# Progress Report Link Light Rail Program



Installation of formwork and rebar for the walls and elevated slabs at the Roosevelt Station (Northgate Link Extension)

JANUARY | 2018









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# Link Light Rail Program Overview



## **Projects**

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. Final Design for Lynnwood has a budget of \$488.4M.

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 Center is forecast for early 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:** The Downtown Redmond Link Extension builds new light rail from the Redmond Technology Center 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. Preliminary Engineering for the Redmond light rail extension has a budget of \$28.6M.

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 designbuild (DB) 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 current budget for this project through completion of Final Design is \$412.6M.

**Tacoma Link Extension:** The 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 1<sup>st</sup>. 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.

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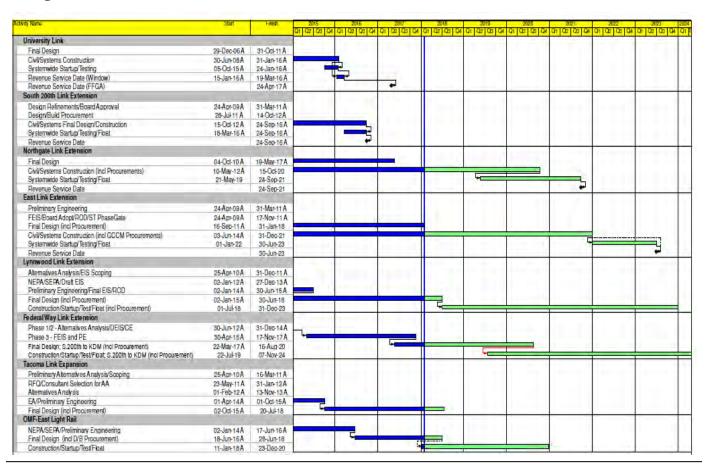


# **Program Budget**

Table in millions.

Project	Authorized Project Allocation	Commitment to Date	Incurred to Date	Forecast to Complete	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
University Link	\$1,756.0	\$1,513.4	\$1,504.9	\$41.1	\$1,554.5	\$201.5
Northgate Link Extension	\$1,899.8	\$1,608.9	\$1,064.9	\$238.5	\$1,847.4	\$52.4
Lynnwood Link Extension	\$667.3	\$252.5	\$203.9	\$414.9	\$667.3	\$0
East Link Extension	\$3,677.2	\$2,822.5	\$1,071.9	\$854.7	\$3,677.1	\$0
Downtown Redmond Link	\$178.0	\$16.3	\$11.3	\$161.7	\$178.0	\$0
West Seattle & Ballard Link	\$285.9	\$25.7	\$4.0	\$260.2	\$285.9	\$0
South 200th Link Extension	\$383.2	\$330.9	\$328.1	\$1.7	\$332.6	\$50.6
Federal Way Link Extension	\$412.6	\$61.9	\$59.0	\$350.7	\$412.6	\$0
Tacoma Link Extension	\$217.3	\$56.6	\$22.9	\$160.8	\$217.3	\$0
Tacoma Dome Link Extension	\$125.7	\$10.8	\$0.7	\$114.8	\$125.7	\$0
Link O & M Facility: East	\$449.2	\$352.5	\$135.7	\$96.8	\$449.2	\$0
LRV Fleet Expansion	\$740.7	\$653.8	\$74.2	\$86.9	\$740.7	\$0
Total Link	\$10,793.0	\$7,705.7	\$4,481.4	\$2,782.8	\$10,488.4	\$304.5

# **Program Schedule**



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# Link Light Rail University Link Extension



# 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) cam-

pus near Husky Stadium.

Tunnels: Two twin bored tunnels. Two contract seg-

ments: 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**: 2 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.

**System**: 27 LRV; direct fixation tracks, signals, trac-

tion electrification, and SCADA communica-

tions

Budget: \$1.948 billion including finance cost (capital

subtotal of \$1.756 billion)

Schedule: Revenue Service began on March 19, 2016.



# **Key Project Issues**

- *U830 Systems:* Contractor is currently focusing on punch list on ULINK and systems refinement to achieve optimal operation status. U-Link Systems has encountered some issues related to this infancy period and is working to resolve them.
- *Certificate of Occupancy:* University Link continues to operate under a temporary certificate of occupancy until all permit requirements are fully met. The final items remaining are the utility as-built drawings to be submitted to Seattle Public Utilities (SPU). Final review of the emergency ventilation systems by the Seattle Fire Department (SFD) is complete and has been accepted by SFD.
- 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. Finalizing review of commercial issues with Systems contractor.
- Miscellaneous follow-on commitments and restoration work remains. Decommissioning of monitoring wells, restoration of the Systems staging area on Pine Street are anticipated when the weather improves. Before and After Study commitment to be initiate in fall of 2018.

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# Link Light Rail University Link Extension

# **Project Cost Summary**

The U-Link project cost is summarized in two types of cost classifications. In the first table, cost is classified in accordance with Sound Transit's Work Breakdown Structure (WBS); and in the second table, cost is summarized in accordance to the FTA's Standard Cost Categories (SCC) format. (Both tables' figures in millions).

#### Cost Summary by Phase

Project Elements by SCC	Base	line Budget	Authorized Project Allocation	Co	mmitment to Date*	In	ncurred to Date	stimated Final Cost (EFC)	Authorized location vs. EFC
10 Guideway & Track Elements	\$	626.83	\$ 450.46	\$	455.56	9	\$ 455.69	\$ 461.23	\$ (10.77)
20 Stations	\$	366.33	\$ 350.75	\$	344.76	9	342.95	\$ 353.10	\$ (2.34)
30 Support Facilities: Yards, Shops	\$	7.01	\$ 24.83	\$	23.47	9	\$ 23.34	\$ 24.80	\$ 0.03
40 Sitework & Special Conditions	\$	59.03	\$ 67.39	\$	57.14	9	54.92	\$ 56.89	\$ 10.50
50 Systems	\$	69.63	\$ 116.42	\$	100.44	9	100.04	\$ 102.40	\$ 14.02
Construction Subtotal (SCC 10-50)	\$	1,128.82	\$ 1,009.85	\$	981.36	\$	976.95	\$ 998.41	\$ 11.44
60 Row, Land, Existing Improvements	\$	167.33	\$ 126.60	\$	126.43	9	126.43	\$ 125.76	\$ 0.84
70 Vehicles	\$	99.76	\$ 100.16	\$	99.87	9	99.87	\$ 100.16	\$ 0.00
80 Professional Services	\$	306.41	\$ 346.58	\$	305.76	9	301.65	\$ 318.74	\$ 27.85
90 Unallocated Contingency	\$	53.65	\$ 172.81	\$	-	\$	-	\$ 11.48	\$ 161.33
Capital Cost Total (SCC 10-90)	\$	1,755.97	\$ 1,756.01	\$	1,513.42	S	1,504.89	\$ 1,554.55	\$ 201.45
100 Finance Cost	\$	191.71	\$ 191.71	\$	191.71	9	174.87	\$ 191.71	\$ -
Project Total	\$	1,947.68	\$ 1,947.72	\$	1,705.13	\$	1,679.77	\$ 1,746.26	\$ 201.45

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

In January, the 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, after some cost adjustments the project expenditure net about \$220K increasing the total direct expenditure to about \$1.5B (Finance Cost excluded). Current activities continues to pertain to close out and miscellaneous follow on work. The construction EFC continues to be approximately \$1B. This trend continues to hold as the project is substantially complete with only miscellaneous follow on scope and commercial issues remaining. Systems continues optimization process with miscellaneous operational equipment purchases trailing. The Total Incurred to Date for the Construction Phase is about \$989M and LRV is at about \$99.2M. Cost of LRV repairs were excluded from this project and tracked independently.

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# Link Light Rail University Link Extension



Construction EFC under the SCC format remains relatively unchanged at about \$998M. Construction SCC expenditures to date is about \$977M this period mostly attributed to Systems' continuing optimization and resolutions to change order work and miscellaneous follow on work. Total capital cost incurred to date including non-construction cost (SCC 60 thru 90) now at \$1.5B or about 86% of total project budget scoped (Finance Cost excluded). Total project cost incurred to date at the end of January 2018 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.

### Cost Summary by SCC

WBS Phase Elements	Baseline Budget	Authorized Project Allocation	Co	ommitment to Date*	Inc	curred to Date	Es	stimated Final Cost (EFC)	-	Authorized location vs. EFC
ADMINISTRATION	\$ 115.23	\$ 113.55	\$	82.56	\$	81.85	\$	88.16	\$	25.40
PRELIMINARY ENGINEERING	\$ 24.39	\$ 24.26	\$	24.26	\$	24.26	\$	24.26	\$	-
FINAL DESIGN	\$ 77.94	\$ 90.31	\$	87.97	\$	86.55	\$	89.17	\$	1.13
CONSTRUCTION SERVICES	\$ 68.53	\$ 94.81	\$	86.94	\$	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	\$	994.42	\$	988.71	\$	1,022.34	\$	135.84
VEHICLES	\$ 103.91	\$ 103.91	\$	99.20	\$	99.19	\$	101.91	\$	2.00
ROW	\$ 167.33	\$ 152.33	\$	126.43	\$	126.43	\$	126.78	\$	25.55
Capital Total	\$ 1,755.97	\$ 1,756.01	\$	1,513.42	\$	1,504.89	\$	1,554.55	\$	201.45
FINANCE COST	\$ 191.71	\$ 191.71	\$	191.71	\$	174.87	\$	191.71	\$	-
Project Total	\$ 1,947.68	\$ 1,947.72	\$	1,705.13	\$	1,679.77	\$	1,746.26	\$	201.45

<sup>(\*)</sup>Totals may not equal column sums due to rounding of line entries.

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# Link Light Rail University Link Extension

# U240 Contract - Capitol Hill Station

#### Close-out

The U240 Contractor achieved Substantial Completion on December 31, 2015.

#### **Close-out Activities**

#### Current Period

Continued negotiating and finalizing outstanding commercial issues. The latest round of mediation was successful in resolving some subcontractor claims, but a final settlement with the general contractor has not been reached.

#### Next Period

• Continue negotiating and finalizing commercial issues.

## **Closely Monitored Issues**

Multiple commercial issues remain open including various notice of intents to claim and actual claims. These claims continue to be reviewed and assessed by Sound Transit and the Contractor.

## U250 Contract -University of Washington Sta.

#### Close-out

Milestone #7, Substantial Completion, was granted in November 2014. U250 achieved acceptance on April 26, 2016.

#### **Close-out Activities**

• All outstanding claims have been verbally settled and will continue moving through the formal execution phase. A final settlement change order will be issued to the Contractor.

### **Cost Summary**

Present Financial Status	Amount
U240 Contractor - Turner Construction	
Со	
Original Contract Value	\$104,850,276
Change Order Value	\$11,254,629
Current Contract Value	\$116,104,905
Total Actual Cost (Incurred to date)	\$113,926,440
Financial Percent Complete:	98%
Physical Percent Complete:	99%
Authorized Contingency	\$11,742,514
Contingency Drawdown	\$11,254,629
Contingency Index	1.02

## **Cost Summary**

Present Financial Status	Amount
U250 Contractor - Hoffman Construction	
Co.	
Original Contract Value	\$141,745,898
Change Order Value	\$ 8,568,882
Current Contract Value	\$150,314,781
Total Actual Cost (Incurred to date)	\$150,254,810
Financial Percent Complete:	99%
Physical Percent Complete:	99%
Authorized Contingency	\$9,152,295
Contingency Drawdown	\$8,568,882
Contingency Index	1.06

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# Link Light Rail University Link Extension



### U810 Contract – Maintenance of Way

Close-out

ST and contractor have settled on a final contract amount.

## **Close-out Activities**

No more updates.

# **U830 Contract** – *Track, Signal, Traction Power* and Communications

#### Close-out

Revenue Service on March 19, 2016. Punchlist and closeout work continue.

## **Close-out Activities**

## Current Period

- Ongoing work on Systems punch list items; delivery of spare parts; and finalizing O&M Manuals, As-built drawings, and other final project documentation.
- Ongoing work on commercial closure of the U830 project. ST working closely with the GC/CM and the EC/CMs to ensure rapid and fair commercial settlement of claims.

#### Next Period

- Continue Systems punch list, spare parts delivery, and finalizing O&M Manuals and other final project documentation.
- Continue work on commercial closure of the project.

## **Closely Monitored Issues**

• None to report.

## **Cost Summary**

Present Financial Status	Amount
U810– Forma Construction (Design/ Build)	
Original Contract Value	\$11,998,725
Change Order Value	\$501,013
Current Contract Value	\$12,499,738
Total Actual Cost (Incurred to date)	\$12,438,547
Financial Percent Complete	99%
Physical Percent Complete:	99%
Authorized Contingency	\$959,898
Contingency Drawdown	\$501,013
Contingency Index	1.9

## **Cost Summary**

Present Financial Status	Amount
U830 GC/CM Contractor - Stacy & Witbeck, Inc.	
Original Contract Value	\$119,167,433
Change Order Value	\$3,849,463
Current Contract Value	\$123,016,897
Total Actual Cost (Incurred to date)	\$121,998,784
Financial Percent Complete	99.2%
Physical Percent Complete:	99.0%
Authorized Contingency	\$5,958,373
Contingency Drawdown	\$3,849,463
Contingency Index	1.5

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# Link Light Rail Northgate Link Extension



## 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 the UW Station,

boring tunnels under campus then continues north to a portal located north of NE  $94^{\rm th}$  Street on the east side of I-5, then transitioning to an aerial structure running north to the

Northgate Mall.

