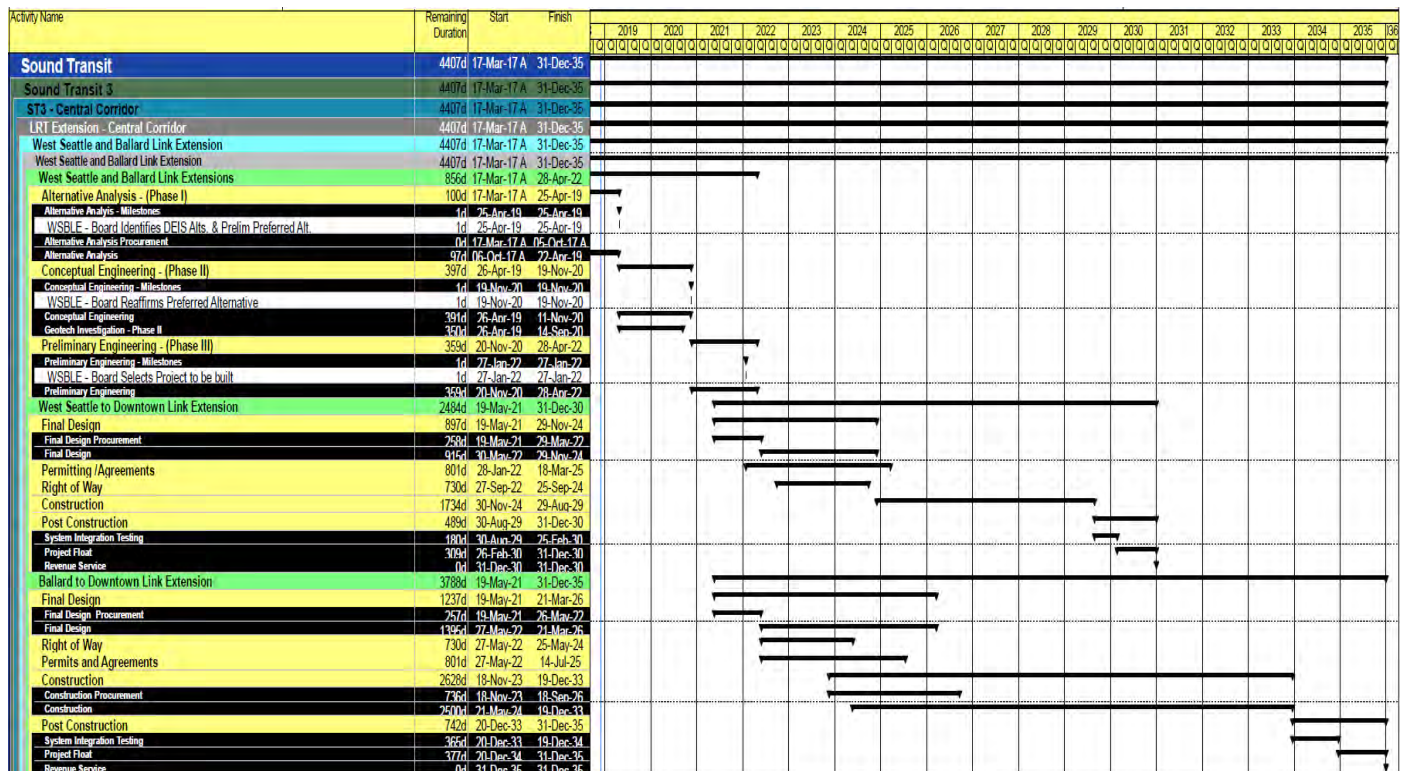
Project issues and risks identified at this stage include:

- 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 through the ST Board selection of the project to be built and FTA issuance of ROD is presented below. Sound Transit is developing the master project schedule in Primavera P6, which is supported by a detailed schedule of Phase 1, Alternatives Development, created by the project development consultant.

Final Design is expected to begin in 2022.



Community Outreach

- Continued outreach to neighborhood and stakeholder groups throughout the project corridor.
 - Continued collaboration with the city of Seattle on Racial Equity Toolkit outreach and evaluation, with primary focus on the Chinatown/International District and Delridge.
-

Sound Transit Board Actions

Board Action	Description	Date
	None to Report	

Link Light Rail

S. 200th Link Extension

Project Summary

Scope

Limits	South 200th Link Extension consists of 1.6-mile extension of light rail from the SeaTac/Airport Station to South 200th Street
Alignment	The extension continues in an aerial configuration heading south of the existing SeaTac/Airport Station, east of Air Cargo Road across South 188th Street, and continuing south along the east side of 28th Avenue South to the elevated Angle Lake Station located at South 200th Street. A passenger pickup/drop-off area, bus transfer, plaza, and a minimum 1,050-space structured park and ride facility is located at Angle Lake Station. Up to 70 additional spaces were developed for interim parking while Angle Lake Station is the interim southern terminus of the Link system. Guideway/Station and Parking Garage/Plaza was delivered under a Design Build contract.
Stations	Angle Lake Station is located at South 200th Street
Systems	Signals, track electrification, and SCADA communications
Budget	\$383.2 Million
Schedule	Revenue Service began on September 24, 2016



Map of S. 200th Link Extension

Key Project Activities

- **Design Build (DB) Guideway and Station (S440):** Contract closeout and Final Acceptance are pending.
- **DB Parking Garage (S445):** Contractor to commence façade repairs this month until Q2 2019. Contract closeout and Final Acceptance are pending.
- **Military Road/South 200th Intersection (S446):** Contract completed.
- **Project Wide:** Conclude project activities by end of 2nd QTR 2019; ADA Ramp Agreement has been executed with City of SeaTac.
- CM is addressing minor rail grinding activity that will complete by end of 2018.

Closely Monitored Issues

- **S445:** Garage façade panels repairs are pending.

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 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	\$16.1	\$17.1	\$16.3	\$16.3	\$16.5	\$0.6
Preliminary Engineering	\$5.9	\$5.7	\$5.7	\$5.7	\$5.7	\$0.0
Final Design	\$20.0	\$9.5	\$8.7	\$8.7	\$8.7	\$0.8
Construction Services	\$15.1	\$17.3	\$17.3	\$17.1	\$17.3	\$0.1
3rd Party Agreements	\$6.9	\$7.1	\$5.7	\$3.8	\$3.8	\$3.3
Construction	\$275.7	\$282.9	\$240.0	\$238.9	\$242.5	\$40.4
Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$43.5	\$43.5	\$38.1	\$38.0	\$38.1	\$5.5
Capital Total	\$383.2	\$383.2	\$331.9	\$328.6	\$332.6	\$50.6
Finance Cost	\$0.0	\$0.0				
Project Total	\$383.2	\$383.2	\$331.9	\$328.6	\$332.6	\$50.6

The overall project Estimated Final Cost (EFC) for this period reflects \$332.6M, a savings projection of \$50.6M. This period incurred cost was increased by approximately \$0.3M, of this \$0.283M is mostly for ADA Ramp repairs and rail grinding permit fees in the Construction phase, and remainder minor expenses for ST staff time in Administration Phase.

The EFC grouped by SCC is also reflecting \$332.6M, a savings projection of \$50.6M. The work remaining can be achieved under the adopted budget.

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	\$144.8	\$133.0	\$100.4	\$100.3	\$108.0	\$25.0
20 Stations	\$46.4	\$51.7	\$42.1	\$42.1	\$42.4	\$9.4
30 Support Facilities: Yards, Shops	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$34.6	\$55.3	\$55.9	\$54.8	\$55.8	-\$0.5
50 Systems	\$30.8	\$19.9	\$20.4	\$20.4	\$20.4	-\$0.4
Construction Subtotal (10 - 50)	\$256.6	\$259.9	\$218.8	\$217.7	\$226.5	\$33.4
60 Row, Land, Existing Improvements	\$43.5	\$43.5	\$38.1	\$38.0	\$38.1	\$5.5
70 Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
80 Professional Services	\$64.1	\$72.5	\$75.0	\$72.9	\$66.3	\$6.2
90 Unallocated Contingency	\$19.0	\$7.3	\$0.0	\$0.0	\$1.8	\$5.5
Capital Total (10 - 90)	\$383.2	\$383.2	\$331.9	\$328.6	\$332.6	\$50.6
100 Finance Cost	\$0.0	\$0.0				
Project Total	\$383.2	\$383.2	\$331.9	\$328.6	\$332.6	\$50.6

Link Light Rail

S. 200th Link Extension



Cost Contingency Management

S. 200th Link Extension was baselined with a total contingency amount of \$75.6M. Overall the Total Contingency decreased by \$23.8M, resulting in a remaining balance of \$51.4M. During this reporting period, there was reduction of \$0.2M from allocated contingency. See below table for details.

Design Allowance (DA): N/A

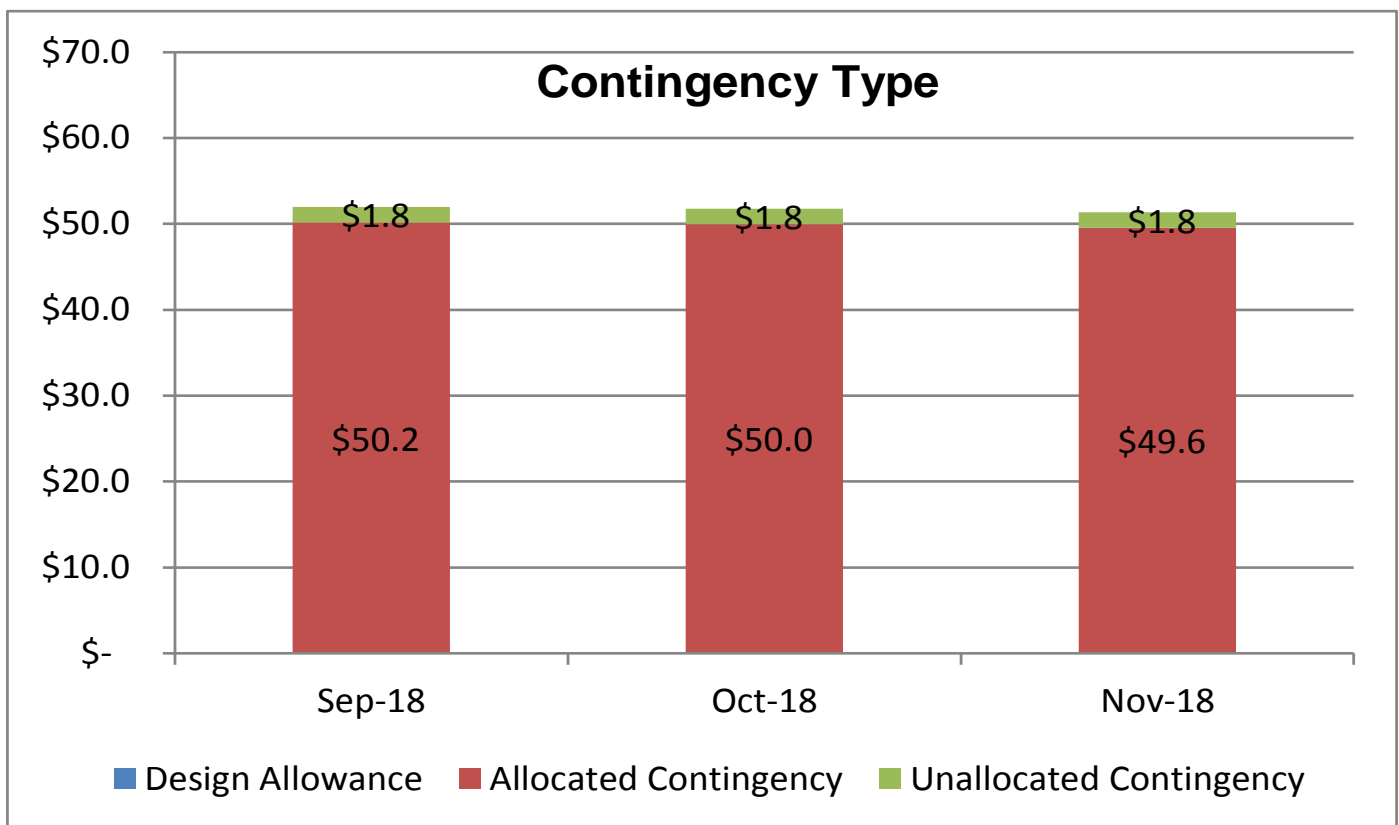
Allocated Contingency (AC): The AC balance is \$49.6M, reflecting a \$0.4M change due to rail grinding JOC contract acquired to address minor repairs.

Unallocated Contingency (UAC): This period the UAC balance is \$1.8M, reflecting no change.

Contingency Status

Contingency Type	Baseline		Current	
	Amount	% of Total	Amount	% of Work Remaining
Design Allowance	\$26.7	7.0%	\$ -	0.0%
Allocated Contingency	\$29.8	8.0%	\$49.6	1232.1
Unallocated Contingency	\$19.0	5.0%	\$ 1.8	44.8%
Total	\$75.6	20.0%	\$51.4	1276.9%

Table figures are shown in millions.



Contract S440—Design -Build (Guideway and Station)

Close-out Current Progress

- Contractor finalize closeout items.
- Contractor awaits Final Acceptance.

Next Period's Activities

- Issue Final Acceptance to Contractor.

Closely Monitored Issues

- None

Cost Summary

Present Financial Status	Amount
S440 Contractor—PCL Civil Contractors, Inc	
Original Contract Value	\$169,000,000
Change Order Value	7,112,438
Current Contract Value	\$176,112,438
Total Actual Cost (Incurred to Date)	\$176,112,438
Financial Percent Complete	100%
Physical Percent Complete	100%
Authorized Contingency	\$13,520,000
Contingency Drawdown	\$6,407,562
Contingency Index	1.9

Contract S445—Design -Build Parking Garage

Close-out Current Progress

- Contractor finalizing closeout item; garage facade repairs. Repairs continue this period.

Next Period's Activities

- Continue façade repairs until Q2 2019.
- Final Acceptance to Contractor is pending.

Closely Monitored Issues

- The Contractor needs to repair garage façade panels.

Cost Summary

Present Financial Status	Amount
S445 Contractor—Harbor Pacific/Graham.	
Original Contract Value	\$29,978,000
Change Order Value	\$2,607,828
Current Contract Value	\$32,585,828
Total Actual Cost (Incurred to Date)	\$32,582,606
Financial Percent Complete	100%
Physical Percent Complete	100%
Authorized Contingency	\$2,798,240
Contingency Drawdown	\$2,607,828
Contingency Index	1.0

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

- Working with PMOC/FTA on Entry to Engineering (EIE) readiness follow up recommendations; await EIE approval.
- Project preparing for Full Funding Grant Agreement (FFGA).
- Project team continues with one-on-one and supplemental meetings with short listed DB teams, and responding to RFI's.
- Project team continues to review ATCs from DB proposers.
- Advanced demolition contract was cancelled and then re-advertised again.
- WSDOT Construction Funding Agreement pending execution.
- Coordination continues with WSDOT regarding the Air Space Lease (ASL) and Temporary Construction Air Space Lease (TCAL) and requires Board approval sometime in 2018; contingent on execution of Construction Funding Agreement.
- ST Board approval occurred this period for City of Kent: Transitway and Development Agreements.
- Continued working with remaining cities (FW and SeaTac) to finalize Development and Transit way agreements.
- Continue preparing for advanced utility relocations agreements with Century Link and Puget Sound Energy.
- Continued ROW acquisition and relocation activities; significant increase of completed appraisals this period.
- Volume of residential relocations continue to be a concern due to limited housing availability.

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 the Sound Transit Board approved the Project Baseline scope, schedule and budget which is reflected in the tables below. Approximately \$2.7M was incurred, of which \$1.7M incurred was for Right-Of-Way; \$0.6M incurred for Administration; \$0.3 for Construction Services. The remaining expenditures were for Third Party and Preliminary Engineering services.

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	\$14.2	\$14.2	\$96.5	\$0.0
Preliminary Engineering	\$43.7	\$43.1	\$43.1	\$43.7	\$0.0
Final Design	\$3.1	\$0.9	\$0.8	\$3.1	\$0.0
Construction Services	\$107.0	\$4.6	\$1.5	\$107.0	\$0.0
3rd Party Agreements	\$27.7	\$3.7	\$2.8	\$27.7	\$0.0
Construction	\$1,831.9	\$0.0	\$0.0	\$1,831.9	\$0.0
ROW	\$341.6	\$38.9	\$21.3	\$341.6	\$0.0
Total	\$2,451.5	\$105.3	\$83.7	\$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	\$523.0	\$0.0	\$0.0	\$523.0	\$0.0
20 Stations	\$318.9	\$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	\$558.4	\$0.0	\$0.0	\$558.4	\$0.0
50 Systems	\$153.8	\$0.0	\$0.0	\$153.8	\$0.0
Construction Subtotal (10 - 50)	\$1,559.4	\$0.0	\$0.0	\$1,559.4	
60 Row, Land	\$341.6	\$38.9	\$21.3	\$341.6	\$0.0
70 Vehicles	\$1.8	\$0.0	\$0.0	\$1.8	\$0.0
80 Professional Services	\$370.7	\$66.5	\$62.5	\$370.7	\$0.0
90 Unallocated Contingency	\$178.1	\$0.0	\$0.0	\$178.1	\$0.0
Total (10 - 90)	\$2,451.5	\$105.3	\$83.7	\$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. Real Estate 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 last period. FFGA submittal is expected in 1st QTR 2019.

Revenue Service expected in 4th QTR 2024.

Activity Name	Remaining Duration	Start	Finish	2019	2020	2021	2022	2023	2024	25
Sound Transit	1587d	01-Jul-16 A	31-Dec-24							
Sound Transit 2	1587d	01-Jul-16 A	31-Dec-24							
South Corridor	2223d	01-Jul-16 A	31-Dec-24							
LRT Extension - South	2223d	01-Jul-16 A	31-Dec-24							
Federal Way Link Extension - Master - Design/Build	2223d	01-Jul-16 A	31-Dec-24							
Federal Way Link Extension - Master Schedule	2223d	01-Jul-16 A	31-Dec-24							
Milestones	1961d	27-Sep-18 A	31-Dec-24							
MS 01 - Baseline Project (Q3 2018) (08/23/2018)	0d		27-Sep-18 A							
MS 02 - NTP to Design/Build Contractor (Q3 2019) (08/20/2019)	0d		20-Aug-19							
MS 03 - ROW Acquisitions Complete (Q1 2020) (02/14/2020)	0d		26-Feb-20							
MS 04 - 50% Design/Construction Complete (Q4 2021) (*based on contract duration)	0d		24-Oct-21							
MS 05 - All Drilled Shafts/Foundations/MSE Walls Complete (Q1 2022) (6/02/2022)	0d		26-May-22							
MS 06 - Design/Build Contractor - Substantial Completion - (Q4 2023) - System Int	0d		01-Sep-23							
MS 07 - Revenue Service w/Float (Q4 2024)	0d		31-Dec-24							
Preliminary Engineering	100d	01-Jul-16 A	10-Mar-19							
Third Party Agreements and Permitting	813d	01-Jul-16 A	20-Feb-21							
Federal Way Link - Design-Build Construction Management Consultant - Contr	2223d	14-Nov-16 A	31-Dec-24							
Federal Way Design/Build Contract Procurement	262d	11-Mar-17 A	20-Aug-19							
Federal Way Link Extension - Design/Build Contract - Procurement	262d	11-Mar-17 A	20-Aug-19							
D/B RFQ Preparation	0d	11-Mar-17 A	11-Apr-18 A							
D/B Bid/Solicitation	262d	12-Apr-18 A	20-Aug-19							
RFQ Evaluation Phase	0d	12-Apr-18 A	20-Aug-19							
RFQ Evaluation and Selection	0d	12-Apr-18 A	20-Aug-19							
RFQ Award Phase	0d	12-Apr-18 A	20-Aug-19							
FWLE ROW Acquisitions	661d	10-Mar-17 A	21-Sep-20							
Federal Way Link Extension - Design Packages - D/B	328d	20-Aug-19	09-Dec-20							
Federal Way Link Extension - Construction - D/B	1796d	13-Oct-17 A	31-Oct-23							
Federal Way Link Extension - Rail Activation	1538d	01-Apr-18 A	31-Dec-24							
Rail Activation	1538d	01-Apr-18 A	31-Dec-24							
LRV Procurement/Manufacture/Delivery	1259d	01-Apr-18 A	05-Dec-23							
Pre-Revenue Service	60d	02-Sep-23	31-Oct-23							
Project Float	427d	01-Nov-23	31-Dec-24							
Revenue Service	0d	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 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. During this period no AC was utilized.

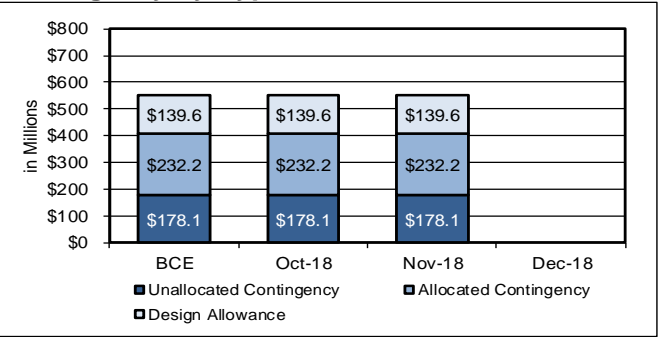
Unallocated Contingency (UAC) is used to address general project-wide cost risks and uncertainties. During this period no drawdown to UAC occurred.

Contingency Status (Monthly)

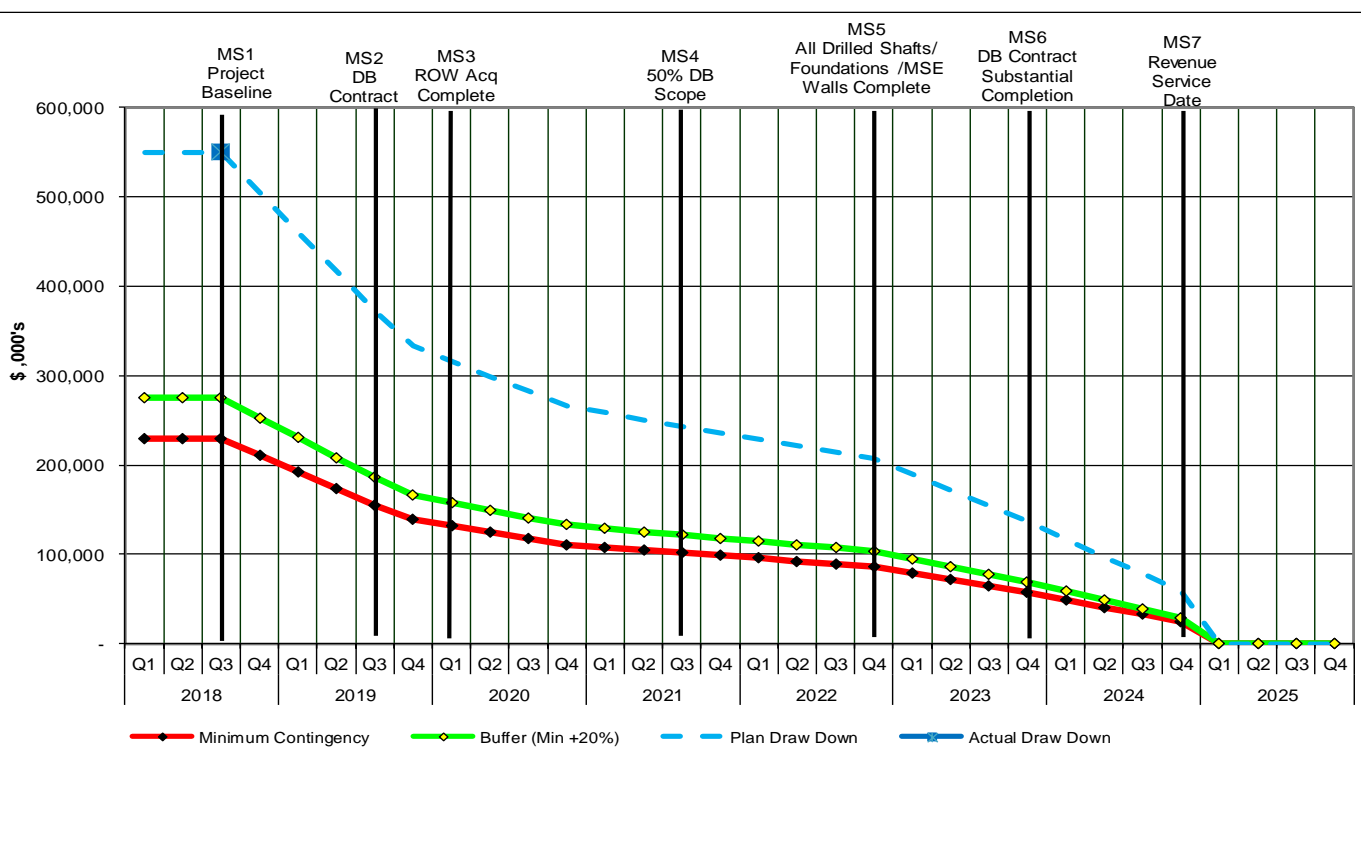
Type	Baseline		Current Status	
	Amount	% of Total Budget	Remaining Amount	% of Work Remaining
Design Allowance	\$139.6	5.7%	\$139.6	5.9%
Allocated Contingency	\$232.2	9.5%	\$232.2	9.8%
Unallocated Contingency	\$178.1	7.3%	\$178.1	7.5%
Total:	\$549.9	22.4%	\$549.9	23.2%

Table figures are shown in millions.