**Stations**: The *U District Station (UDS)* is an underground

station located on the west side of the UW campus near Brooklyn Ave. and NE 45<sup>th</sup> St. The *Roosevelt Station (RVS)* is an underground station located near NE 65<sup>th</sup> St. and 12<sup>th</sup> Ave NE. The *Northgate Station* is an elevated station located at the southwest edge of the

Northgate Mall property.

Systems: Include Signals, track electrification, and

SCADA communications.

Budget: \$1.899 Billion
Service: September 2021
Phase: Construction



# **Key Project Activities**

- Tunnel, Cross Passages, and Maple Leaf Portal (N125): The permanent slab placement, the final structural concrete placement for the N125 contract occurred early January. Crews completed the removal of equipment to allow full access for N180 to tunnels south of U District. The Milestone 5A-Substantial Completion notice and punchlist was issued for work south of the U District Station this period. Crews completed street restorations at cross passage north of Roosevelt Station and cross passage south of the portal (including construction of new ADA ramps).
- *U District Station/UW Campus (N140):* Letter of Agreement was finalized between N140 and N180. Milestone 1 was achieved on January 12th and turned over to the N180 contractor. Vibration Adjustment Estimate (VAE) work completed and equipment has been picked up from UW's campus, the tunnels and U District Station. Project staff sent right-of-entry permit renewal for UW Tower and S Building to UW for approval and signature. Hoffman crews completed shoring and decking installation for X beams, stripping block outs for stairways, ventilation ducts and electrical cases.
- Roosevelt Station (N150): Staff provided comments to SDOT's 90% design on proposed protected bike lane for NE 65th Street. Hoffman crews completed de-tensioning tiebacks at north basement level 1 deck and south walls. Crews completed column placement on north BL1 deck and basement level 2 south to roof.
- Northgate Station (N160): Staff met with Northgate Link and Lynnwood Link Extension construction management staff to plan construction staging space for N160, N180, N830 and L100. Project staff debriefed DECM ED and CEO on status of Northgate access improvement agreement negotiations with SDOT. Guideway Substructure/Superstructure: Work progressed on Spans B3 through B5 as well as columns and caps in several locations. Station: Work is progressing on Spans C2 through C3. Garage: Crews continue to move PERI table form.
- *Trackwork (N180):* N180 crews began work in tunnels south of U District Station. Production of 5 Hz floating slabs continues. Sixty five percent of the 3'-10" floating slabs have been produced. Twenty five percent of the 7'-10" floating slabs including trench caps have been produced.

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# **Closely Monitored Issues:**

- Ultra-Straight rail is in route to Vancouver. Ship sailed January 3rd. Coordination occurring between N125, N140 and N150 for handover of north tunnels (UDS to RVS).
- N125 Punch list work in the Roosevelt to U District tunnel section was completed. Elcon's in-tunnel electrical work is now the critical path to Milestone No. 6.
   Elcon continues progress between MLP and RVS, but much work remains to be completed. JCM's latest schedule shows installation testing and commissioning to be completed mid-February.



Ongoing work at Northgate Station setting Peri falsework.

# **Project Cost Summary**

The Northgate Link Extension project cost is summarized below by two cost categorizations. In the first table, the cost is summarized in accordance with Sound Transit's 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.

#### **Cost Summary by Phase**

Project Phase	Baseline Budget	Authorized Project Allocation	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
ADMINISTRATION	\$144.9	\$144.9	\$55.2	\$55.2	\$135.7	\$9.1
PRELIMINARY ENGINEERING	\$15.1	\$15.1	\$15.1	\$15.1	\$15.1	\$0.0
FINAL DESIGN	\$132.2	\$132.2	\$117.0	\$108.3	\$134.4	\$(2.3)
CONSTRUCTION SERVICES	\$118.3	\$118.3	\$103.1	\$62.7	\$110.8	\$7.5
3rd PARTY AGREEMENTS	\$11.8	\$11.8	\$10.0	\$6.6	\$12.4	\$(0.6)
CONSTRUCTION	\$1,343.0	\$1,343.0	\$1,214.7	\$723.4	\$1,333.0	\$10.1
ROW	\$112.3	\$112.3	\$93.8	\$93.7	\$106.0	\$6.3
PROJECT CONTINGENCY	\$22.2	\$22.2	\$0.0	\$0.0	\$0.0	\$22.2
Total	\$1,899.8	\$1,899.8	\$1,608.9	\$1,064.9	\$1,847.4	\$52.4

The Estimated Final Cost (EFC) for the project as of this reporting period is \$1,847.4M, which is \$52.4M below the current project budget. This period approximately \$21.9M was incurred, of which \$19.6M was for the ongoing major construction contracts including the N125 tunneling contract, the N140, N150, and N160 Station Finishes contracts, the N180 Trackwork contract and N830 Systems contract, and other miscellaneous construction; \$0.5M was incurred for Civil and Systems Final Design and Design Support During Construction; and \$1.3M was for Construction Management. The remaining expenditures were for third -party coordination, permits, staff, legal, right-of-way and other direct charges.

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### **Cost Summary by SCC**

SCC Element	Baseline Budget	Authorized Project Allocation	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
10 GUIDEWAY & TRACK	\$595.6	\$549.3	\$509.9	\$422.5	\$535.0	\$14.3
20 STATIONS	\$376.1	\$424.1	\$416.3	\$154.3	\$445.9	(\$21.8)
30 SUPPORT FACILITIES: YARD,	\$5.3	\$5.3	\$6.4	\$5.5	\$6.4	(\$1.2)
40 SITEWORK & SPECIAL CONDITIONS	\$140.8	\$224.2	\$165.1	\$120.4	\$217.4	\$6.8
50 SYSTEMS	\$110.9	\$96.7	\$106.8	\$11.6	\$102.9	(\$6.1)
Construction Subtotal (SCC 10 - 50)	\$1,228.7	\$1,299.6	\$1,204.5	\$714.2	\$1,307.6	(\$8.1)
60 ROW, LAND, EXISTING IM- PROVEMENTS	\$119.9	\$110.9	\$93.8	\$93.7	\$105.5	\$5.4
80 PROFESSIONAL SERVICES	\$420.7	\$431.6	\$310.5	\$257.0	\$428.8	\$2.8
90 CONTINGENCY	\$130.4	\$57.7	\$0.0	\$0.0	\$5.4	\$52.3
Capital Total (SCC 10 - 90)	\$1,899.8	\$1,899.8	\$1,608.9	\$1,064.9	\$1,847.4	\$52.4

#### **Cost Contingency Management**

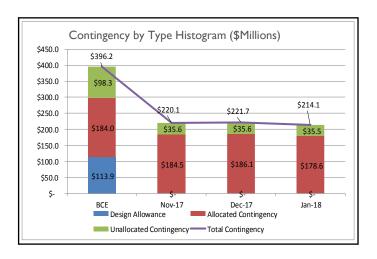
Compared to the baseline amount of \$396.2M, the Total Contingency has decreased by \$182.1M to \$214.1M, which is 27.4% of project work remaining. During this reporting period, a decrease of \$7.6M in the overall project contingency occurred. Detailed information is provided below.

**Design Allowance** – The baseline Design Allowance of \$113.9M has been fully depleted and all major contracts have been awarded.

*Allocated Contingency* – Compared to the baseline amount of \$184.0M, Allocated Contingency has decreased by \$5.4M to \$178.6M. During this reporting period, a decrease of \$7.6M occurred due to the execution of change orders on the Civil CMC contract, the N125 Tunneling contract, the N150 and N160 Station Finishes contracts, and the N180 Trackwork contract.

*Unallocated Contingency* – Compared to the baseline amount of \$98.3M, Unallocated Contingency has decreased to \$35.5M. During this reporting period, a decrease of \$0.1M occurred due to reallocation of funds as a result of adoption of the 2018 budget.

	Base	eline	Current			
Contingency Status	Amount	% of Total	Amount	% of Work Remain- ing		
Design Allowance	\$113.9	5.3%	\$ -	0.0%		
Allocated Contingency	\$184.0	8.6%	\$178.6	22.8%		
Unallocated Contingency	\$98.3	4.6%	\$35.5	4.5%		
Total	\$396.2	18.6%	\$214.1	27.4%		



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# **Project Schedule**

As January 2018, all Lynnwood Link civil contracts are under construction and the calculated physical percent complete for all major construction contracts is approximately 55%.

The N125 Tunneling Contractor (JCM) continues to work toward Substantial Completion, Milestone No. 6. Punchlist work is continuing between UWS and RVS, with the bulk of the work belonging to the Electrical Subcontractor (Elcon). JCM is completing the systems conduit, grading, and restoration work at the Maple Leaf Portal. Along the tunnel alignment, surface restorations continue. Substantial Completion is still forecast for mid-February 2018.

The N140 U District Station contractor, Hoffman Construction, is continuing with basic structure construction at Basement Level 2. In the center area, the X-Beams and Walers have been poured. Hoffman has turned over Work Area "A" to Stacy & Witbeck, Inc. (SWI), N180 contractor, for use in staging and installing the floating slabs, thus achieving Milestone No. 1 of the contract.

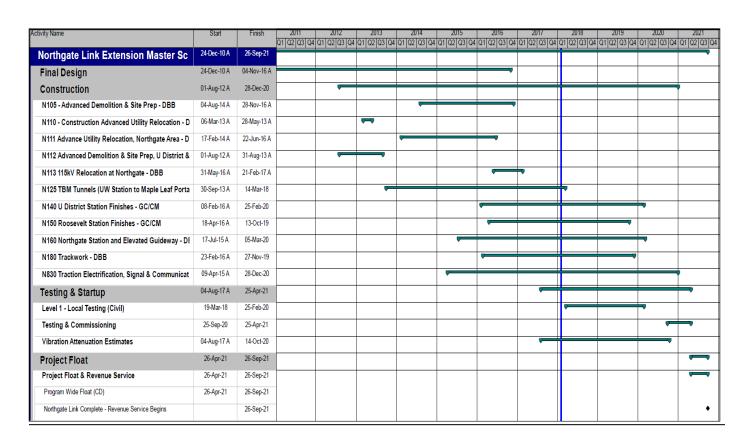
At Roosevelt Station (RVS), the N150 contractor, Hoffman Construction, completed the North Basement Level 1 columns and is working on the roof level structural concrete. Center wall pours are continue to move up. At the south end of the station, the columns supporting the Basement Level 1 is nearing completion.

The N160 Contractor, Absher has completed the FC-1 and FC-2 Detention Vaults and is working on the FC-3 vault. Platform level track slabs are ongoing. Columns, column caps, diaphragms, and span construction continues at Guideway Units 1 through 5. At the Garage, the Basement Level 2 North and South Decks have been completed. Work is now underway to form the Basement Level 1 on the north end.

On the N180 Trackwork contract, production casting of the 3'10" slabs (40/week) and the 7'10" slabs is continuing. The Ultra-Straight Rail is still scheduled to arrive in Vancouver, B.C in mid-February. SWI is mobilizing at the UDS site to begin Floating Slab installations in March.

The N830/E750 Systems Contractor, Mass Electric, is continuing to work on early engineering. The work at Convention Place Station is near completion. Mass Electric is continuing the process of selecting major subcomponent suppliers

ST has completed the analysis of the impact of the Teamster Strike on N140, N150, and N160 contracts. Change Orders have been executed for N150 and N160, with the N140 impact and change expected to be complete in late February. Revenue Service date for Northgate Link Extension is scheduled in September 2021.

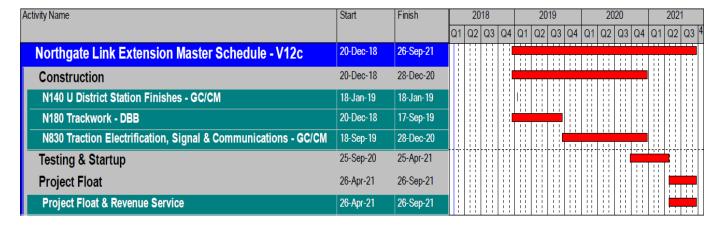


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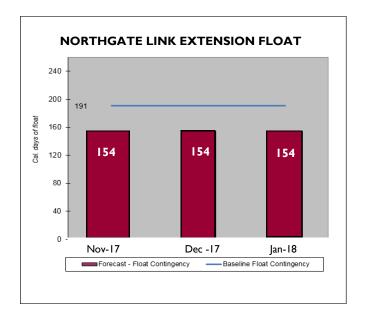
# **Critical Path Analysis**

The critical path for the Northgate Link Extension continues to rest in the N140, N180, and N830 contracts. The N140 contractor did achieve the key milestone to turnover a portion of the Station platform slab to the N180 contractor. ST and the N140 contractor, Hoffman, have agreed to the Teamsters Strike impact. The resulting change in interface milestones has also been agreed to by the follow-on trackwork and systems contractors.