Contingency by Type



Contingency Drawdown (Quarterly)



Link Light Rail

Federal Way Link Extension

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
257	259	139	21	455	72
* All numbers are cumulative totals, except where noted. Number of totals may differ from other reports due to the timing of reporting periods.					

- Relocations impacts changed because some participants are no longer eligible due to occupant changes.

Community Outreach

- Communication with property owners regarding FWLE route, profile, station areas, acquisition and relocation is ongoing.
- Provided project updates at various outreach events:
 - South King County Mobility Coalition 11/8
 - Kent Providers Networking Meeting 11/15
 - Federal Way Public Health Managers 11/29
- Held Neighborhood Briefings for area residents
 - Heritage Court Condos, Des Moines 11/29



Neighborhood Briefing for Heritage Court Condos, Des Moines on 11/29

Sound Transit Board Actions

Board Action	Description	Date
M2018-147	Execute City of Kent Transit Way Agreement for the Federal Way Link Extension	11/15/18
M2018-148	Execute City of Kent Development Agreement for the Federal Way Link Extension	11/15/18

Phase 3 Preliminary Engineering (PE)

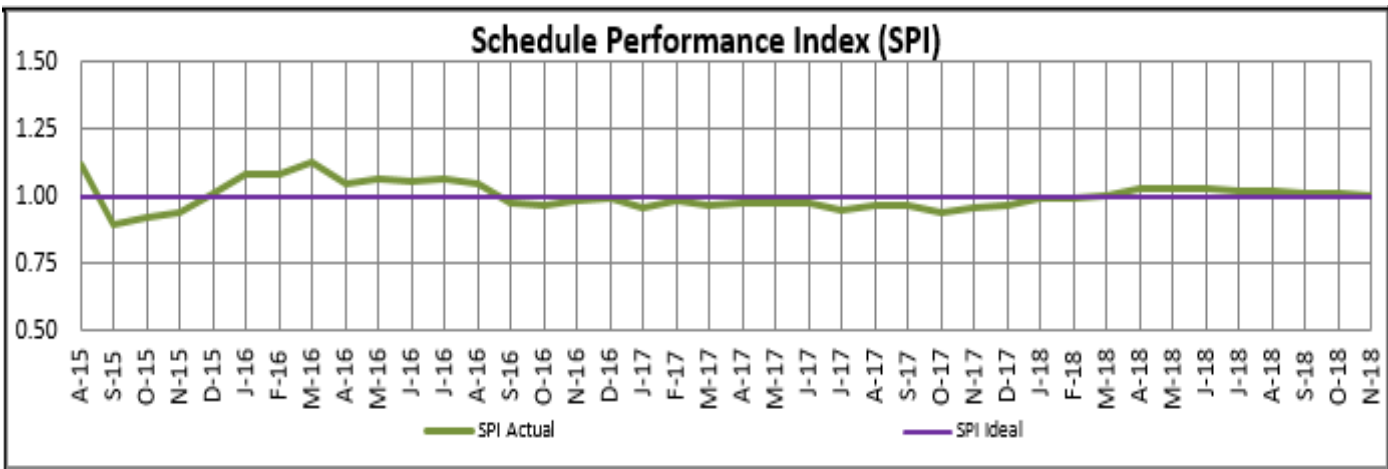
In July 2015, Sound Transit executed an amendment to the professional services agreement with HDR Engineering, Inc. for Phase 3 professional services, including completion of a Final Environmental Impact Statement (FEIS) using the preferred alternative and the other alternatives in the Draft EIS, preliminary 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

- Continued addressing review comments and responding to proposed design-builder RFIs.
- Efforts continued on the Development Agreements and TransitWay agreements with the AHJs(Authorities Having Jurisdiction).
- Continued environmental permitting effort including Critical Areas reports and JARPA (Joint Aquatic Resources Permit Application).
- Continued property acquisitions ,Permitting ,ESA (Environmental Site Assessments) , and Hazardous Building Materials Survey.

Schedule Performance Index

The cumulative Schedule Performance Index (SPI) is 1.00 through November 2018, indicating the overall amount of work accomplished is as planned. The consultant is fully engaged on the scope, to assist in DB contract RFI responses, environmental permit support and in ROW acquisition support.



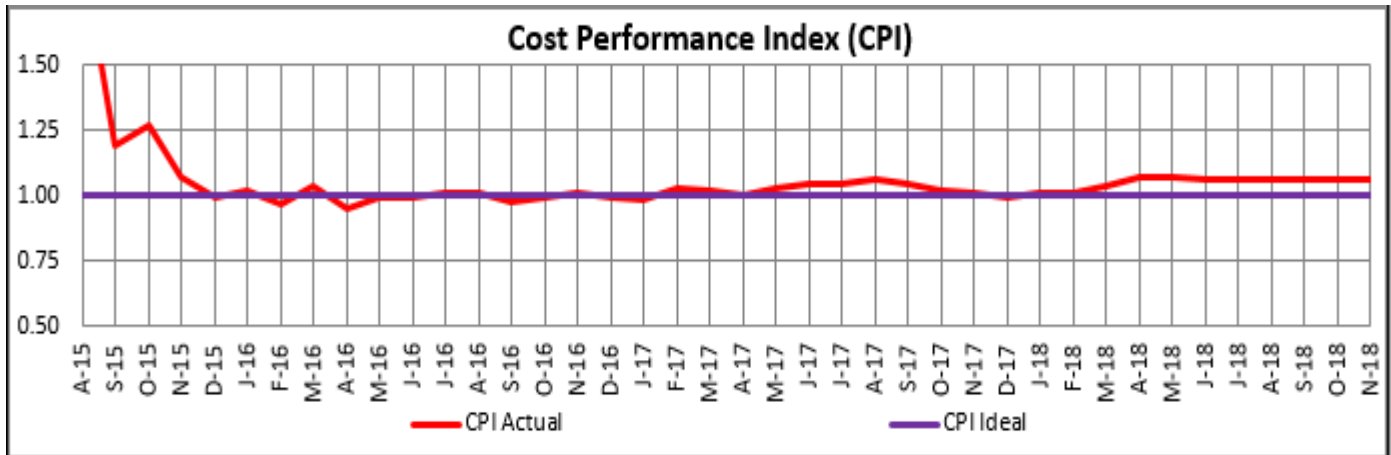
Link Light Rail

Federal Way Link Extension



Cost Performance Index

Phase 3 expenditures through November 2018 totaled \$34.7 M, approximately 93% of the amended total contract. The Phase 3 percent complete is reported at 98.8%, with an earned value of \$36.7. The cumulative Cost Performance Index (CPI) is 1.06 showing costs are on track with work accomplished. The Consultant is engaged in assistance of DB contract RFI response, environmental permits, support and in ROW acquisition support.



Cost Summary

Contract (Ph.3 portion)	Cumulative To-date
Amount Invoiced	\$34.7
% Spent	93.2%
Earned Value	\$36.7M
% Complete	98.8%
SPI	1.00
CPI	1.06

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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

- Project staff continued design conformance verification activities.

Construction:

- Contractor completed potholing along alignment to confirm utility locations and began storm, sanitary and waterline work in Heading 1 (Commerce St./Stadium Way to Division St.)
- Completed site preparation at OMF site and performed test pile drives in advance of production pile driving.
- Substantially completed third party advanced utility relocation work.
- The Hilltop Tacoma Link Ext. Groundbreaking event was held November 19 in People's Park.
- Provided advanced notification to community and key stakeholders regarding maintenance of traffic revisions at work zones along the alignment.

Right-of-Way

- Right-of-Way property acquisition activities continued as they relate to required temporary construction easements (TCE) along the alignment. Three parcels remain and are in final stages of City of Tacoma approval.

Vehicles

- Held monthly progress meeting with representatives from Brookville Equipment Corporation on Hilltop Tacoma Link Extension LRVs. ST staff and vehicle consultant reviewed vehicle subsystem design submittals.

Project Cost Summary

In September 2017, Sound Transit Board adopted the Hilltop Tacoma Link Extension 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 \$11.1M was incurred, of this most expenditures were due to \$10.5M for Construction related to the T100 construction contract and City of Tacoma Work Orders. ST continues to anticipate majority of expenditures for construction in 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	\$7.6	\$7.6	\$16.9	\$0.0
Preliminary Engineering	\$5.6	\$5.6	\$5.6	\$5.6	\$5.6	\$0.0
Final Design	\$10.8	\$10.8	\$10.4	\$9.3	\$10.8	\$0.0
Construction Services	\$9.9	\$9.9	\$8.9	\$1.0	\$9.9	\$0.0
3rd Party Agreements	\$1.5	\$1.5	\$1.3	\$1.1	\$1.5	\$0.0
Construction	\$127.2	\$129.2	\$114.6	\$11.0	\$129.2	\$0.0
Vehicles	\$35.4	\$33.7	\$31.2	\$0.8	\$33.7	\$0.0
ROW	\$3.6	\$3.2	\$2.1	\$1.8	\$3.2	\$0.0
Contingency	\$6.6	\$6.6	\$0.0	\$0.0	\$6.6	\$0.0
Total	\$217.3	\$217.3	\$181.7	\$38.1	\$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	\$21.6	\$20.5	\$10.5	\$21.6	\$0.0
20 Stations	\$1.8	\$2.7	\$2.3	\$0.0	\$2.7	\$0.0
30 Support Facilities	\$26.6	\$28.8	\$27.2	\$0.0	\$28.8	\$0.0
40 Sitework & Special Conditions	\$40.0	\$44.9	\$41.7	\$0.5	\$44.9	\$0.0
50 Systems	\$25.0	\$25.5	\$22.9	\$0.0	\$25.5	\$0.0
Construction Subtotal (10 - 50)	\$115.4	\$123.5	\$114.6	\$11.0	\$123.5	\$0.0
60 Row, Land	\$3.4	\$3.0	\$2.1	\$1.8	\$3.0	\$0.0
70 Vehicles (non-revenue)	\$34.1	\$34.1	\$31.2	\$0.8	\$34.1	\$0.0
80 Professional Services	\$48.4	\$48.7	\$33.8	\$24.5	\$48.7	\$0.0
90 Unallocated Contingency	\$16.1	\$8.1	\$0.0	\$0.0	\$8.1	\$0.0
Total (10 - 90)	\$217.3	\$217.3	\$181.3	\$38.1	\$217.3	\$0.0

Link Light Rail

Hilltop Tacoma Link Extension



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 Q3 2018 was held on September 12th. The Q4 2018 Risk Review is tentatively scheduled for December 12th 2018.

The Baseline Risk Assessment was conducted in May 2017. Per the Q3 2018 Register Review the current top project risks include:

- Unidentified utility conditions under the proposed alignment lead to schedule delays and increased cost.
- Utility relocation associated with the MLK Pedestrian undercrossing may require additional work than anticipated.
- Requirements and request from the City for UPO, MOT and property access lead to increased cost and schedule delays.

Contingency Management

Hilltop Tacoma Link Extension was baselined on September 2017 with a total contingency of \$33.9M. 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.

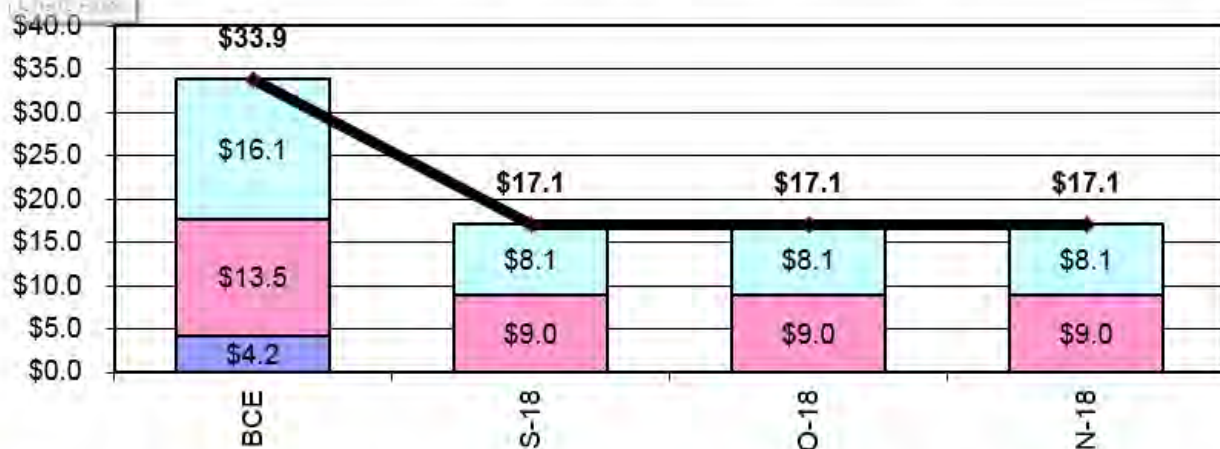
Unallocated Contingency (UAC) is used to address general project-wide cost risks and uncertainties. The UAC balance remained the same in October with a net amount of \$8.1M.

Contingency Status

Contingency Type	Baseline		Current	
	Amount	% of Total	Amount	% of Work Remaining
Design Allowance	\$4.2	2.2%	\$0.0	0.0%
Allocated Contingency	\$13.5	6.8%	\$9.0	5.0%
Unallocated Contingency	\$16.1	8.2%	\$8.1	4.5%
Total	\$33.8	17.2%	\$17.1	9.5%

Table figures are shown in millions.

Contingency by Type Histogram (\$ Millions)



■ Design Allowance
 ■ Allocated Contingency
 ■ Unallocated Contingency
 — Total Contingency

Project Schedule

The Master Schedule has been updated through the end of November 2018. Construction CPM baseline schedule has been approved and 1st monthly progress submittal is scheduled for early December 2018. The LRV procurement contractor continues submitting CDRLS (Contract Data Requirement Lists) packages in support of Preliminary Design Reviews (PDRs) scheduled in late 1st QTR 2019 and Final Design Review (FDR) completion in 3rd QTR 2019. Forecast delivery of the LRVs remains on target with first car arriving in early 2nd QTR 2020 and last car in 4th QTR 2020.

Activity ID	Activity Name	Start	Finish	2019				2020				2021				2022	
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Hilltop Tacoma Link Expansion - Current Master Schedule																	
A7340	Tacoma Link Expansion Duration	02-Feb-15 A	23-May-22														
Project Milestones																	
TLEMS001	MS-01 - Project Baseline		28-Sep-17 A														
TLEMS002	MS-02 - Construction Contract Award		27-Aug-18 A														
TLESC001	MS-03 - Submit Design & Delivery Schedule for the Automatic Vehicle Locator		21-Nov-18*														
TLEMS003	MS-01 - OMF & Yard Complete (Baseline Date Nov 21 2020)		04-Sep-20*														
TLEMS004	MS-04 - Systems Handover		21-May-21														
TLESC002	MS-02 - Substantial Completion of all work (Baseline Date May 29 2021)		29-May-21*														
TLEMS005	MS-05 Revenue Service Date		23-May-22														
Preliminary Engineering																	
Final Design																	
ROW & Third Parties																	
Owner Furnished Materials / Equipment Procurement																	
Owner Furnished Material																	
Comm Security/Fare Coll.																	
Light Rail Vehicles																	
A7820	TLE Light Rail Vehicles	18-Mar-16 A	29-Jan-21														
LRV - Bid Solicitation																	
Advertisement & Award																	
LRV - Manufacture & Delivery																	
Construction																	
Construction Management - Phase II																	
Construction Contract Procurement																	
General Project Startup																	
Heading 1 - 7th & Commerce to Stadium Way & Division																	
Heading 2A and 2B - Stadium Way & Division to Division and MLK																	
Heading 3 - Division and MLK & 19th																	
OCS Wire Runs																	
Train Signal System																	
Job Wide ITS																	
Operations and Maintenance Facility																	
Project Closeout/Punch List																	
Testing/Startup/Commissioning																	
Safety & Security Certification																	
SSQA Conformance																	

Link Light Rail

Hilltop Tacoma Link Extension



Critical Path Analysis

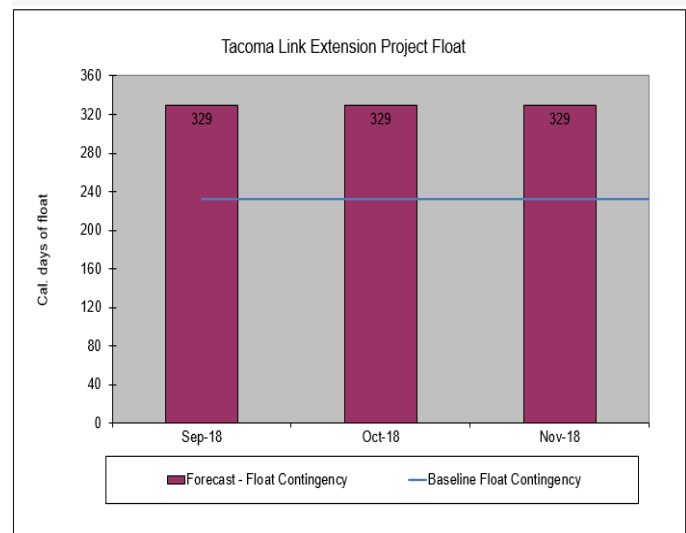
The critical path for Hilltop Tacoma Link for November 2018 runs through two paths , one path ties to the completion of Engineering CDRLS for LRV Section Design and Performance Criteria that are required as part of Preliminary Design Review (PDR) that must be approved before materials are ordered.

The second path ties to T100 Construction completing Utilities at Heading 2A and 2B , continuing into the utilities work at Heading 3 Division ST and MLK , with completing paving and landscaping to meet the MS 02 Substantial Completion of Work (Baseline date May 29 2021).

Activity ID	Activity Name	OD	RD	Start	Finish	2018	2019	2020	2021	2022
E02-C315	Complete CDRL 2-11	2.00	2.00	11-Dec-18	12-Dec-18					
E02-C320	Review CDRL 2-11	1.00	1.00	13-Dec-18	13-Dec-18					
E02-C325	Submit CDRL 2-11	0.00	0.00	13-Dec-18	13-Dec-18					
E02-C65	Complete CDRL 2-2	6.00	6.00	22-Jan-19	30-Jan-19					
E02-C70	Review CDRL 2-2	2.00	2.00	30-Jan-19	01-Feb-19					
E02-C75	Submit CDRL 2-2	0.00	0.00	01-Feb-19	01-Feb-19					
PDR	Preliminary Design Review	5.00	5.00	18-Feb-19	25-Feb-19					
T100H1085	Heading 2A - Stadium Way & Division Utilities	64.00	64.00	23-Oct-18	30-Aug-19					
T100H1115	Outbound - Curb and Gutter	45.00	45.00	03-Sep-19	04-Nov-19					
T100H1135	Inbound - Curb and Gutter	63.00	63.00	20-Dec-19	23-Mar-20					
T100H1145	Stations-Stadium District (STA 182-184)	0.00	0.00	23-Jun-20	23-Jun-20					
T100H1165	Fiber Optic Pull	45.00	45.00	23-Jun-20	26-Aug-20					
TLBMS003	MS-01 - OMF & Yard Complete (Baseline Date Nov 21 2020)	0.00	0.00	21-Sep-20	21-Sep-20					
T100H1175	Pave and Landscape	58.13	58.13	26-Aug-20	19-Nov-20					
T100H1335	Heading 2A and 2B Complete	0.00	0.00	19-Nov-20	19-Nov-20					
T100H1315	Pave and Landscape	60.00	60.00	11-Dec-20	10-Mar-21					
T100H1345	Heading 3 Complete	0.00	0.00	10-Mar-21	10-Mar-21					
TLBSC002	MS-02 - Substantial Completion of all work (Baseline Date May 29 2021)	0.00	0.00	29-May-21	29-May-21					
T100H1375	Job Wide ITS Installation - Mainline	20.00	20.00	06-May-21	04-Jun-21					
A1300	Revenue Service Begins	0.00	0.00	23-May-22	23-May-22					

Project Float

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



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	17	1	1
* 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

- Produced three project updates/alerts about construction and traffic impacts. Continued notifying businesses and residents about pile driving at the OMF, potholing and underground utility replacement.
- Celebrated the Hilltop Tacoma Link Extension groundbreaking at People's Park, Nov. 19
- Obtained input from businesses along Martin Luther King Jr. Way about the possibility of the contractor doing potholing work during the holiday moratorium.
- Met with Stadium High School about school bus routes and the lane closure on Stadium Way. Provided information for the principal to share in his Sunday messages to parents.
- Met with MultiCare to start planning for construction in front of Tacoma General.
- Held the first Coffee with Contractor at the Red Elm Café. About 12 people attended.
- Presented the HTLE project at the 525 Broadway Condominium's annual meeting.
- Addressed Stadium District business concerns about a variable message sign's placement and messaging.
- Briefed Tacoma Councilman Thoms, SpaceWorks, Kaiser Permanente, Denny Faker, and House of Scott Funeral Home.
- Invited businesses along the HTLE route and near the OMF to participate in Sound Transit's business relations program.

Sound Transit Board Actions

Board Action	Description	Date
	None to report.	

Contract T100 — Hilltop Tacoma Link Extension

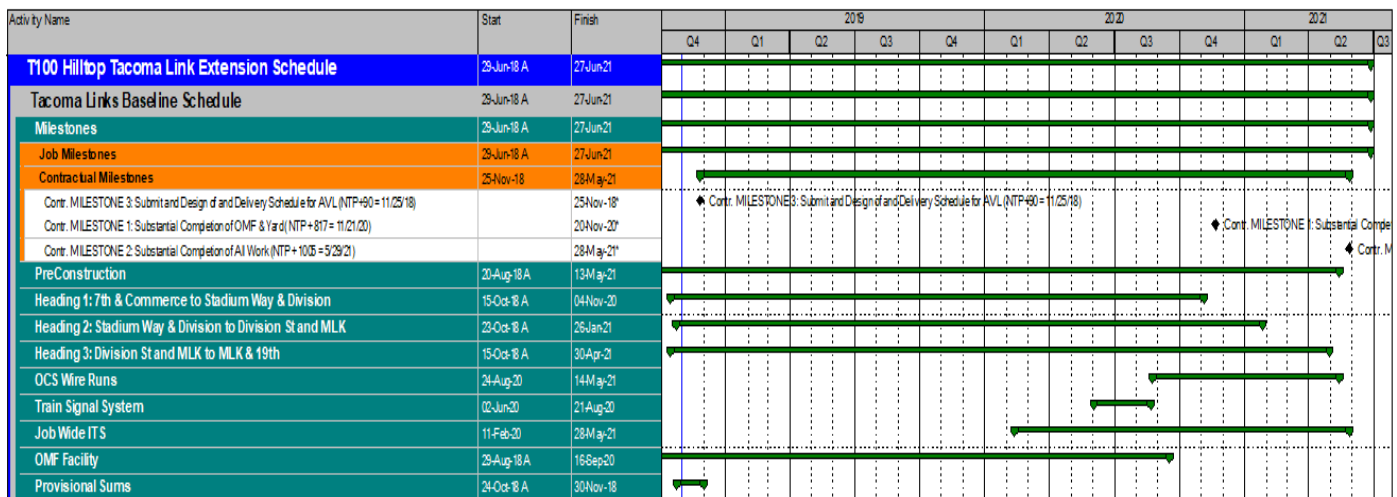
Current Progress

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

- Submittals, Approval, Permits, Procurement and Mobilization continue to proceed since Notice to Proceed.
- Mobilization items also continue through November.
- Demo and Site work completed at the OMF and structure.
- OMF Piling work began and continues next month.
- Storm & Water work began in Heading 1 at 7th & Commerce to Stadium Way .
- Pothole work completed in Headings 2B and 3.