#### Critical Path Float

The Northgate Link Project currently retains 154 days of unallocated project float. Should the project be unable to retain the remaining contract interface floats some project float may need to be used.



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# **Construction Safety**

Data/ Measure	January 2018	Year to Date	Project to Date
Recordable Injury/Illness Cases	2	2	81
Days Away From Work Cases	0	0	6
Total Days Away From Work	0	0	397
First Aid Cases	7	7	104
Reported Near Mishaps	3	3	87
Average Number of Employees on Worksite	564	564	-
Total # of Hours (GC & Subs)	83,531	83,531	2,991,664
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	4.79	4.79	5.42
Lost Time Injury (LTI) Rate	0.00	0.00	0.40
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. Starting January 2018, only OSHA Recordable Injuries and Lost Time Injury (LTI) cases will be reported to better reflect the Agency Scorecard metrics.

# Right of Way

The U District and Roosevelt stations required the acquisition of a range of property interests including fee takings for stations and staging areas; tunnel easements are required for the running tunnel. These acquisitions are complete with the exception of one remaining parcel at the Northgate Station area which was forecast to settle in 2017 but has been moved out to 2018 to accommodate King County's Board schedule. The right-of-way program status is summarized in the following table.

	Total Parcels Certified	Offers Made	Signed Agree- ments	Admin. Settle- ments	Posses- sion and Use (P&U)	Closings to date	Baseline Relocations Required	Relocations Completed
Total	235	233	0	0	0	231	42	42

# **Community Outreach**

 Updates regarding Community Outreach are in the Sound Transit website:

https://www.soundtransit.org/Projects-and-Plans/Find-a-Project.

## **Environmental**

None to report.

# **Sound Transit Board Actions**

Board Action	Description	Date
	None to report.	

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# Link Light Rail Northgate Link Extension



# **Major Construction Contract Packages**

Below are the major construction contract packages for the Northgate Link Extension 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.

**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 U District 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.

# **Construction Schedule Highlights**

Package	Bid Advertisement	NTP	Substantial Completion
N105-Advance Demolition & Site Prep	Mar 2016A	May 2016A	Nov 2016A
NIII-Advanced Utility Relocation	Sept 2014A	Jan 2015A	Apr 2016A
N113-SCL 115kV Relocate	Feb 2016A	June 2016A	Feb 2017A
N125-Station Box Exc. & TBM Tunnels	Jan 2013A	Sep 2013A	Feb 2018
N140-U District Station Finishes	Oct 2013A (GC/CM-Precon)	April 2017A (construction )	Jan 2020
N150-Roosevelt Station Finishes	Apr 2013A (GC/CM-Precon)	Dec 2016A (construction)	Sep 2019
N160-Northgate Station & Guideway & Parking Garage	Apr 2016A	Sept 2016A	Jan 2020
N180-Trackwork to Northgate Station	Apr 2016A	Sept 2016A	Oct 2019
N830-Traction Power, Signals & Com	May 2015A (GC/CM-RFQ)	Jun 2017A (construction)	Dec 2020

A = Actual

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# Link Light Rail Northgate Link Extension - Construction

# Contract N125 - TBM Tunnels

## **Current Progress**

The N125 Contractor, JCM, is continuing work toward completion of the Cross Passages, and Maple Leaf Portal (MLP) Structure. Punchlist work continues in the tunnel segment between U District Station (UDS) and Roosevelt Station (RVS).

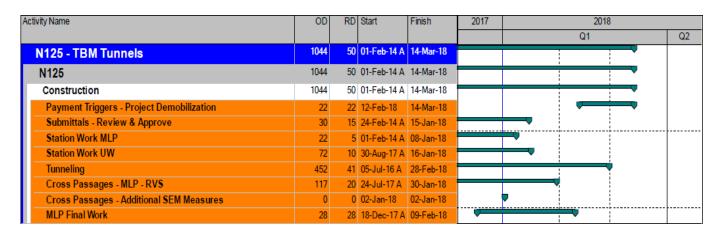
*Tunnel Finishes* – Crews continue to work toward completion of Electrical and Fire Standpipes between MLP and RVS. Punchlist work continues between UDS and UWS and is now 98% complete.

*Cross Passage Construction*—Work in progress at the end of this period includes: surface restorations at cross passage locations, continuing firestand pipe installation, and electrical installations. Installation of tunnel signage and hand railing is underway. Punchlist work continues between UDS and RVS, as well as UWS and UDS.

Maple Leaf Portal—JCM is installing the systems conduit, repairing concrete, completing the final backfill, and performing street and sidewalk restoration.

#### Schedule Summary

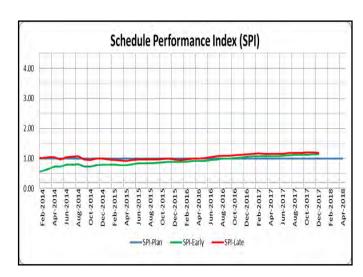
JCMs' December schedule update indicates a slip of two weeks in completion of the work. The slippage is driven by the remaining electrical work at MLP. Fire Standpipe and Electrical work in the cross passages between RVS and MLP are shown as 95% complete but unfinished with the completion dates slipping by three weeks. ST is working with JCM to avoid delay to the MLP turnover to N180.



### **Schedule Performance Index**

The early SPI for this period is 1.1, and the late is 1.2 as the project nears Substantial Completion anticipated in February 2018.

The schedule update reports a Performance Percent complete of 99% with a Cost Percent complete of 98%.



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# Link Light Rail Northgate Link Extension - Construction



## **Key Activities**

#### Current Period

- Completed post-construction building surveys along tunnel alignment.
- Continued instrumentation decommissioning and surface restoration.
- Continued electrical termination/installation inside cross passages and fire standpipes corrective work for SFD witness testing.
- Continued branch wire pulling in tunnels.
- Milestone 5A: Approximately 98% of punch list items have been closed out to date.
- Completed installation of UPS systems and electrical work in the electrical/storage room at UWS.
- Energized lighting circuits UWS to UDS.
- Continued installation of SB/NB systems conduits along MLP west/east structural walls.
- Continued backfill and grading of slope adjacent to I-5.

#### Next Period

- Complete final asphalt paving and striping at cross passage surface locations (weather dependent).
- Complete electrical testing and commissioning work in tunnels.
- Complete labelling, testing, and commissioning of mechanical components.
- Complete punch list items.
- Complete remaining concrete work and site restoration at MLP.
- Continue JCM demobilization from site.

#### **Closely Monitored Issues**

• Milestone No. 6 is due on February 11, 2018. The first day of Sound Transit's Controlled Float was January 17, 2018; JCM was required to have substantially completed its work by January 16, 2018. At present, JCM's electrical subcontractor is still installing wiring in all cross passages north of Roosevelt. JCM's latest schedule shows installation testing and commissioning being completed on 02/16/18. JCM has submitted a letter requesting that Sound Transit acknowledges Substantial Completion of Milestone No. 6 Work, effective January 16, 2018.

#### **Cost Summary**

Present Financial Status	as Amount			
N125 Contractor - JCM Northlink				
Original Contract Value	\$	440,321,000		
Change Order Value	\$	58,514,752		
Current Contract Value	\$	498,835,752		
Total Actual Cost (Incurred to date)	\$	491,542,092		
Financial Percent Complete:		98.5%		
Physical Percent Complete:		98.7%		
Authorized Contingency	\$	66,048,150		
Contingency Drawdown	\$	58,514,752		
Contingency Index		1.11		



NB Tunnel: Elcon wire pulling from CP38 towards RVS.

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# Link Light Rail Northgate Link Extension - Construction

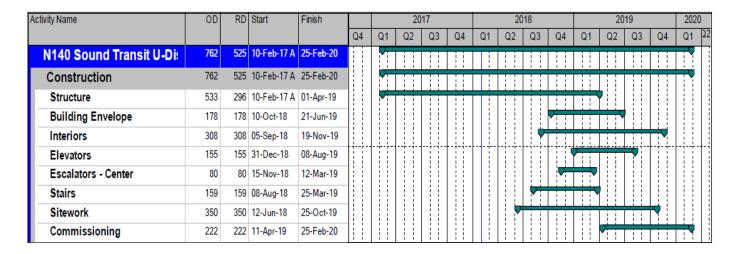
# Contract N140 - U District Station Finishes

## **Current Progress**

The N140 Contractor, Hoffman Construction (HCC), continues to progress on the structural work between basement levels 2 and 3, including concrete placements for the north headwall, elevator walls, and exterior walls. The x-strut and walers were also poured in January. The impact and mitigations for the Teamster Strike have been agreed upon.

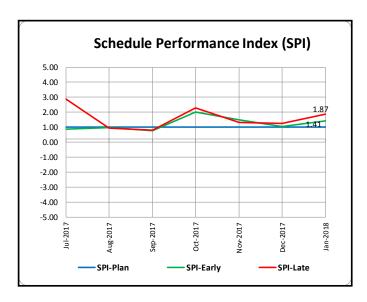
#### Schedule

The January schedule update shows an improvement in the overall project duration. The schedule does, however, show negative float as ST is continuing to work with HCC on mitigation measures that could recover time on interim milestones. HCC did achieve Milestone No. 1, turning over the tunnels south of UDS and Area A to the N180 contractor for the floating slab installation.



#### Schedule Performance Index

This period, the SPI early is at 1.41 and the SPI late is 1.87. The early index indicates that the Contractor is right on track with the expected progress. The project remains on track for schedule and cashflow.



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# Link Light Rail Northgate Link Extension - Construction



## **Key Activities**

#### **Current Period**

- Milestone No. 1 Turnover of Work Area A and Tunnel to N180 was completed on-time.
- South Basement Level (BL)3 12" interior and elevator shear walls poured.
- South BL3 East exterior wall and pilaster poured. Waterproofing completed at the west and south walls.
- North and South BL2 mud slabs were poured.
- Center exterior walls WC2 and WC3 were poured. Forming completed on exterior wall EC3.
- Setup & Rough-in began at the second set of walers and x-struts.
- At the North BL3, elevator shearwalls were poured, east exterior wall and pilaster poured and waterproofing completed at the west and north walls; suspended slab pour completed; rebar and rough-in continues at the interior concrete walls.

#### Next Period

- Procurement of long lead materials and equipment will continue.
- Rebar, rough-in, forming, and concrete activities are planned at South & North BL3 interior partition walls.
- South BL2 base slab waterproofing is underway in preparation for the invert slab.
- The second set of walers and x-struts are scheduled to pour.
- Rebar and formwork continues on the headwall at North BL3 with the pour to follow.
- Concrete work at the center will continue with more column, x-strut and waler pours.
- North BL2 Invert slab pour is anticipated for late February which will kick off saddlebag wall work.

#### **Closely Monitored Issues**

 The CM team has reviewed and agreed with the contractor's TIA for the Teamster Strike and is pending CCB approval. The change also includes redefining milestones to prioritize critical handover dates to the follow on contractors.

## **Cost Summary**

Present Financial Status	Amount
N140 Contractor - Hoffman Construction	
Original Contract Value	\$159,836,688
Change Order Value	\$100,000.00
Current Contract Value	\$159,936,688
Total Actual Cost (Incurred to date)	\$33,104,096
Financial Percent Complete:	20.7%
Physical Percent Complete:	19.2%
Authorized Contingency	\$7,991,834
Contingency Drawdown	\$100,000
Contingency Index	15.3



U District Station – Overall station looking north.

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# Link Light Rail Northgate Link Extension - Construction

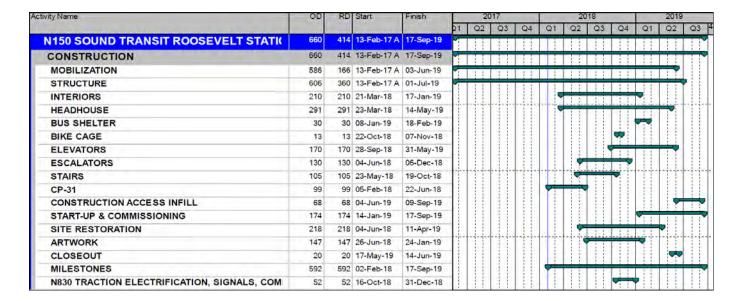
## Contract N150 – Roosevelt Station Finishes

## **Current Progress**

Hoffman Construction (HCC) is working steadily toward completion of the station substructure. Crews are forming and placing rebar for the center walls and roof. Formwork, rebar installation and pouring of the south walls continues.

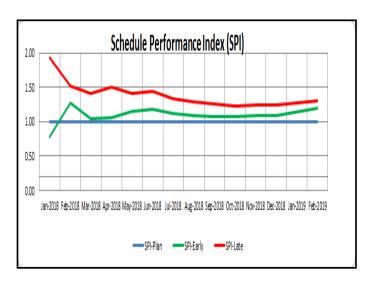
#### Schedule

The project schedule for January forecast no slippage this period. The impact of the Teamster Strike has been settled and the resultant change order has been incorporated into the schedule. Hoffman has working toward Milestone No.1B and is expecting to achieve it in early February. This will allow the trackwork contractor access to the trainways at the platform level.



#### **Schedule Performance Index**

This period, the SPI early is at 1.2 and the SPI late is 1.3. The early index indicates that the Contractor continues performing slightly ahead of plan when compared to the baseline schedule. The project remains on track for schedule and cashflow.



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# Link Light Rail Northgate Link Extension - Construction



## **Key Activities**

#### Current Period

- Continued to prepare and process submittals and RFIs.
- Began top mat rebar for the south BL3 elevated deck and relocated the man lift to the center platform area.
- Began installation of conduits, formwork, rebar and placed key wall extensions in the north BL1.
- Continued forming, rebar and placed for south columns from BL2 and BL3.
- Placed concrete for the center walls and completed the bottom rebar mat for the north BL1 elevated deck.
- Began forming and rebar for center beams.
- Continued deck forming for south basement level two.
- Placed concrete for the center lift walls at manlift.
- Placed concrete for decks, walls and columns at several locations within the station.

#### Next Period

- Complete bottom rebar mat for north BL1 elevated deck.
- Commence installation of conduits in the north BL1 slab.
- Form, rebar and place keyed wall extensions for north BL1.
- Place concrete for center walls.
- Continue with forming, rebar and place for south columns from BL3 to BL2.

## **Closely Monitored Issues**

- Contractor submitted RFC 006- Notice of Impact of Concrete Supply time impact analysis requesting \$0 and 12 additional calendar days to the critical path milestones. HCC revised time impact analysis to CM and ST for review. A request for 12 days to Milestone 1A and 9 days for Milestone 3 has been reviewed by CM and ST and CCB review is scheduled for February 2018.
- Design has received comments back from Sound Transit on a draft of CNWD 013A for added escalator control room. Corrections are being incorporated by design and expected to be complete this month.
- The drilling subcontractor's availability is awaited from JCM.

## **Cost Summary**

Present Financial Status	Amount		
N150 Contractor - Hoffman Construction			
Original Contract Value	\$152,291,184		
Change Order Value	\$1,269,477		
Current Contract Value	\$ 153,560,661		
Total Actual Cost (Incurred to date)	\$ 45,831,385		
Financial Percent Complete:	29.9%		
Physical Percent Complete:	28.2%		
Authorized Contingency	\$ 7,614,559		
Contingency Drawdown	\$ 1,269,477		
Contingency Index	1.7		



RVS view of station box activities looking south.

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# Link Light Rail Northgate Link Extension - Construction

# Contract N160 - Northgate Station, Elevated Guideway, and Parking Garage

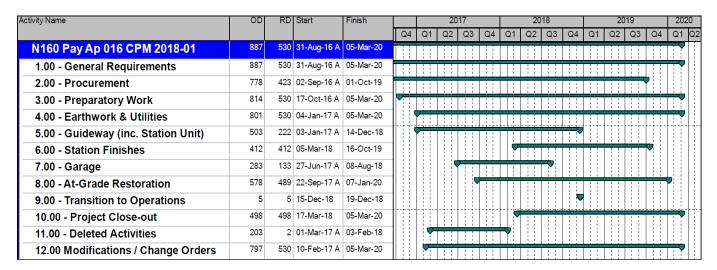
#### **Current Progress**

The N160 Contractor is continuing work on the station platform level spans and track slabs. Form, rebar, and pours for the Units 1 and 2 guideway columns, caps, diaphragms, and spans are continuing. Installation of detention vault FC-3 is underway.

At the Parking Garage, work is progressing for the BL1 north deck, and elevator core. Conduit installation is now underway on Level 4.

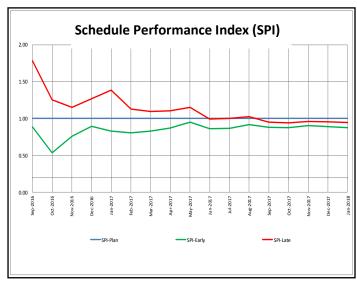
#### Schedule

The N160 Contractor's January schedule update now forecasts a completion of March 5, 2020, 6 days behind schedule and improvement of 7 days from the December update. The completion of Elevated Guideway Units 1—5 has improved and now forecasts positive float of 2 days. The Parking Garage completion, Milestone No. 3, however continues to lag, showing negative twelve days of float. Absher continues to work extended hours to recover and to coordinate closely with the Systems contractor on access, Milestone 3a.



#### **Schedule Performance Index**

This period, the SPI early is at 0.89 and the SPI late is at 0.95. The early index indicates that the Contractor continues performing slightly behind plan when compared to the baseline schedule.



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# Link Light Rail Northgate Link Extension - Construction



### **Key Activities**

#### Current Period

- General Project Progress: Continued processing and reviewing of submittals and RFIs; held Readiness Review meeting for Stage 3 Girder Erection, B6 Span Corrections, Expansion Joints and FC-3 Vault installation.
- Guideway Substructure/Superstructure: Continued columns and caps on A and B lines. Placed the final column at A5. Continued falsework, rebar, PT and concrete placement for A- and B-line spans, plinths, diaphragms, and track slabs. Began repair on girders at span 6.
- *Station:* Continued forming and rebar for C-span deck, beams and escalator embeds. Placed span C1 concrete.
- *Parking Garage:* Continued conduit, PT and rebar installation. Completed shotcrete at B1 level. Completed concrete placement at B2 slab and delay strips. Moved formwork from B2 to B1 and began rebar and PT installation. Forming elevator core walls to level 1.
- Utility & Drainage Work: TESC Maintenance ongoing. Continued screen wall piles and drilled stair tower shafts. Set manholes and piping along jurisdictional ditch. Completed SCL 814 vault conduit.
- Offsite Fabrication: ongoing fabrication—girders, structural steel, drainage structure precast segments and escalators.

#### Next Period

- General Project Process: Continue processing and reviewing of submittals and RFIs. Escalators Factory tour/inspection
- Guideway Substructure/Superstructure: Continue formwork, rebar and concrete placement for columns/caps. Continue B-line track slabs and girders. Continue placing overhang brackets, walkway and edge forms, and intermediate diaphragms. Complete repair on girders at span 6.
- Station: Continue decking platform spans and rebar/PT/ embeds in deck and beams.
- *Parking Garage:* Continue wall and column rebar and concrete placement. Continue setting shoring and deck for Level B1 floor and beams. Continue conduit installation.
- Utility & Drainage Work: Complete prep work and installation of FC-3 drainage vault.

## **Closely Monitored Issues**

- Girders at span 6 have insufficient clearance to allow for expansion joint. Repair plan to sawcut and jack the girders is under review to correct this situation.
- Schedule slippage on elevated structure Contractor to provide means of recovery.
- Labor shortages for skilled tradespeople may impact schedule.
- Ethernet switches delivered to site have a potential UL-Listing issue which is under review.

## **Cost Summary**

Present Financial Status	Amount		
N160 Contractor - Absher Construction			
Original Contract Value	\$	174,000,000	
Change Order Value	\$	4,232,558	
Current Contract Value	\$	178,232,558	
Total Actual Cost (Incurred to date)	\$	78,444,431	
Financial Percent Complete:		44.0%	
Physical Percent Complete:		42.2%	
Authorized Contingency	\$	17,400,000	
Contingency Drawdown	\$	4,232,558	
Contingency Index		1.73	



Span B4 rebar installation—looking south.

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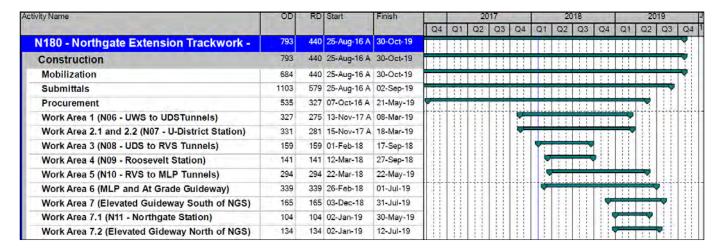
# Contract N180 - Trackwork UWS to Northgate Station

### **Current Progress**

The N180 Contractor, Stacy & Witbeck, Inc. (SWI) has begun mobilizing at UDS in preparation for installation of the floating slab segments. The Ultra-Straight Rail (USR) is being produced at the British Steel facility in France and is set to ship at the beginning of January by sea to Vancouver B.C. The pre-cast yard in Woodland continues in production casting of the 3'10" slabs at a rate of 40/week. The 7'10" slabs are also in production status. Testing is the isolation pads is expected to be completed in early January. The N180 Contractor has been meeting with the N140, N160, and N150 contractors to work on the interface and access coordination at the station locations.

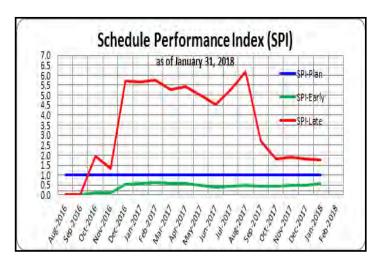
#### **Schedule Summary**

The N180 schedule for January forecasts late achievement of Milestones 7c and 7d, by 13 and 9 days respectively, due to potential delay in getting access to the Maple Leaf Portal, as the N125 Tunnel contractor vacates that area. A delay in access would potentially delay the start of rail welding operations for both the Ultra-Straight and Standard rail. All other milestones remain on or ahead of schedule.



#### **Schedule Performance**

This period the SPI early is at 0.49. The Contractor, SWI, continues to perform ahead of the Late Schedule (SPI 1.80) and behind the early schedule (SPI 0.49). Performance in between the curves is normally what is expected. Due to late access to the tunnel, SWI is behind the baselined schedule, but continues to meet their goals for early work such as material procurement and fabrications.



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# Link Light Rail Northgate Link Extension- Construction



### **Key Activities**

#### Current Period

- Columbia Precast Products (CPP) continued casting roughly forty floating slabs per week. Total cast to date: 3'-10": 917 of 1366 slabs (67%); 7'-10": 73 of 252 slabs (29%)
- Scougal Rubber Corporation (SRC) completed 5Hz shim production, continued production of side pads (50% complete) and continued qualification testing of main support pads type II, III, IV.
- Progress Rail began rolling standard and high-strength rail
- British Steel has shipped Ultra Straight Rail (USR) on January 3 and is set to arrive in New Westminster, B.C. on February 15, and be delivered at MLP on February 28.
- Tunnel lights and cross passage (CP) power has been energized at UWS and UDS. SWI has started their temporary power drops at the CP's.
- SWI's subcontractor American Concrete Company (ACC) continued invert scarification in the NBT for future support surface and plinth work.
- Continued drilling embeds for floating slab support surface rebar in NBT.

#### Next Period

- SWI to continue the install of their control survey in the tunnels between UWS and UDS.
- CPP to continue casting 3'-10" and 7'-10" floating slabs, and trench caps.
- SRC to continue producing tapered side shim pads, side and end separation pads, and type I main support pads.
- SWI to continue preparing for the track tie in at UWS and the first floating slab support surface pour in the northbound tunnel.
- LE to continue 26kV cable installation in the SBT, complete splicing, and innerduct installation.

#### **Closely Monitored Issues**

• None to report.

## **Cost Summary**

Present Financial Status	Amount
N180 Contractor - Stacy & Witbeck, Inc.	
Original Contract Value	\$ 71,455,950
Change Order Value	\$ 2,543,766
Current Contract Value	\$ 73,999,716
Total Actual Cost (Incurred to date)	\$ 18,040,059
Financial Percent Complete:	24.4%
Physical Percent Complete:	22.4%
Authorized Contingency	\$ 10,718,393
Contingency Drawdown	\$ (2,543,766)
Contingency Index	1.03



Liberty Electric - Placement of the 26kV cable within the UWS. Work took place during nonrevenue, under a Track Access Permit.

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# Link Light Rail Lynnwood Link Extension



# 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 communi-

cations (SCADA).

**Budget:** \$488.4 Million Pre-baseline Budget;

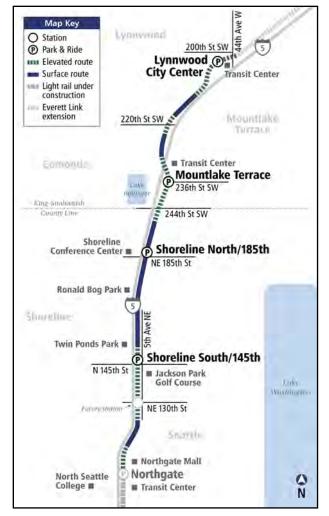
excludes Construction (Year of Ex-

penditure Dollars)

**Phase:** Final Design

Const. Starts: 2018

Service: Mid 2024



Map of Lynnwood Link Extension Alignment.