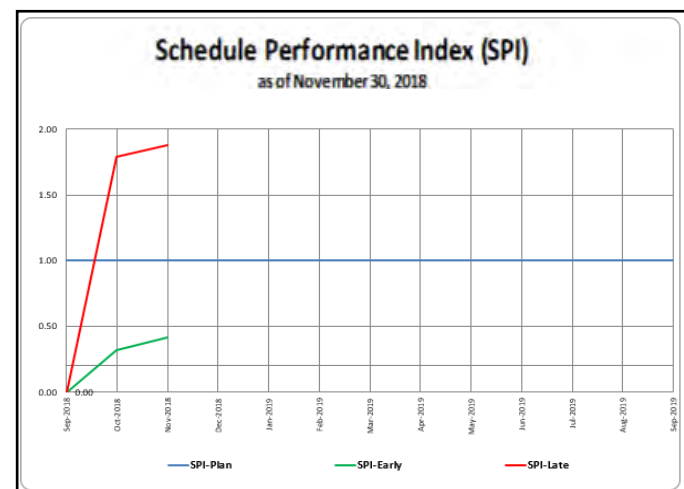
Schedule Summary

The schedule update for November 2018 indicates the project forecast the OMF Substantial Completion completing September 2020 , approximately two months earlier than contractual completion of late November 2020. The critical path begins the heavy utility work located in Heading 1: 7th & Commerce to Stadium Way& Division , Heading 2: Stadium Way & Division and Heading 3 : Division St and MLK.



Schedule Performance Index

This period, the SPI early is at 0.42 and the SPI late is 1.88. The early index indicates that the contractor continues to perform behind the plan when compared to the baseline schedule and cash flow and is expected to improve the next period.



Link Light Rail

Hilltop Tacoma Link Extension

Next Period's Activities

- Submittals, Approval, Permits, Procurement and Mobilization continue
- OMF piling work continues next period.
- Storm & Water work continues.
- Installation of Sanitary Sewer, Storm & Water work continues in Heading 1.
- Installation of Sanitary Sewer, Storm & Water work continues in Heading 3.

Closely Monitored Issues

- The third party utility relocations (TPU, 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)	\$ 9,747,400
Financial Percent Complete	9%
Physical Percent Complete	14%
Authorized Contingency	\$ 5,414,750
Contingency Drawdown	\$ 0
Contingency Index	N/A



Picture Above: Utility potholing on MLK at MultiCare.

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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

- Station Area Workshop for the East Tacoma and Tacoma Dome station locations held on Nov. 1st.
- FTA Briefing on Level 1 route and station locations evaluation results held on Nov. 2nd.
- ST Capital Committee briefing of Level 1 route and station locations evaluation results held on Nov. 8th.
- Elected Leadership Group Meeting held on Nov. 30th to review refinements to Level 1 route and station locations currently being evaluated in Level 2 and potential OMF: South locations to consider in scoping.
- Project team is continuing Level 2 evaluation.
- City of Milton and ST Board approved Project Administration Agreement (PAA) and Task Order 1. Continued negotiations with the Cities of Federal Way and Tacoma on PAA. Similarly, continued discussion with Puyallup Tribe of Indians on a partnering agreement.
- 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	\$2.8	\$2.5	\$26.8	\$0.0
Preliminary Engineering	\$87.1	\$10.3	\$4.3	\$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	\$13.3	\$6.9	\$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	\$13.3	\$6.9	\$110.9	\$0.0
90 Unallocated Contingency	\$9.8	\$0.0	\$0.0	\$9.8	\$0.0
Total (10 - 90)	\$125.7	\$13.3	\$6.9	\$125.7	\$0.0

Link Light Rail

Tacoma Dome Link Extension



Risk Management

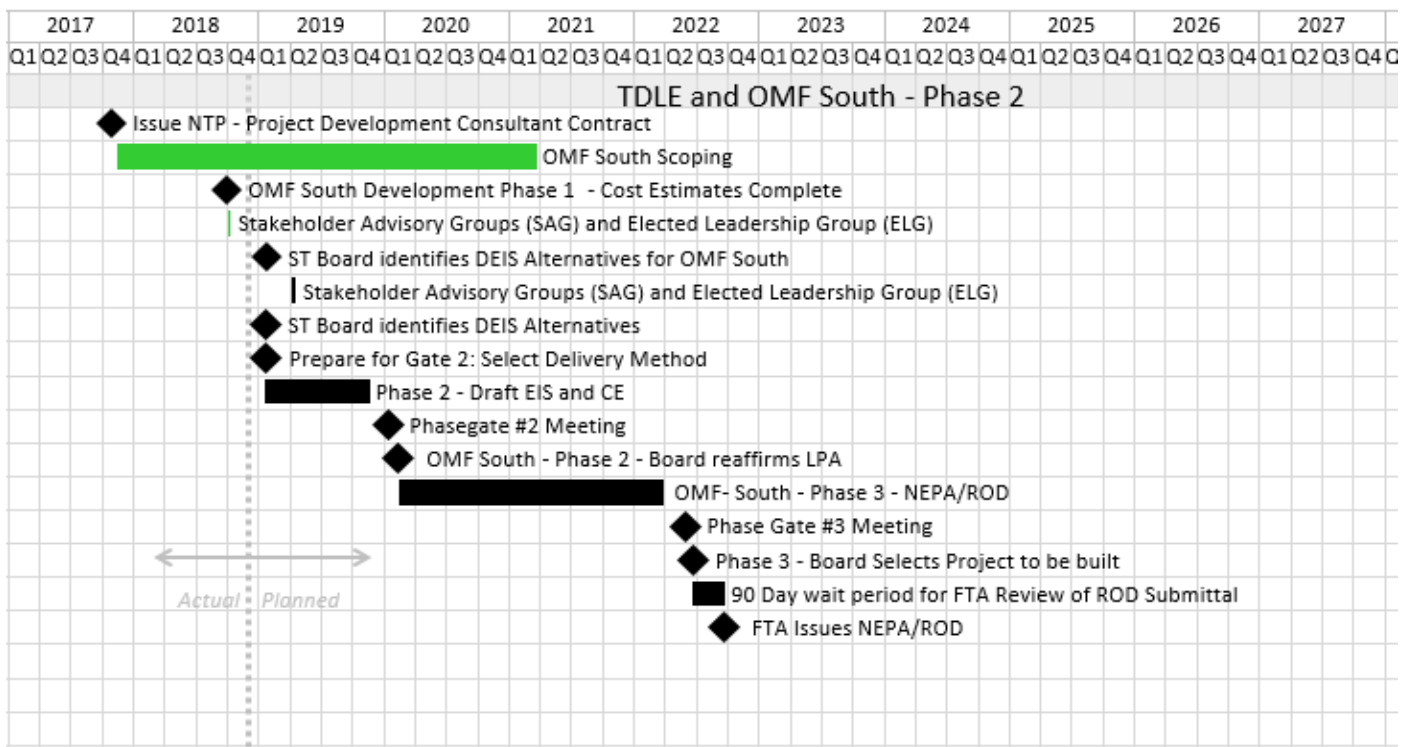
The Tacoma Dome Link Extension and OMF South Risk and Contingency Management Plan (RCMP) will establish a risk management and oversight process for identifying, assessing, and monitoring risks and develops risk reduction/mitigation plans. It will provide a tool for the project team to proactively manage 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 third risk review workshop was held for the 4th QTR 2018. The following are the top project wide risks:

- Coordination with SR 167 Gateway project.
- Siting OMF: South and potential schedule challenges.
- Coordination with Puyallup Tribe of Indians regarding potential property needs, schedule.
- Potential third party scope requests.
- Market conditions impacting costs.

Project Schedule

Phase I Alternative Analysis —The HDR detailed schedule as of Nov 30, 2018 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 TDLE project. but the critical path of this schedule is running through the OMF Landfill Siting Feasibility Study Report to preparing and reviewing OMFS Capital Cost Estimating required for briefing the Sound Transit Board to help identify the OMFS DEIS Preferred Alternatives in the 1st QTR 2019.



Critical Path Analysis

Utilizing the criteria of Critical Path equals Total Float less than 5 Days, Phase 1 critical path runs through the environmental scoping effort required for the Federal Register Notice and the SEPA Register Statement, running through Milestone for Sound Transit Board Action on Preferred Alternatives to the completion of the Phase 1.

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float	2019				2020				2021				2022				
							Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A5950	9.2.2 - OMFS Landfill Siting Feasibility Study Report - Draft 1	52	1	26-Sep-18 A	31-Oct-18	-20																	
A5920	9.7.1 - Draft OMFS Cost Estimates	20	20	31-Oct-18	29-Nov-18	-8																	
A6070	OMFS Landfill Siting Feasibility Study Report Draft 1 - ST Review	10	10	01-Nov-18	14-Nov-18	-20																	
A5900	9.6.3 - Stakeholder Briefing Material	51	51	06-Nov-18	21-Jan-19	-20																	
A6080	9.2.2 - OMFS Landfill Siting Feasibility Study Report - Draft 2	10	10	15-Nov-18	30-Nov-18	-20																	
A6090	9.7.1 - ST Review OMFS Cost Estimates	10	10	30-Nov-18	13-Dec-18	-8																	
A5560	Elected Leadership Meeting - Nov	0	0		30-Nov-18*	-23																	
A5710	9.2.4 - Support ST in preparation of Board briefing information	37	37	03-Dec-18	24-Jan-19	-23																	
A5840	Scoping Period	22	22	03-Dec-18	03-Jan-19	-20																	
A6100	9.7.1 - Final OMFS Cost Estimates	13	13	14-Dec-18	03-Jan-19	-8																	
A5850	Scoping Meetings	4	4	17-Dec-18	20-Dec-18	-20																	
A5860	9.5.6 - Prepare Scoping Summary Report	20	20	21-Dec-18	21-Jan-19	-20																	
A5970	Board Identifies DEIS Alternatives	0	0		24-Jan-19*	-1																	
A3475	Sound Transit Board Action on Preferred Alternative	0	0		27-Jun-19*	0																	
A3516	Phase 1 Complete	0	0		27-Jun-19	0																	

Community Outreach

- Hosted TDLE Station Area Workshop for East Tacoma and Tacoma Dome.
- Participated in the Triple Partnering Seminar event at Sheridan Elementary.
- Participated in Dome District meeting.
- Provided briefing for South King County Mobility Coalition (SKCMC).
- Participated in the Downtown on the Go Annual Luncheon.
- Hosted TDLE Elected Leadership Group meeting.

Sound Transit Board Actions

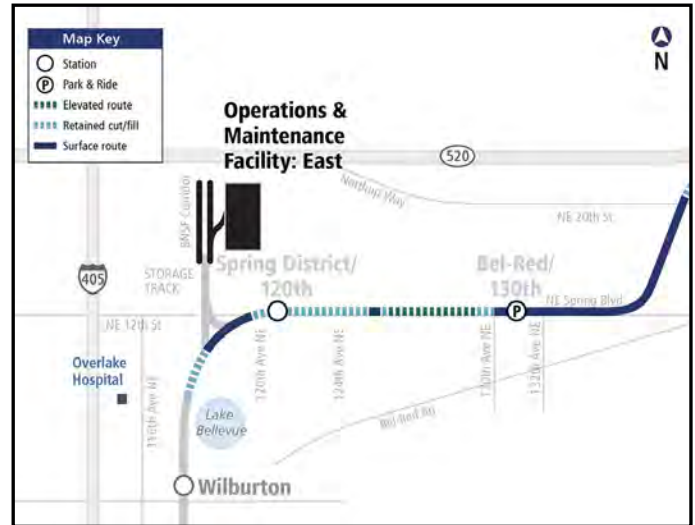
Board Action	Description	Date
	None to report.	

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 DP3 and DP3A are ongoing. DP4A (OMF and MOW Building Design) IFC was submitted and approved in the month of November.
- Excavation for the North Vault and site utilities ductbank continues.
- OCS foundation work commenced.
- Wheel Truing Pit: finish slab placed, and preparing for wall pours.
- OMFE Building foundations construction has begun.

Closely Monitored Issues

- Elements of DB Contractor's proposal (shear wall elimination for future development) may require MOU amendment with City of Bellevue.
- 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 \$4.2M The total project cost incurred from \$174.8M to \$179M. The primary cost drivers during this period on the OMF East project comes from the design build (construction) phase at \$3.5M or roughly 84% of the total monthly expenditures. The next cost driver this period are the Construction Service and Administrative Phase expenditures at about \$0.5M and \$0.2M respectively.

Cost Summary by Phase

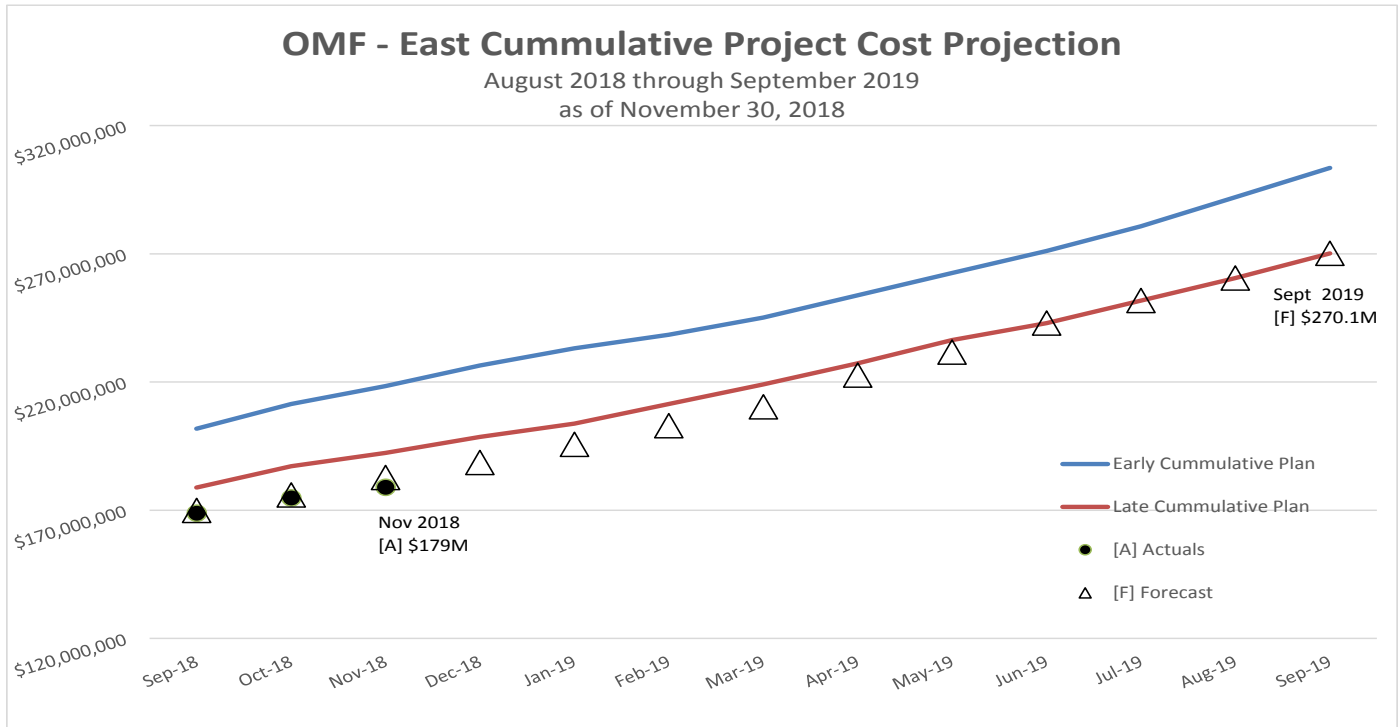
Project Phase	Baseline Budget	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$17.6	\$17.6	\$5.2	\$5.1	\$17.6	\$0.0
Preliminary Engineering	\$9.5	\$9.5	\$9.0	\$8.7	\$9.5	\$0.0
Final Design	\$0.4	\$0.4	\$0.0	\$0.0	\$0.4	\$0.0
Construction Services	\$19.3	\$19.3	\$17.6	\$4.8	\$19.3	\$0.0
3rd Party Agreements	\$3.1	\$3.1	\$0.3	\$0.1	\$3.1	\$0.0
Construction	\$264.8	\$264.8	\$222.9	\$58.8	\$264.8	\$0.0
ROW	\$134.5	\$134.5	\$101.8	\$101.5	\$134.5	\$0.0
Total	\$449.2	\$449.2	\$356.8	\$179.0	\$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	\$0.8	\$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	\$136.2	\$124.1	\$23.1	\$145.4	-\$9.2
40 Sitework & Special Conditions	\$43.6	\$47.3	\$39.7	\$8.6	\$41.6	\$5.7
50 Systems	\$43.0	\$41.6	\$38.5	\$7.2	\$38.5	\$3.1
Construction Subtotal (10 - 50)	\$229.3	\$229.5	\$206.4	\$39.6	\$229.5	\$0.0
60 ROW, Land, Improvements	\$134.5	\$134.5	\$101.8	\$101.5	\$134.5	\$0.0
70 Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
80 Professional Services	\$71.6	\$71.4	\$48.6	\$37.9	\$71.4	\$0.0
90 Unallocated Contingency	\$13.8	\$13.8	\$0.0	\$0.0	\$13.8	\$0.0
Total (10 - 90)	\$449.2	\$449.2	\$356.8	\$179.0	\$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 reached \$179M with Right-of-Way (ROW) phase cost being the largest driver at 56.7% and Construction Phase at about 32.8%. 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 \$270.1M by September 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 2nd quarter 2018 OMF East quarterly risk register has been updated and reviewed. A Quantitative Risk Assessment (QRA) has assessed the project complete within the given risk profile, to 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 60% design milestone, changes made to scope or design will have greater cost impact than during the earlier design stages.
- **Scope:** Scope increase as a result of Third Parties or ST stakeholders requesting additional work or deviation from plans will impact the project 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. Soil conditions and coordination with third parties has been some early evidence of such challenges.

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. In this period, there were no contingency drawdown. The current contingency balance remains practically unchanged at approximately \$69.7M (previous quarter at \$69.8M).

Design Allowance (DA): N/A.

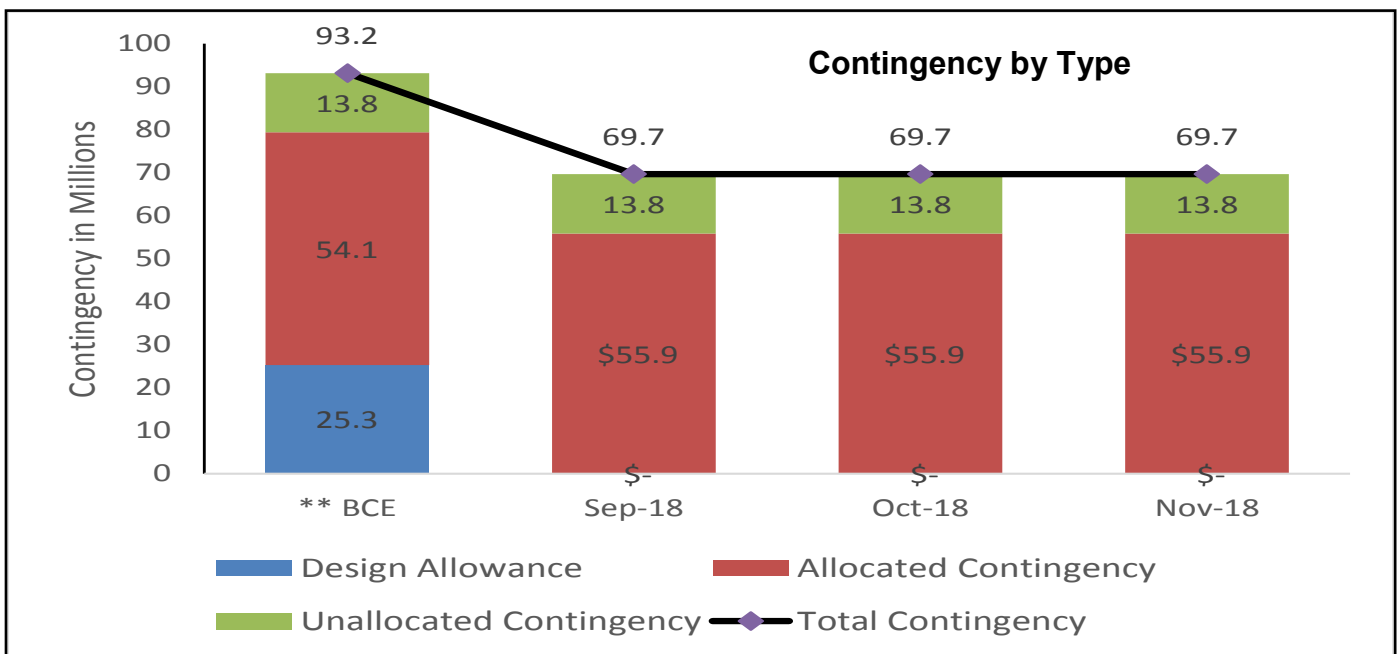
Allocated Contingency (AC) is used to address risks, complexity and unforeseen conditions during the execution of work, including procurement. Allocated contingency balance at the end of this period remained unchanged from the previous month at \$55.9M.

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%	\$ 55.9	20.7%
Unallocated Contingency	\$ 13.8	3.1%	\$ 13.8	5.1%
Total	\$ 93.2	20.7%	\$ 69.7	25.8%

Table figures are shown in millions.