# **Key Project Activities**

- L200 60% civil design submitted in February 2017; reviews completed in March 2017.
- L300 60% civil design submitted in March 2017; reviews completed in April 2017.
- L800 60% systems design submitted in June 2017; reviews completed in August 2017.
- Design Advancement paused in July 2017 to pursue cost reduction strategies and was restarted in October 2017.
- Conducted Cost Reduction reviews with 3rd party jurisdictions in September 2017.
- WSDOT completed engineering review of L200 Temporary Construction Air Space Lease (TCAL) and Air Space Lease (ASL); review began on August 7, 2017; L300 submitted to WSDOT on July 3, 2017.
- Continuing right of way acquisition and pre-construction planning.

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# Link Light Rail Lynnwood Link Extension

# **Project Cost Summary**

The Lynnwood Link 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.

Commitment and Actuals under Construction Phase is related to Construction Permits for early demolition work associated with ROW Property Acquisitions.

#### **Cost Summary by Phase**

Project Phase	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$88.3	\$20.3	\$20.2	\$88.3	\$0.0
Preliminary Engineering	\$42.0	\$39.1	\$39.1	\$42.0	\$0.0
Final Design	\$111.5	\$82.7	\$53.0	\$111.5	\$0.0
Construction Services	\$104.9	\$19.6	\$8.8	\$104.9	\$0.0
3rd Party Agreements	\$17.4	\$7.0	\$3.3	\$17.4	\$0.0
Construction	\$67.6	\$0.6	\$0.3	\$67.6	\$0.0
Light Rail Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$235.7	\$83.1	\$79.1	\$235.7	\$0.0
Total	\$667.3	\$252.5	\$203.9	\$667.3	\$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	\$67.6	\$0.6	\$0.3	\$67.6	\$0.0
50 Systems	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Construction Subtotal (10 - 50)	\$67.6	\$0.6	\$0.3	\$67.6	\$0.0
60 Row, Land	\$235.7	\$83.1	\$79.1	\$235.7	\$0.0
80 Professional Services	\$364.1	\$168.8	\$124.4	\$364.1	\$0.0
90 Unallocated Contingency	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total (10 - 90)	\$667.3	\$252.5	\$203.9	\$667.3	\$0.0

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# Link Light Rail Lynnwood Link Extension



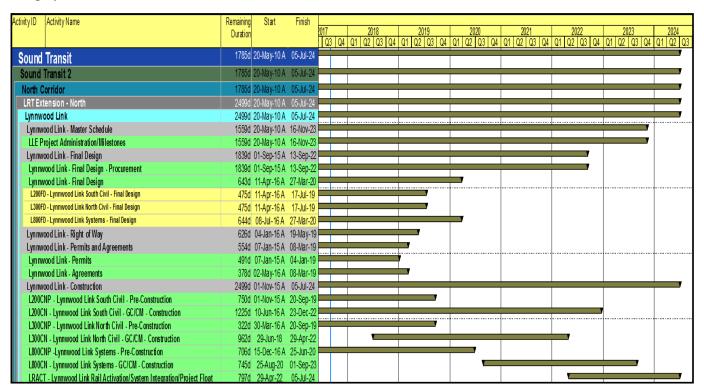
# Risk Management

The Lynnwood Link 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, 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 last Lynnwood Link Quarterly Risk Review Workshop was held in May 2017. The project completed a full quantitative risk assessment workshop in November 2017, and received draft results in January 2018. The next Lynnwood Link Quarterly Risk Review Workshop will be held in early March 2018.

## **Project Schedule**

The project schedule is shown below.



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# Link Light Rail Lynnwood Link Extension Final Design

# Right-of-Way

The Right-of Way project for Lynnwood Link 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									
Line Section	Board Approved Negotiations Signed Agreements Signed Signed Agreement Settlement Settlem								
L200– South Segment	208	77	0	0	0	52	190	89	
L300—North Segment	55	12	0	I	0	10	30	6	
Total*	263	89	0	I	0	62	220	95	

<sup>\*</sup>Note- number of totals may differ from other reports due to the timing of reporting periods.

#### L200 -Northgate to NE 200th Street Parcels

1 additional offer made; 2 additional parcels closed; 11 additional relocation identified; 9 additional relocations vacated.

#### L300- NE 200th Street to Lynnwood Transit Center

7 additional relocation identified; 2 additional relocations vacated.

## **Sound Transit Board Actions**

Board Action	Description	Date
M2018-10	Execute a Transit way Agreement with the City of Shoreline to grant Sound Transit non— exclusive use of the light rail transit way within City of right —of- way to construction, operate, maintain and own a light rail transit system for the Lynnwood Link Extension.	Jan 25
M2018-11	Execute a Funding and Cooperative Agreement with the City of Shoreline for (I) certain station area access enhancements for a total amount not to exceed \$4,000,000; and (2) provides terms that address permitting for early project work, certain street station petitions and future projects for station access that will be separately presented for approval if additional funding is required.	Jan 25

# **Community Outreach**

 Updates regarding Community Outreach are in the Sound Transit website:

https://www.soundtransit.org/Projects-and-Plans/Find-a-Project.

## **Environmental**

None to report.

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# Link Light Rail Lynnwood Link Extension Final Design - Civil



# Civil Final Design Overview

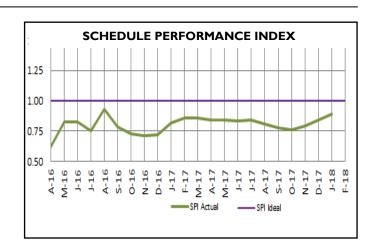
Sound Transit executed a professional services contract with HNTB Jacobs in April 2016 to perform Civil Final Design Services.

## **Civil Final Design Activities**

- Cost Savings Ideas Development completed.
- Civil Final Design activities restarted on October 9, 2017.
- Current focus is on incorporating costs savings ideas, advancing concepts to achieve concurrence and lock the track
  alignment and guideway column locations so follow on disciplines (Systems Final Design) can resume design activities.

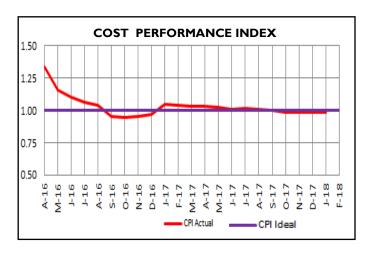
# **Civil Final Design Schedule Performance Index**

The cumulative Schedule Performance Index (SPI) trends at 0.89 through January 2018, which means that cumulative work accomplished is less than work originally planned. The Civil Final Design cost savings ideas development was completed on October 9, 2017. While schedule performance is trending negatively, it is expected to increase over the next couple of reporting periods as civil design activities have restarted and cost savings ideas will be incorporated into the project design.



# Civil Final Design Cost Performance Index

\$49.5M of the total contract amount, 68%, has been spent through January 2018. The Civil Final Design percent complete is 67%, with an earned value of \$48.7M. The cumulative Cost Performance Index (CPI) through January is 0.98 indicating that expenditures are slightly higher than the earned value of work performed.



Final Design Performance	Cumulative To-date
Amount Invoiced	\$49.5M
% Spent	68%
Earned Value	\$48.7M
% Complete	67%
SPI	0.89
СРІ	0.98

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# Link Light Rail Lynnwood Link Extension Final Design - Systems

# Systems Final Design Overview

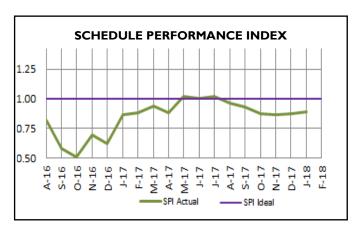
Sound Transit executed a professional services contract with LTK Engineering in July 2016 to perform Systems Final Design Services.

### **Systems Final Design Activities**

- L800 60% cost estimate submitted to Sound Transit on August 25, 2017.
- L800 60% cost estimate reconciliation was completed on September 27, 2017.
- Systems Design activities resumed in October 2017 to support the Civil design evaluation and cost reduction strategies.

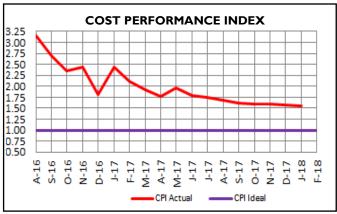
## **Systems Final Design SPI**

The cumulative Schedule Performance Index (SPI) trends at 0.89 through January 2018, which means that cumulative work accomplished is behind the work originally planned. This is directly attributed to the design hold due to cost savings ideas development. As the Systems Final Design team is provided updated civil information, it is expected that SPI will start to trend positive as design ramps back up.



# **Systems Final Design Cost Performance**

\$2.9M of the total contract amount, 31%, has been spent through January 2018. The Systems Final Design percent complete is 49%, with an earned value of \$4.6M. The cumulative Cost Performance Index (CPI) through January is 1.56 indicating that expenditures are significantly lower than the earned value of work performed.



Final Design Performance	Cumulative To Date
Amount Invoiced	\$2.9M
% Spent	31%
Earned Value	\$4.6M
% Complete	49%
SPI	0.89
СРІ	1.56

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## Link Light Rail Lynnwood Link Extension Construction Mgmt - Civil



## **Civil Construction Management Overview**

Sound Transit executed a professional services contract with PGH Wong in May 2016 to perform Civil Construction Management (CMC) Services

#### **Civil Construction Management Activities**

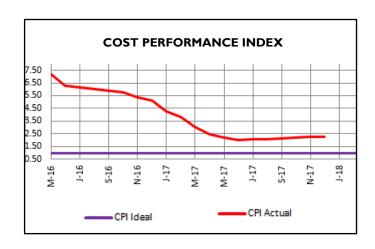
- Coordinating meetings with design, GC/CM, and ST teams.
- Coordination on various preconstruction activities including cost estimates, schedule, and constructability.
- Coordinating GC/CM review of 60% submittals and Project wide effort towards value engineering.

#### **Civil Construction Management Schedule Performance Index**

Work by the CMC is on a level-of-effort basis to support Sound Transit during the final design/pre-construction period. Earned value for level-of-effort is calculated as equal to the planned value, so SPI = 1.00.

#### Civil CM Cost Performance Index

\$3.4M of the total contract amount, 45%, is spent through January 2018, with an earned value of \$7.5M. The cumulative Cost Performance Index (CPI) through January is 2.23; indicating significantly lower costs than expected on the contract. The Consultant assumed more support staff would be required early in the schedule and that has not been the case, leading to a high CPI. Phase 2 of the contract will be implemented April 2018, generating a new plan.



Civil CM Performance	Cumulative To-date
Amount Invoiced	\$3.4M
% Spent	45%
Earned Value	\$7.5M
СРІ	2.23

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## Link Light Rail Lynnwood Link Extension GC/CM Pre-Construction

## 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.

#### L200 GC/CM Pre-Con Activities

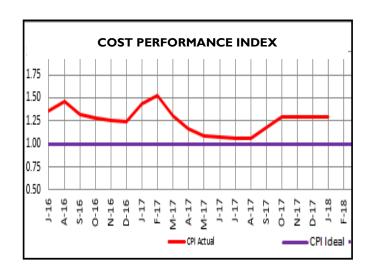
- Coordinating meetings with design, CM, and ST teams.
- Progress on various preconstruction activities including cost estimates, schedule, and constructability.
- Project wide effort towards value engineering.

#### L200 GC/CM Pre-Con Schedule Performance Index

Driving the L200 GC/CM Contract is the LLE Final Design contract; GC/CM Pre-Construction work is on a level-of-effort basis to support Sound Transit during the final design/pre-construction period. Earned value for level-of-effort is calculated as equal to the planned value, so SPI = 1.00.

## L200 GC/CM Pre-Con Cost Performance Index

\$2.9M of the total contract amount, 58%, is spent through January 2018, with an earned value of \$3.8M. The cumulative Cost Performance Index (CPI) through January is 1.30; indicating actual costs are lower than planned. Planned Values will be re-aligned with an extension to the Pre-Construction Schedule; CPI is anticipated to trend closer to 1.0 in the future.



L200 GC/CM	Cumulative To-date
Amount Invoiced	\$2.9M
% Spent	58%
Earned Value	\$3.8M
СРІ	1.30

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## Link Light Rail Lynnwood Link Extension GC/CM Pre-Construction



## 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 GC/CM Pre-Construction Services for the L300 segment.

#### L300 GC/CM Pre-Con Activities

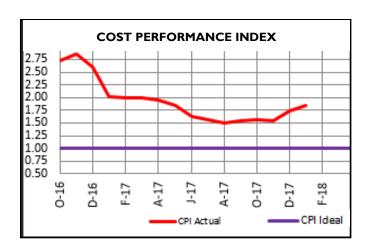
- Coordinating meetings with design, CM, and ST teams.
- Progress on various preconstruction activities including cost estimates, schedule, and constructability.
- Project wide effort towards value engineering.

#### L300 GC/CM Pre-Con Schedule Performance Index

Driving the L300 GC/CM Contract is the LLE Final Design contract; GC/CM Pre-Construction work is on a level-of-effort basis to support Sound Transit during the final design/pre-construction period. Earned value for level-of-effort is calculated as equal to the planned value, so SPI = 1.00.

## L300 GC/CM Pre-Con Cost Performance Index

\$2.3M of the total contract amount, 43%, has been spent through January 2018, with an earned value of \$4.3M. The cumulative Cost Performance Index (CPI) through January is 1.85; indicating actual costs are lower than planned. Planned Values will be re-aligned with an extension to the Pre-Construction Schedule; CPI is anticipated to trend closer to 1.0 in the future.



L300 GC/CM Performance	Cumulative To-date
Amount Invoiced	\$2.3M
% Spent	43%
Earned Value	\$4.3M
СРІ	1.85

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



**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.

**Budget:** \$225.6 Million

Phase: Construction **Construction Start:** January 2015

**Construction Complete:** First Quarter 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
WSDOT	Final Design	\$ 20,942,000
WSDOT	CM Services	\$ 16,358,000
IMCO	Construction	\$122,021,000

## **Key Project Activities**

- Work outside the tunnels: Network redundancy testing & training simulator demonstration at Traffic Management Center, continue resolving punch list, and clean up/demobilize from remaining work areas.
- Mercer Island Tunnel: Cleanup and warranty work, continue resolving punch list, and training simulator testing at Traffic Management Center
- Mount Baker Ridge Tunnel: Cleanup and warranty work, continue resolving punch list, and training simulator testing at Traffic Management Center
- Training simulator testing, tracking warranty lists, and final miscellaneous SCADA testing
- Continue receiving final Simplex documentation submittals, and continue resolving punch list

## **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 1st Quarter 2018, due to the following:

Challenges continue with network programming tasks for Phase 3 commissioning and Simplex / SCADA video interface and integration. Additional testing is required.

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

## **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 been several months trailing on their invoice submittal and with a combination of ongoing resolution of commercial issues, has resulted in overstating of cost accrual for the previous period. This current period with better information, the monthly expenditure was \$751.5K. Tables in millions.

#### **Cost Summary by Phase**

Project Elements by Phase	Baseline Budget	Authorized Project Allocation	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Author- ized Allo- cation vs. EFC	
Administration	\$3.6	\$3.6	\$2.2	\$2.2	\$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 Services	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	
Construction	\$198.3	\$198.3	\$171.9	\$162.5	\$198.3	\$0.0	
Total	\$225.6	\$225.6	\$194.4	\$184.3	\$225.6	\$0.0	

#### **Cost Summary by SCC**

Project Elements by SCC	Baseline Budget	Authorized Project Allocation	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Author- ized Allo- cation vs. EFC	
40 Sitework & Special Conditions	\$180.6	\$180.6	\$171.9	\$162.5	\$180.6	\$0.0	
80 Professional Services	\$26.3	\$26.3	\$22.5	\$21.8	\$26.3	\$0.0	
90 Unallocated Contingency	\$18.7	\$18.7	\$0.0	\$0.0	\$18.7	\$0.0	
Project Total (SCC 10-90)	\$225.6	\$225.6	\$194.4	\$184.3	\$225.6	\$0.0	

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## **Cost Contingency Management**

In the table below, the Allocated Contingency includes both WSDOT-controlled construction contingency and the total ST-controlled allocated contingencies.

	Bas	eline	Current		
Contingency Status	Amount	% of Total	Amount	% of Work Remaining	
Design Allowance	\$0.0	0.0%	\$0.0	0.0%	
Allocated Contingency	\$17.0	7.5%	\$8.0	19.4%	
Unallocated Contingency	\$18.7	8.3%	\$18.7	45.2%	
Total	\$35.7	15.8%	\$26.8	64.7%	

Note: Table in millions. Contract does not carry Design Allowance.

Contingency % of Work Remaining based on Contingency Remaining as a % Budget Remaining. Allocated contingency includes a portion of WSDOT-controlled contingency & ST-controlled Contingency.

## **Project Schedule**

Project Milestones for construction are indicated below; changes indicated in red were submitted by WSDOT as anticipated dates, but have not at this time been accepted:

Contract	Final Tunnel Com missioning Com plete		Substantial Completion			Roadway lover	Physical Completion		
LOO Two Way Transit & LLOV	Baseline	Forecast / Actual	Baseline	Forecast / Actual	Baseline	Forecast / Actual	Baseline	Forecast / Actual	
I-90 Two-Way Transit & HOV Operations Stage 3	2/16/2017	Q1/2018	2/20/2017	Q1/2018	5/31/2017	6/14/2017 A	5/31/2017	Q1/2018	



Communications Cabinet, Mt Baker Ridge Tunnel control room



CCTV image of in-pavement lighting & jet fans

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# Link Light Rail East Link Extension



#### Scope

**Limits/Alignment:** Fourteen-mile extension from

Downtown Seattle to Mercer Island, Bellevue and the Overlake area of Redmond. The extension includes 10 stations along the alignment that includes at-grade, elevated, bridges, new and retro-

fitted tunnels.

Stations: Judkins Park, Mercer Island, South Belle-

vue, East Main, Bellevue Downtown, Wilburton, Spring District/120th, Bel-Red/130th, Overlake Village and Redmond Technology Center (RTC).

**Systems:** Signals, traction electrification, and

communications (SCADA).

**Budget:** \$3.677 Billion (Baseline April 2015)

**Schedule:** Revenue Service - June 2023

Phase: Construction



Map of East Link Extension Alignment.

## **Key Project Activities**

#### Seattle to South Bellevue

- Floating Bridge Retrofit: Continued scanning & core drilling for lighting fixtures, installation of watertight doors; erection of post tensioning reaction frames and electrical modifications.
- *Mercer Island:* Continued utility work, sound wall & foundation construction for Mercer Island Station; continue installation of overhead catenary line foundations.
- D2 Structure & Mt. Baker Tunnel: Continued staging; core drilling for Pier 2 restraints; micro-piles installation.

#### South Bellevue to Redmond

- *E320 South Bellevue:* Continued formed, installed rebars and placed concrete for shaft columns throughout the segment; installed WSDOT supplied ITS equipment along *I-90 Flyover*; excavation of unsuitable soil at north end of parking garage.
- *E330 Downtown Bellevue Tunnel:* Tunneling has progressed to the tapered and enlarged sections. Approximately 1,195 total feet of excavation has been completed to date of which about 88 feet was accomplished in this period. Grouting of voids behind the Skyline building walls are now completed.
- E335 Downtown Bellevue to Spring District: Completed demolition of City Hall Garage and started footing pours for new structure. Continued installation of drilled shafts, column cap, utility work, placement of MSE panels for wall and trenching excavation for the 120th station.
- E340 Bel-Red: Continuation of commercial utility connections and storm drain connections. Excavation for the installation of detention vaults and fire main installation were completed.
- E360 SR520 to Redmond Technology Center: Systems Design continues IFC validation, OVS Facilities and Ped Bridges, RTC Facilities designs in IFC development. In Construction, drilled shaft work continues along the aerial guideway. Park Place detention vault closure pour and topping slab is complete. Installation of soil nails/shotcrete for wall S8 continues.

## **Closely Monitored Issues**

- Completing remaining property acquisitions and easements.
- 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.
- Completing the stations' procurements for Downtown Bellevue to Spring District.

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## **Project Cost Summary**

The East Link project cost is summarized below in two cost categories. In the first table, the cost is summarized in accordance with Sound Transit's Work Breakdown Structure (WBS). The second table summarizes the project in accordance with the FTA's Standard Cost Category (SCC) format. The Estimated Final Cost (EFC) continues to be projected at approximately \$3.77B. This period's expenditure is about \$40.0M, increasing the total project cost from \$1.032B to \$1,071.9B This period's project commitments remained approximately the same as last month's \$2.82B.

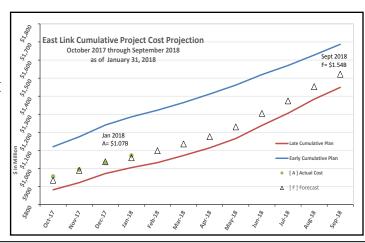
#### Cost Summary by Phase

Project Phase	Baseline Budget	Authorized Project Allocation	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Author- ized Allo- cation vs. EFC	
Administration	\$186.2	\$186.2	\$66.5	\$66.3	\$186.2	\$0.0	
Preliminary Engineering	\$55.9	\$55.9	\$54.8	\$54.7	\$55.9	\$0.0	
Final Design	\$283.0	\$283.0	\$245.0	\$202.2	\$283.0	\$0.0	
Construction Services	\$257.5	\$257.5	\$196.8	\$47.2	\$257.5	\$0.0	
3rd Party Agreements	\$52.2	\$52.2	\$38.3	\$15.4	\$52.1	\$0.0	
Construction	\$2,544.3	\$2,544.3	\$1,964.5	\$431.2	\$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	\$256.5	\$254.8	\$298.2	\$0.0	
Total	\$3,677.2	\$3,677.2	\$2,822.5	\$1,071.9	\$3,677.2	\$0	

#### Cost Summary by SCC

SCC Element	Baseline Budget	Authorized Project Allocation	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
10 Guideway & Track	\$744.6	\$949.7	\$880.3	\$207.0	\$965.3	(\$15.6)
20 Stations	\$397.7	\$474.2	\$266.2	\$56.0	\$471.3	\$2.9
30 Support Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$808.5	\$568.3	\$452.4	\$139.1	\$595.1	(\$26.7)
50 Systems	\$353.8	\$367.9	\$344.2	\$22.7	\$328.4	\$39.4
Construction Subtotal (10 - 50)	\$2,304.6	\$2,360.1	\$1,943.1	\$424.8	\$2,360.1	\$0.0
60 Row, Land	\$288.5	\$288.5	\$256.5	\$254.8	\$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	\$622.8	\$392.2	\$889.1	\$0.0
90 Unallocated Contingency	\$182.9	\$136.6	\$0.0	\$0.0	\$136.6	\$0.0
Total (10 - 90)	\$3,677.2	\$3,677.2	\$2,822.5	\$1,071.9	\$3,677.2	\$0.0

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 \$40M where Construction Phase is responsible for almost 86% or \$34.4M of January's cost. Total project cost incurred to date is now \$1.07B to which about \$431M was recorded in the Construction Phase. The project cost will continue to pick up and is predicted to increase to about the \$1.5B level by September 2018, reflecting continued active construction activities through the spring and with a predicted increased pace for the summer.



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## Risk and Contingency Management

#### Risk Management

The Risk 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. Sound Transit (ST) continuously monitors 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. This period, ST commenced the quarterly risks update for each of the major contract packages. ST included participation of construction management consultants and construction contractors in its risks management program.

#### **Contingency Status**

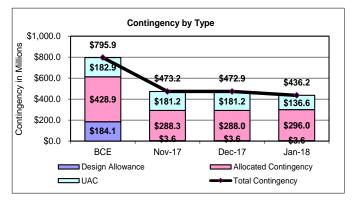
East Link project budget was baselined in April 2015 with a total contingency of \$795.9M. At the end of January 2018, all major construction contracts have been procured, the total contingency balance stands at \$436.2M (previously \$472.9M). The current contingency balance is consistent with the project's 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. DA balance 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 increased by a net amount of \$8M from \$288M to \$296M. This increase is due to normal construction change orders and was offset by the establishment of future contingencies to E335 for the station packages.

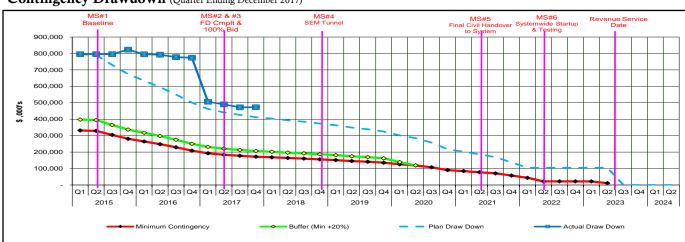
**Unallocated Contingency (UAC)** is used to address general project-wide cost risks and uncertainties. The UAC balance decreased by \$44.6M and now stands at \$136.6 (previously \$181.2M) to mitigate pricing pressure of the E335 station packages.

Contingency	BO	CE	Curren	t Status
Status	Amount	% of Total Budget	Remaining Amount	% of Work Remaining
Design Allowance	\$184.1	5.0%	\$3.6	0.1%
Allocated Contingency	\$428.9	11.7%	\$296.0	11.4%
Unallocated Contingency	\$182.9	5.0%	\$136.6	5.2%
Total:	\$795.9	21.6%	\$436.2	16.7%



Dollar figures on this page are displayed in millions.

#### Contingency Drawdown (Quarter Ending December 2017)



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## **Project Schedule**

The Integrated Master Schedule is presented below.