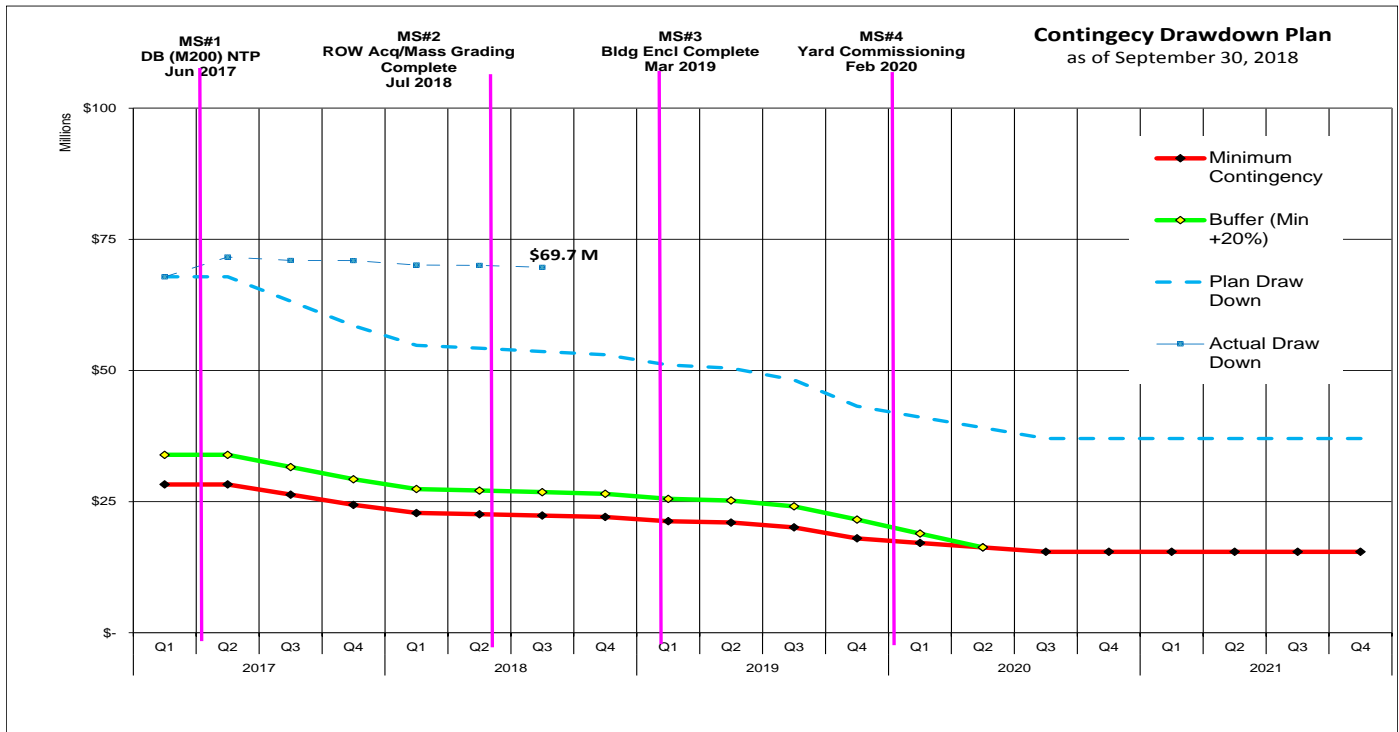


Link Light Rail

Link Operations & Maintenance Facility: East

Contingency Drawdown

At the end of the 3rd 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 4th QTR 2018.



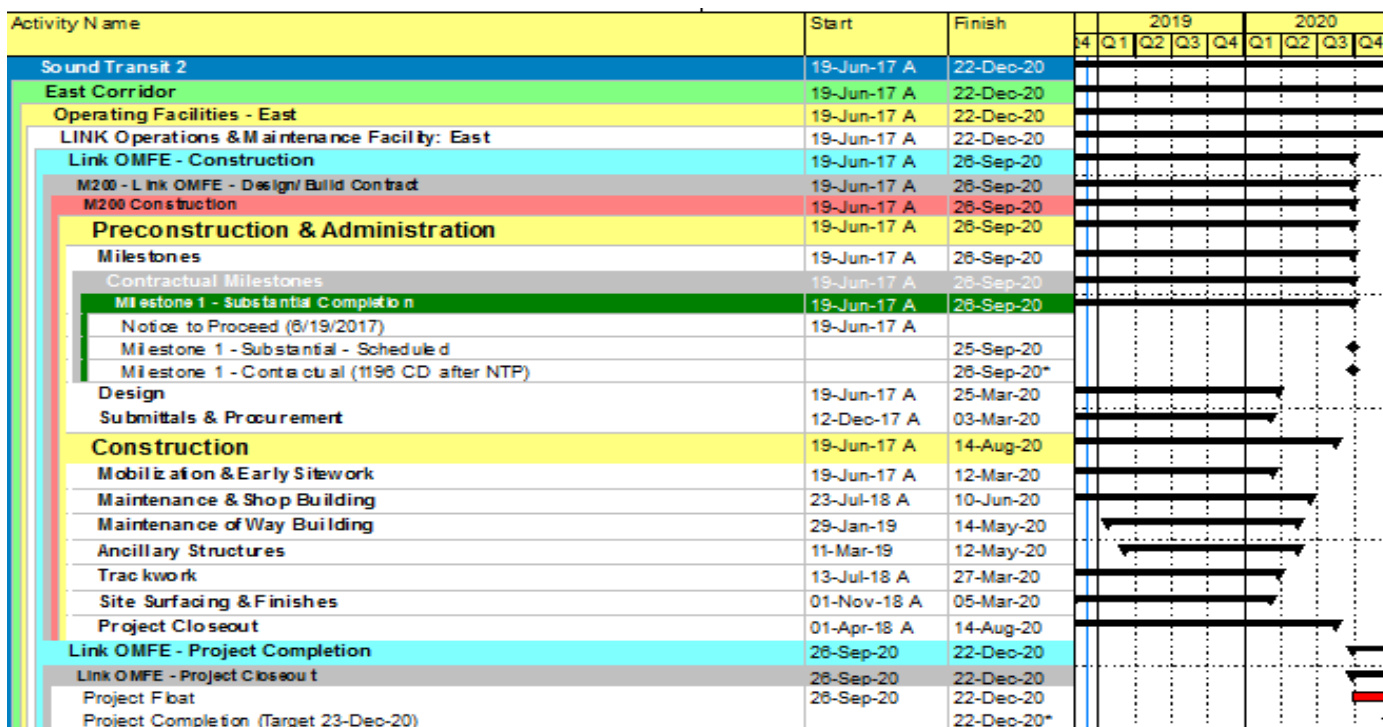
Graph for Quarter ending September 30, 2018



Aerial photo of OMF East site looking north

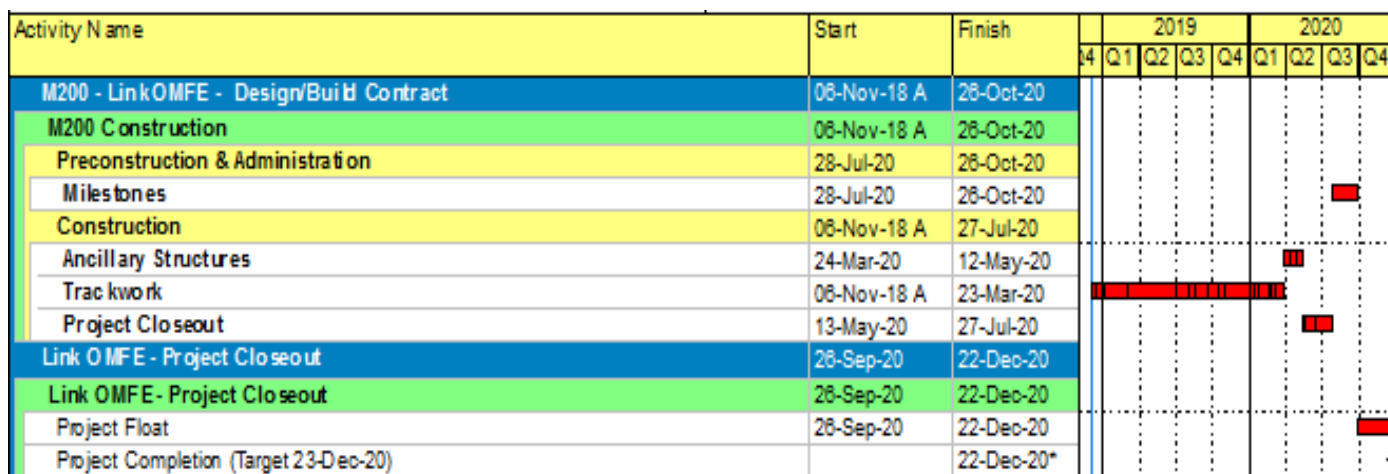
Project Schedule

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. 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 through Design Package 3 and the trackwork in the storage yard.



Link Light Rail

Link Operations & Maintenance Facility: East

Right-of-Way

All OMF East properties have now been vacated and are in the project's control. Only administrative functions remain in this phase of the project. *No more updates.*

Community Outreach

- Distributed construction alerts for maintenance of traffic on 120th Avenue NE.

Sound Transit Board Actions

Board Action	Description	Date
	None to report this period.	



Design Builder's 3-D model of the OMF—East looking Southeast.

Contract M200 - OMF East Design Build

Current Progress

Design: Hensel Phelps (HP) advanced design packages (DP) for the following areas: IFC for DP3 was submitted and is currently under review. DP3A 100% development continues with a planned submittal in early December. DP4A was submitted and approved in November.

Construction: HP commenced excavations and 3 foundation pours for the OCS pole foundations. Excavation of the north vault continues. Wheel Truing Pit: finish slab was placed, rebar reinforcement construction continued, and preparation is on going for concrete wall pours in December. Made final connection to E335's storm water system. Work for the OMFE building foundations has begun. Site utility ductbank excavation and installation continues to progress.

Next Period's Activities

- Complete DP #003 IFC Submittal Review
- Complete DP #003A 100% Submittal & Review
- Continue excavation for north vault and utility duct bank.
- Continue work at wheel truing pit.
- Pour north pit walls for OMFE Building.
- 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 change order and currently working on partnering activities to resolve the issue and find a path forward.
- **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	\$1,930,971
Current Contract Value	\$220,817,200
Total Actual Cost (Incurred to Date)	\$56,725,175
Percent Complete	33.02%
Authorized Contingency	\$21,891,200
Contingency Drawdown	\$1,930,971
Contingency Index	3.8



Wheel Truing Pit Rebar and Formwork.

*Excludes Betterments

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

- Commenced static and dynamic testing the first LRV
- Magnetic perturbation testing commenced on November 28, 2018.
- Partnering meeting was held at Siemens' plant in Sacramento on November 27, 2018 to go over expectations on first complete car First Article of Inspection.
- Eleven cars are in various phases of production at Siemens' plant.

Closely Monitored Issues

- Commercial dispute remains open with Siemens regarding lift design and jacking points, and door supplier change .
- Provision of Wi-Fi facilities at Link OMF and OMF East.
- Test Waivers, Siemens is behind on submitting anticipated waiver requests and test procedures.



LRV #001 on test track.



LRV #002 in wiring testing.

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 November 2018, the project incurred to date costs increased slightly by \$.02 M. The total incurred cost remained around \$87.0M. The majority of this period's costs were attributed to administration costs.

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	\$1.3	\$1.2	\$6.4	\$0.0
Construction Services	\$18.0	\$18.0	\$4.8	\$3.7	\$18.0	\$0.0
Vehicles	\$716.3	\$716.3	\$649.3	\$82.1	\$716.3	\$0.0
Total*	\$740.7	\$740.7	\$655.4	\$87.0	\$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 (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	654.2	\$85.8	\$702.8	\$0.0
80 Professional Services	\$6.1	\$6.1	\$1.2	\$1.2	\$6.1	\$0.0
90 Contingency	\$31.7	\$31.7	\$0.0	\$0.0	\$31.7	\$0.0
Total *(SCC 10 - 90)	\$740.7	\$740.7	\$655.4	\$87.0	\$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 1st Quarter of 2018. 4th QTR Project Risk Register Meeting is scheduled to be held in December 2018.

The current top risk areas are listed below:

- Design of the propulsion and auxiliary power system taking longer than anticipated (System Requirements and Compatibility).
- Commissioning of LRVs is impacted due to lack of sufficient space, lift access or other resources at OMF (Forest St.).
- Limited yard storage capacity in 2020 may impact preventative maintenance or spares available to support peak service.
- Automatic Train Protection retrofit of existing fleet takes longer than expected.

Link Light Rail

Light Rail Vehicle Fleet Expansion



Contingency Management

The project's budget was Baseline in September 2015 contained a total of \$78.0M of Total Contingency. The project's Total Contingency is currently at \$68.9.1M 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.