E130 continued installing reaction frames in the floating bridge pontoons, and began work on the sound walls at Mercer Island Station. Utility relocations continue on the eastern part of the project. E320 finished the shafts for the S. Bellevue parking garage and began stone columns; continued utility relocations and clearing & grubbing in advance of the soil nail wall at 112th Ave NE. E330 continues to make good progress in tunneling and is still forecast to complete ahead of baseline. E335 continued placing columns for the aerial guideway, placing retaining walls, and excavating the trench at 120th-124th. They are preparing to relocate utilities at the north portal. E340 continues relocating utilities and placing columns. E360 is nearing design completion and has started site prep and other early work throughout the alignment. E750 Systems Contractor continued product and component designs. Systems Contractor will complete this phase of work within the next two years and will begin physical construction in Northgate Link 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.

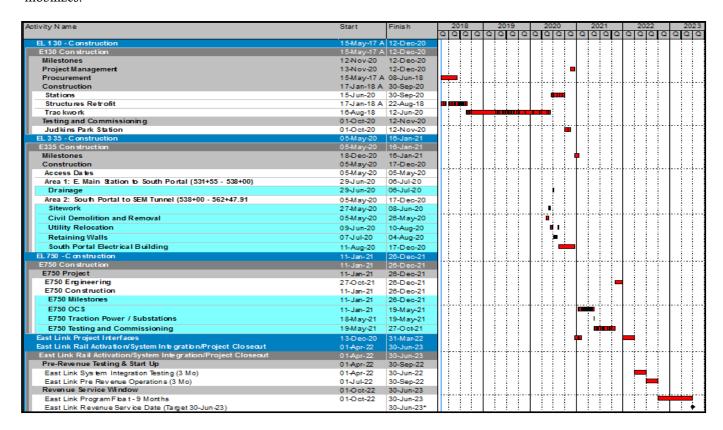
Act	ivity Name	Start	Finish							
				2017 Q Q Q	2018  Q Q Q Q	2019 Q Q Q Q	2020  Q Q Q Q	2021 Q Q Q Q	2022  Q Q Q Q	2023 Q Q Q Q
	East Corridor	18-Jan-15 A	30-Jun-23							_
Г	LRT Extension - Ea st	18-Jan-15 A	30-Jun-23	_						<del>-</del>
	East Link	18-Jan-15 A	30-Jun-23							<del></del>
Ш	East Link Construction	18-Jan-15 A	30-Jun-23	_						<del>-</del>
Ш	EL 130 - Seattle to I-90 Overpass (GC/CM)	10-Mar-17 A	11-Jan-21	_				<del>†</del>		
Ш	EL 320 - I-90 Overpass to S. Bellevue (DBB)	05-Dec-16 A	24-Oct-20				7		1	1
Ш	EL 330 - Downtown Bellevue Tunnel (DBB)	18-Jan-15 A	16-Jun-20	_			<del></del>			
Ш	EL 335 - Downtown Bellevue to Spring District (GC/CM)	24-Apr-17 A	16-May-21	_				<del></del>		
Ш	EL 340 - Spring District to SR 520 (DBB)	24-Feb-17 A	30-May-20	_			<del></del>			
Ш	EL 360 - SR 520 to Overlake Transit Center (DB)	13-Jul-16 A	10-Jun-20	_			<del></del>			
Ш	EL 750 - Systems	12-Jun-17 A	15-Feb-22	_					7	
Ш	East Link Master Schedule - Construction Interfaces	14-Jun-17 A	31-Mar-22	_					<del></del>	
Ш	ELRACT - East Link Rail Activation/System Integration/Project	01-Apr-22	30-Jun-23						<del></del>	<del></del>
Ш	East Link Rail Activation/System Integration/Project Closed	01-Apr-22	30-Jun-23						· • • • • • • • • • • • • • • • • • • •	<del></del>
Ш	Pre-Revenue Testing & Start Up	01-Apr-22	30-Sep-22						<del></del>	
	East Link System Integration Testing (3 Mo)	01-Apr-22	30-Jun-22		[	T	]	T	<b>—</b>	]
	East Link Pre Revenue Operations (3 Mo)	01-Jul-22	30-Sep-22	_					_	
	Revenue Service Window	01-Oct-22	30-Jun-23						_	<del>-</del>
	East Link Program Float - 9 Months	01-Oct-22	30-Jun-23						-	
	East Link Revenue Service Date (Target 30-Jun-23)		30-Jun-23*							<b>+</b>

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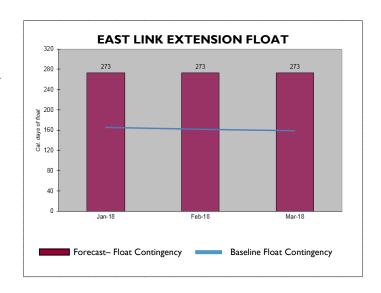
## **Critical Path Analysis**

The East Link critical path runs concurrently through the civil-systems handovers of the I-90 corridor from the E130 Contractor and the Downtown Bellevue tunnel and East Main Station from the E335 Contractor. The critical path for E130 is driven by the pontoon post-tensioning which is affected by the restricted work seasons on the floating bridge. E335 is constrained by access through the South Portal of the tunnel which cannot begin until the E330 Contractor demobilizes.



#### **Critical Path Float**

East Link Extension was baselined with 273 days of project float. To date, none has been expended.

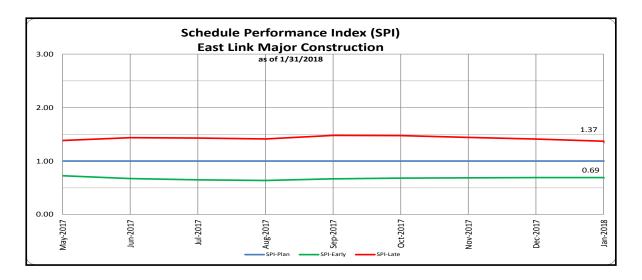


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#### **Schedule Performance Index**

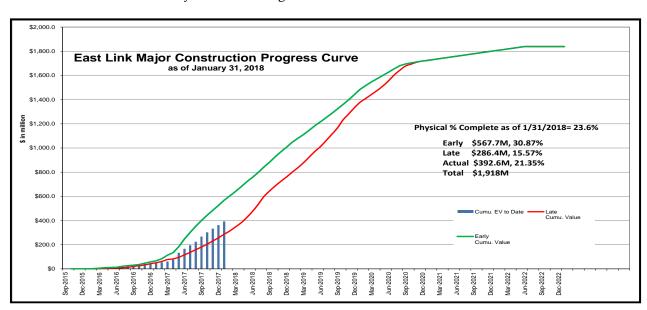
The early Schedule Performance Index (SPI) for East Link's Major Construction Packages is at 0.69 for this period. The E130 Contractor did not meet their anticipated schedule on the floating bridge last summer. The E750 Contractor has changed their approach to some engineering which has slowed their progress. The late SPI is at 1.37 showing that in general, performance is satisfactory.



## **Cost Progress Analysis**

All seven major construction contractors are now mobilized. All major civil work has started. 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 January, they are trending between the early/late projection as drawn from the master schedule. In terms of physical percent complete, the overall percent complete for East Link construction is approximately 23.6% as compared to approximately 27.9% of contractual duration expended.

The current period's analysis excludes the cost of E335 stations work because this scope was recently added to the contract and will be rolled into this analysis in the coming months.



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## 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 result in owner and tenant residential and commercial relocations. Market value trends in both residential and commercial properties are exhibiting strong upward pressure. The overall impact on the Right-of-Way (ROW) budget is being closely monitored. Efforts are also underway to prioritize acquisitions by contract package to help ensure timely availability of property. Property acquisition is recognized as a high priority and the management team has formed an ad hoc ROW team consisting of internally involved departments to prioritize and manage the process. See Right-of-Way program status in the table below. Several of the remaining properties needed for construction are City of Bellevue properties committed in the Memorandum of Understanding. The ST/City of Bellevue Steering Committee consisting of senior staff are collaborating to ensure timely transfer of these property rights consistent with the project schedule and priorities.

East Link Extension Property Acquisition Status								
Line Section	Offers							
Total	244	236	3	10	0	210	244	203

Note: Number totals may differ from other reports due to the timing of reporting periods.

E130 Seattle to South Bellevue - 2 parcels closed.

E320 South Bellevue - No new activity .

E330 Downtown Bellevue - No new activity.

E335 Downtown Bellevue to Spring District - No new activity.

E340 Bel-Red - No new activity

E360 SR 520 to Redmond Technology Center - No new activity.



E330 Tunnel excavation- Lattice girder installation at top heading

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## **Construction Safety**

Data/ Measure	January 2018	Year to Date	Project to Date
Recordable Injury/Illness Cases	0	0	13
Days Away From Work Cases	0	0	1
Total Days Away From Work	0	0	2
First Aid Cases	10	10	40
Reported Near Mishaps	20	20	112
Average Number of Employees on Worksite	946	946	-
Total # of Hours (GC & Subs)	114,538	114,538	816,991
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	0.00	0.00	3.18
LTI Rate	0.00	0.00	0.24
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. Starting January 2018, only OSHA Recordable Injuries and Lost Time Injury (LTI) cases will be reported to better reflect the Agency Scorecard metrics.

## **Community Outreach**

• Updates regarding Community Outreach will be provided in the Sound Transit website:

https://www.soundtransit.org/Projects-and-Plans/Find-a-Project.

#### **Environmental**

• Continued developing environmental permit application packages. Environmental commitments are incorporated into the design, program, and specifications of the project.

### **Sound Transit Board Actions**

Board Action	Description	Date
M2018-09	Amend the Heavy Civil General Contractor/Construction Manager contract with Stacy & Witbeck/Atkinson, a Joint Venture, to construct four stations for the Downtown Bellevue to Spring District segment within the East Link Extension in the amount of \$165,400,000, with a 5% contingency of \$8,270,000 totaling \$173,670,000, for a new total authorized contract amount not to exceed	Jan 25

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## Major East Link Construction Contract Packages

Below are the major construction contract packages for the East Link Extension with a brief scope description and status of each.

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

**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 Center** – 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 and component and product designs.



E320 South Bellevue- Installation of soilder pile tie backs SE 6th St and 112th SE

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## Contract E130 - Seattle to South Bellevue Heavy Civil GC/CM

#### **Current Progress**

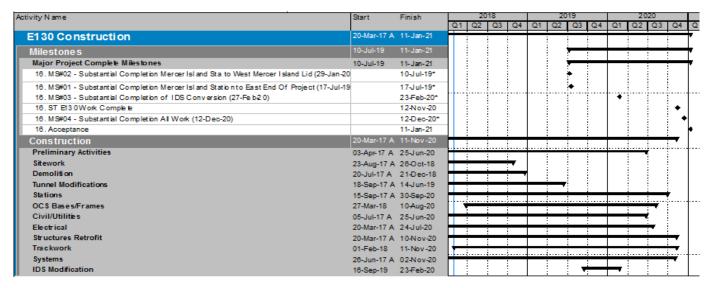
D2 Structure & Mt. Baker Tunnel: Continue structure as-builts and scanning; continue core drilling for Pier 2 restraints and installation of micropiles.

Floating Bridge Retrofit: Ongoing scanning & core drilling for lighting fixtures, installation of watertight doors; painting & erection of post tensioning reaction frames; ongoing electrical power modifications.

Mercer Island: Ongoing utility work, sound wall & foundation construction for Mercer Island Station; continue installation of overhead catenary line foundations; continue utility work & duct bank installation.

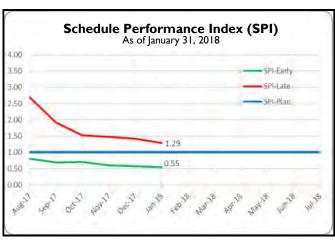
#### **Schedule Summary**

The primary critical path for this project goes through the floating bridge pontoons' post-tensioning retrofit work, constrained by the winter restricted work window; limited work shall occur on the floating bridge from October 1, 2017 through March 31, 2018. The winter restricted work window is currently in effect, so all large-scale construction on the floating bridge deck has ceased until Spring 2018. The Contractor continues working inside the pontoons to prepare for installation of post-tensioning strands. Sound walls are being constructed at the Mercer Island Station site; utility relocations are underway on the East Channel Bridge; and advanced preparation continues for upcoming seismic work on the D2 roadway.



#### Schedule Performance Index

This period, the SPI early is 0.55, SPI late is 1.29. The early index indicates that the Contractor is behind their early finish plans; meanwhile, the late index shows that the Contractor is on target with their late finish plan. These figures support the fact that the Contractor has encountered challenges in the initial phases of the post-tensioning scope and has proceeded with only half of the reaction frames last Fall for the post tensioning work in the pontoons. Contractor anticipates loading the remaining reaction frames into the pontoons during Spring and completing post tensioning work in Summer 2018.



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#### **Next Period's Activities**

- *West Side:* Install Pier 2 micropiles & footing formwork; install West Transition Span top deck.
- *HMH Floating Bridge*: Continue preparation work for post-tension scope: complete coring of pontoon interior walls; installation of duct hangers, ducts.
- East Side: Continue layout of deviator blocks in East Approach structure for PT; continue scanning as required.

#### **Closely Monitored Issues**

 Various methods to verify the location of posttensioning are being discussed with the Contractor and WSDOT.