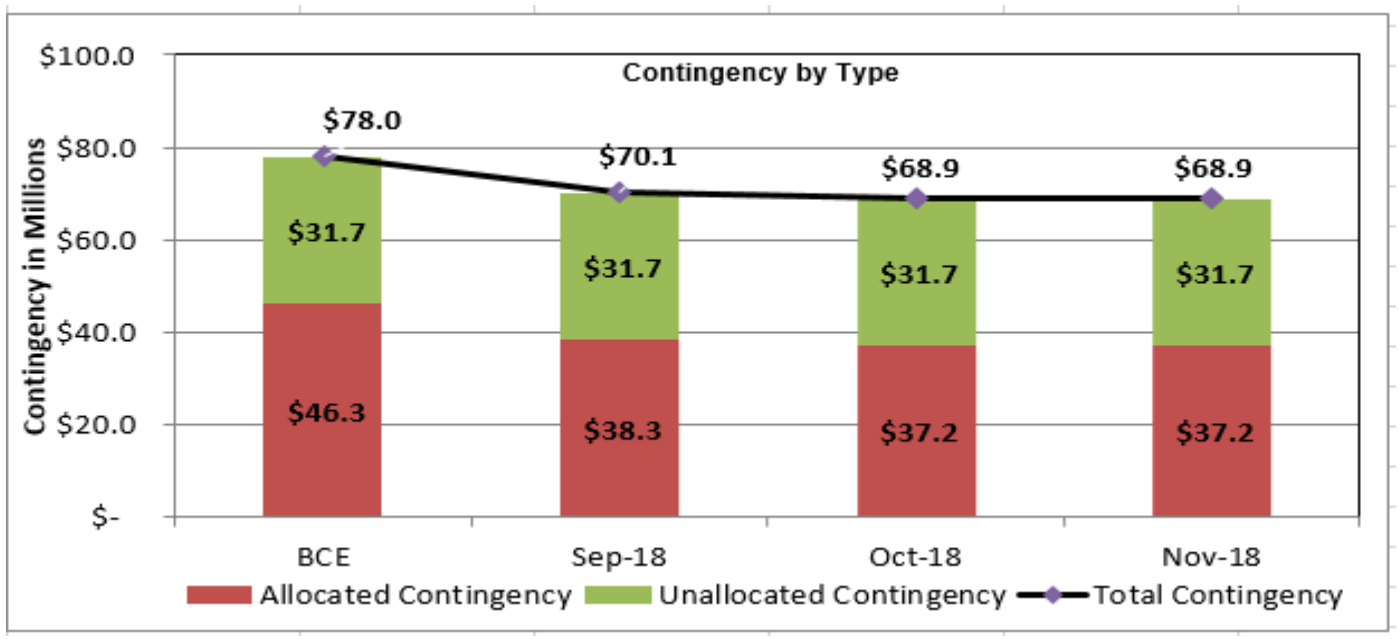
Allocated Contingency (AC) is used to address risks, complexity and unforeseen conditions during the execution of work, including procurement. The project baseline's allocated contingency was \$46.3M. The current available allocated contingency is \$37.2M . Approximately \$1M contingency was drawn this period for LRV change orders.

Contingency Status

Contingency Type	Baseline		Current	
	Amount	% of Total	Amount	% of Work Remaining
Design Allowance	\$ 00.0	0.0%	\$ 00.0	0.0%
Allocated Contingency	46.3	6.4%	\$ 37.2	6.5%
Unallocated Contingency	\$ 31.7	4.3%	\$ 31.7	0.0%
Total	\$ 78.0	10.7%	\$ 68.9	12.1%

Table figures are shown in millions.

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. The current schedule shows a disconnect between engineering and manufacturing of cars. This issue is being worked on by Siemens. This period's progress represents the review effort performed on final design packages being submitted by Siemens for approval and inspection support by the Resident Inspector at the Siemens' plant to monitor the production of the carshell and truck frame.

Activity Name	Start	Finish	2019				2020				2021				2022				2023				2024				2025				2026				2027			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
LRV Procurement Schedule	24-Feb-15 A	12-Jul-24																																				
LRV Vendor Procurement	24-Feb-15 A	10-Oct-16 A																																				
LRV Engineering and Manufacture	11-Oct-16 A	30-Nov-18																																				
LRV Design Reviews, Manufacturing, and System Tests	11-Oct-16 A	30-Nov-18																																				
LRV Delivery Schedule	18-Jan-19	12-Jul-24																																				
LRV #1-122(122 LRV Base Order)	18-Jan-19	02-Feb-23																																				
Delivery of 1st LRV (BL 27-Mar-19)		18-Jan-19																																				
Delivery of 40th LRV - Northgate Link Vehicle Deliveries Complete (BL 26-Jun-20)		03-Apr-20																																				
Delivery of 42nd LRV - Existing OMF at capacity (104 LRVs) (BL 27-Jul-20)		24-Apr-20																																				
Final Acceptance of Vehicles (BL 28-Feb-23)		02-Feb-23																																				
Delivery of 122nd LRV - Final ST2 Delivery (BL 26-Aug-22)		27-Jul-22																																				
LRV #123-152 (30 LRV Options) - Change Order #4	11-Jan-24	12-Jul-24																																				
Delivery of 152nd LRV - Final Delivery (BL 26-Feb-24)		11-Jan-24																																				
Final Acceptance of Vehicles (BL 26-Aug-24)		12-Jul-24																																				
Project Closeout																																						

Critical Path Analysis

The manufacturer's schedule continues trending ahead of baseline schedule; the delivery of the 1st LRV is still projecting to be completed in 1st QTR 2019, current schedule forecasts that the 1st LRV is approximately 2 months ahead of the schedule target completion date of March 27, 2019. The critical path remains in finishing of the Final Design Reviews and FAI open actions items. These tasks has slipped into late December 2018 and is required to be completed before factory test for the 1st LRV car to be completed and readied for shipment in January 2019—an indicator that the 1st LRV's delivery date is now tentative.

The delivery of all the light rail vehicles requirements for Northgate Link Extension is currently anticipated approximately a year ahead of the start of revenue service. This is well within fleet requirement 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

LRV Manufacturing Critical Path Schedule

Activity Name	Start	Finish	2019				2020				2021				2022				2023				2024			
			Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
ST2 Light Rail Vehicle Fleet Expansion	11-Jun-18 A	15-Oct-19																								
Pre-Shipment & Qual Testing Testing (includes MP and GBV) LRV#001	12-Nov-18	04-Dec-18																								
Final Assembly LRV#001	11-Jun-18 A	03-Jan-19*																								
Final Assembly LRV#002	22-Aug-18 A	11-Jan-19																								
Shipment and Arrival at O&M Facility LRV#001	11-Jan-19	17-Jan-19																								
Qualification Testing (includes MP and GBV) LRV#001	18-Jan-19	14-Feb-19																								
Acceptance Testing LRV#001	15-Feb-19	25-Jun-19																								
Burn-In LRV#001	28-Jun-19	18-Jul-19																								
Conditional Acceptance (Milestone A-E) LRV#001	19-Jul-19*																									
Final Acceptance (Milestone A-F) LRV#001	15-Oct-19*																									

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Link Capital Program Staffing July – September 2018 (updated quarterly)

Recruiting Status

The following positions were filled in 3rd QTR 2018 to support the Link Capital Program:

Position	Position
Corridor Design Manager	Cost Control Supervisor
Manager, Structural Eng	Sr. Project Control Specialist
Civil Engineer (2)	Construction Manager
Manager, Engineering - Rail/Vehicle	Principal Construction Manager
Sr. Systems Engineer	Sr. Administrative Specialist, CM
Manager, Communications & SCADA	Sr. Project Manager
Mech Engineer, Fire Protection	Assistant Mgr, Property Management
Systems Engineer	

As of the end of 3rd QTR 2018, below is the current DECM staffing levels:

Division	Total Positions	Open Positions	Filled Last Quarter
Executive, includes Project Directors	22	4	0
Project Management	33	8	1
Civil/Structural Engineering	60	10	4
System Engineering	40	3	5
Architecture & Art	18	1	0
Permitting	13	3	0
Construction Management	31	4	3
Project Control	62	8	2
Real Property	19	0	0
Property Management	11	2	1
TOTAL	309	43	16

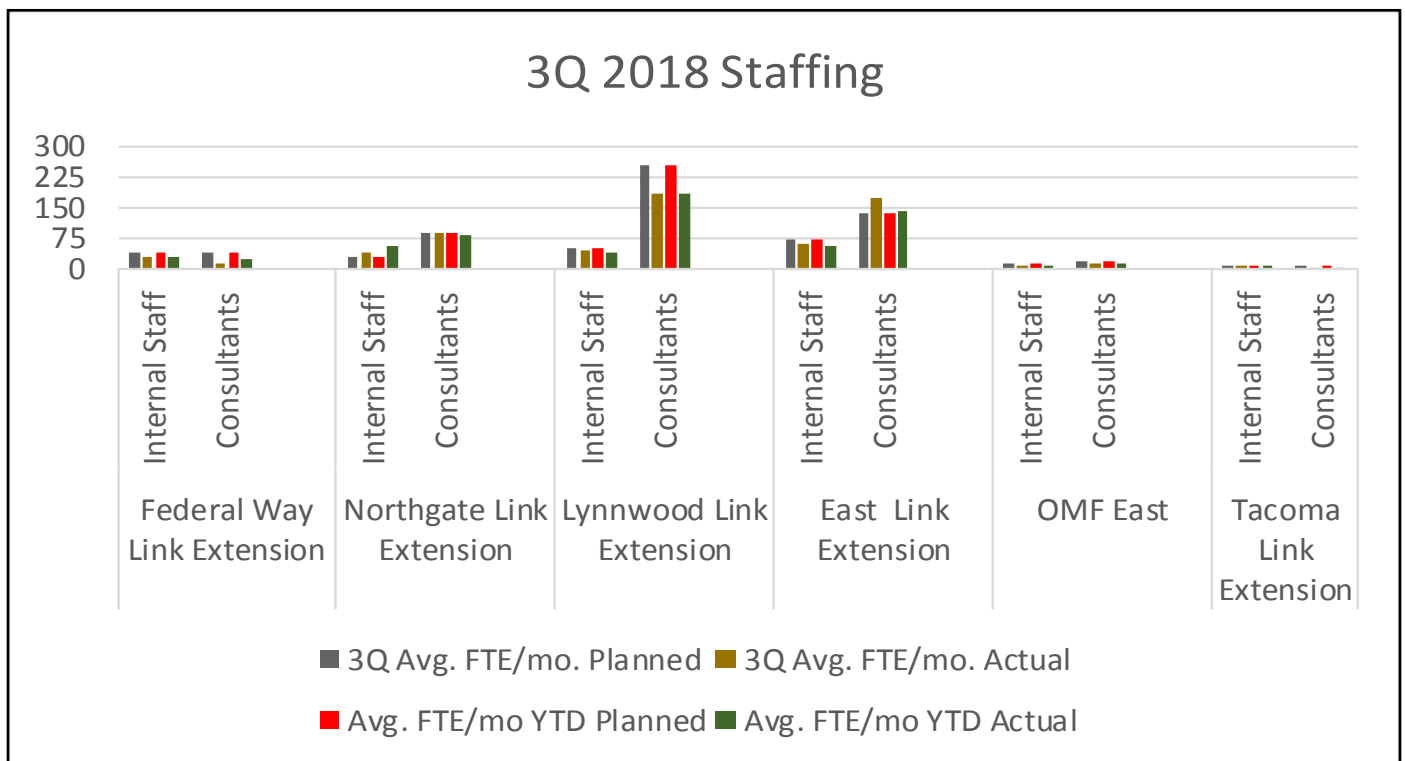
Link Light Rail Staffing Report



Staffing Variance relative to Plan

There were 206 internal and 485 consultant full time equivalents (FTE) supporting design and construction of Link light rail extensions (Table 1). Staffing for the Federal Way Link Extension and the OMF East was within 10% of plan. Staffing for the Northgate, Lynnwood, East, and Hilltop Tacoma Link Extensions was 95%, 76%, 86%, and 62% 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	33	-8	-19%	41	15	-26	-63%	82	48	-33	-41%
Northgate Link Extension	30	40	10	33%	91	87	-4	-4%	121	128	6	5%
Lynnwood Link Extension	53	48	-6	-11%	255	188	-67	-26%	308	235	-73	-24%
East Link Extension	73	65	-8	-11%	140	178	38	27%	213	243	29	14%
OMF East	13	9	-4	-32%	19	12	-7	-35%	32	21	-11	-34%
Tacoma Link Extension	12	11	-1	-12%	12	4	-8	-63%	24	15	-9	-38%
Total	223	206	-18	-8%	558	485	-73	-13%	781	690	-91	-12%



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 Admin-
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		