#### **E130 Construction Activities**



#### **Cost Summary**

Present Financial Status	Amount
E130 Contractor - Kiewit-Hoffman, East Link Constructors	
Original Contract Value (includes Phase 2 MACC Negotiated)	\$665,000,000
Change Order Value:	\$1,020,000
Current Contract Value:	\$666,020,000
Total Actuals to Date:	\$108,032,701
Financial Percent Complete:	16.2%
Physical Percent Complete:	16.4%
Authorized Contingency:	\$46,660,541
Contingency Drawdown:	\$1,020,000
Contingency Index:	7.4



Sound Wall installation at the Mercer Island Station site.

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## Link Light Rail East Link Extension - Construction

#### Contract E320 - South Bellevue

#### **Current Progress**

*I-90 Flyover:* Continued work on drilled shafts. Formed, installed rebar and placed concrete for shaft columns and bent caps. Installed solider piles walls.

Park-and-Ride: Formed, installed rebar and placed concrete for shaft and columns. Installed stone columns for ground improvement.

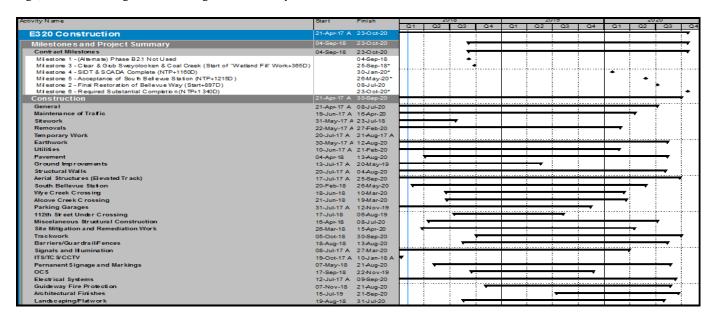
*Bellevue Way SE:* Installed temporary lighting along Bellevue Way. Continued building out PSE and Century Link utilities. A stop work order remained in effect for a portion of the area adjacent to Bellevue Way SE due to noncompliance with environmental requirements.

Wye-to-East Main: Continued CDSM work and spoil removal. Installation of underground PSE duct bank.

#### **Schedule Summary**

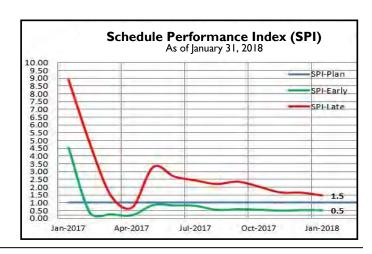
The critical path for this contract follows the overhead-to-underground power line conversion to the construction of the trench along Bellevue Way SE and then trackwork.

In January, the Contractor continued drilling shafts for the aerial guideway; installing stone columns for the parking garage; and relocating utilities along Bellevue Way.



#### Schedule Performance Index

This period, the SPI early is at 0.5 and the SPI late is at 1.5. The early index indicates that the Contractor continues behind schedule when compared to the baseline schedule, but not impacting critical path activities.



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#### **Next Period's Activities**

- Continue earthwork, foundations and retaining wall operations.
- Continue work on elevated guideway columns and shafts.
- Build out PSE and Century Link facilities on Bellevue Way SE.
- Continue PSE underground duct bank and other utility works on 112th.
- Continue CDSM work on 112th.

#### **Closely Monitored Issues**

- Scheduling of buildings/properties demolition on 111th Street SE.
- The depth of potentially unsuitable material northeast side of the Park-and-ride.
- Working adjacent to wetland areas.
- Possible revision 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:	\$1,245,089
Current Contract Value:	\$321,104,089
Total Actuals to Date:	\$65,969,827
Financial Percent Complete:	20.5%
Physical Percent Complete:	20.5%
Authorized Contingency:	\$38,532,000
Contingency Drawdown:	\$1,245,089
Contingency Index:	6.4

<sup>\* \$</sup> Amount exclude betterment and STart.



Installation of Wye Creek Storm drain



Shaft coring along 1-90 and Bellevue Way.

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#### Contract E330 - Downtown Bellevue Tunnel

#### **Current Progress**

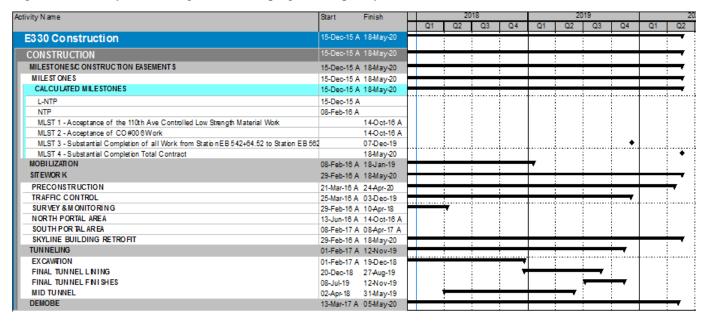
South Portal: Tunnel excavation using a six-drift heading continued in the tapered and enlarged sections of the tunnel throughout January. Excavation progressed approximately 88 feet this period, which is approximately 1,195 total feet of excavation to date. The learning curve for the start of the six- drift heading excavation was better than expected and has helped the Contractor maintain it's planned excavation rates. Good ground conditions being encountered have helped as well. Hauling of spoils offsite continues.

*North Portal:* Completed grouting of voids adjacent to the Skyline building. The Contractor is working on installation of drain pipe and wheel stops on level P3 of the Skyline building and working towards closing out this scope of work.

Between Portals: Continue monitoring instrumentation along tunnel alignment.

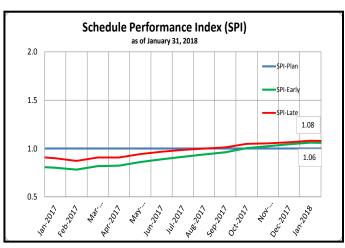
#### **Schedule Summary**

The critical path for this contract follows the tunnel excavation and the completion of the South Portal structure. Tunneling continues to exceed estimated production rates. The Contractor's cumulative rate is 4.27 LF/Day. The Contractor is now forecast to finish excavating in December 2018 and to achieve Substantial Completion on time. Void grouting work at the Skyline building continues to progress adequately.



#### **Schedule Performance Index**

This period, the SPI early is at 1.06 and the SPI late is at 1.08. The trend continues moving in the positive direction mainly due to advanced tunnel excavation progress. The better than expected 6 drift excavation learning curve and good ground conditions encountered to date have helped the tunnel progress. This advanced tunneling trend would most likely slow down if the contractor were to encounter significant groundwater or if the cold weather were to impact shotcrete set times.



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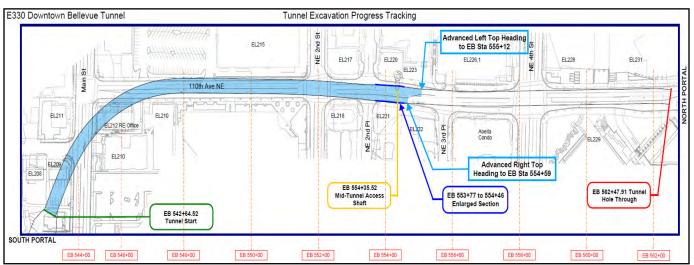
#### **Next Period's Activities**

- Continue 6 drift heading tunnel excavation, extend ventilation lines, and continue spoil hauling over the mountain pass as weather and road conditions permit.
- Coordinating and finalizing installation of PVC drainpipe and wheel stops on level P3 of the Skyline Building.

#### **Closely Monitored Issues**

- The Contractor is investigating the location and condition of the utility pipes and backfill around the pipes in the intersection of 110th Ave and NE 4th Street. Utility pipes are approximately 4'-5' to the tunnel crown.
- The quality and workmanship to use shotcrete in lieu of a formed cast in place system for the final lining in the tapered and enlarged sections, the shaft, and center wall will be critical and is under review. ST is working with the Contractor to develop specifications and mockup requirements.
- Contractor's revised SEM tunnel dewatering plan foregoes surface dewatering in lieu of dewatering only from inside the tunnel. ST will continue monitoring water intrusion in the tunnel as the Contractor is responsible for the cost and time impact to the work.

## E330 Tunnel Excavation Progress Tracking



As of 1/31/2018

#### **Cost Summary**

Present Financial Status	Amount
E330 Contractor— Guy F Atkinson Construction, LLC.	
Original Contract Value	\$121,446,551
Change Order Value	\$1,314,786
Current Contract Value	\$122,761,337
Total Actual Cost (Incurred to date)	\$63,537,387
Financial Percent Complete:	52%
Physical Percent Complete:	52%
Authorized Contingency	\$12,144,655
Contingency Drawdown	\$1,314,786
Contingency Index	4.8



6-Heading SEM Excavation Continues.

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

#### **Current Progress**

*Area 3 – North Portal/City Garage/BTC Station:* Completed the City Hall Parking Garage mass demolition and started pouring footings for new structure. Continued excavation and lagging installation at the north portal. Continued with formwork and rebar prefabrication for drilled shafts, and columns.

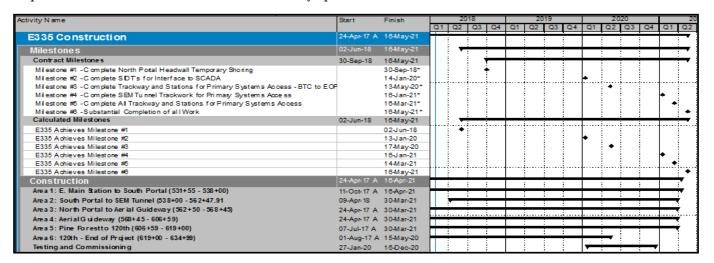
*Area 4 – Aerial Guideway:* Installation of drilled shafts, columns and column cap continued, Installation of false work for spans 1 and 2 was completed. Forming and rebar for spans 1 deck was completed.

*Area 5 – Pine Forest Wall construction & Earthwork:* Completed utility work on 118th at the Wilburton Station Plaza. Continued utility work and placement of MSE panels for retaining walls. Started storm drain on 11th Ave.

*Area 6 – 120th-124th Trench/Station:* Completed installation of deep storm drain at 120th. Continued trenching excavation for the 120th Station site and construction of 120th soldier pile fascia wall.

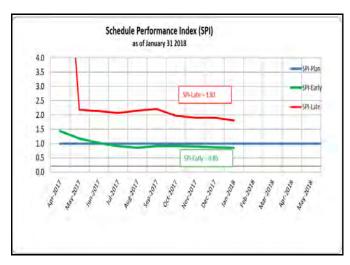
#### **Schedule Summary**

There are two primary critical paths for this project—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. Work in January included pouring columns, installing falsework, and placing rebar for the aerial guideway; mass demolition at the City of Bellevue garage;, and continued civil work for the 120th Station. The station package change order was executed in January, so station detail is expected to be added to the schedule in the February update.



#### **Schedule Performance Index**

This period, the SPI early is at 0.85 and the SPI late is at 1.81 indicating that the Contractor continues behind the early curve, but well ahead of the late curve when compared to the baseline work plan. These figures are supported by the fact that lack of access to entity at property EL-243 delayed demolition of building leading to delay utility work to start. Also, due to weather condition in December 2017 start of trackway excavation was pushed into January. The aerial guideway continue to lag behind as work on the long span has slipped. Additionally, track material procurements were originally scheduled to be delivered in late 2017, but are now expected later in 2018.



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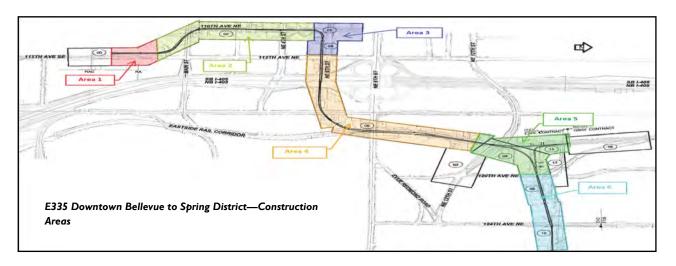


#### Next Period's Activities

- Area 4-Aerial Guideway- Continue trench excavation, storm drainage in Spring District.; continue formwork and reinforcing for pier cap in area 4 and Complete drill shaft installation; commence trestle cross beam installation.
- Area 3 North Portal/City Garage/BTC Station Continue Footing installation for the City Hall Parking Garage; continue excavation, lagging, and steel installation for north portal.
- Area 6–120th –124th Tench/Station-Continue trench excavation in the 120th Station area and begin installation of secant piles.

## **Closely Monitored Issues**

- Completion of the retained cut through Spring District and undercrossing of 124th Ave NE may be delayed by property acquisition.
- The business owner continues to occupy one of the buildings slated for demolition. Although relocation has been planned, business licensing and permits continue to delay the E335.
- Work completed on the City of Bellevue Zone 1B Project in Area 5. Existing grades have been left higher than indicated in E335 plans, which may result in additional effort for removal of up to 7,000 CY of surplus material. In order to mitigate options and alternatives the suitability of soil for on site use is under survey and identification.



#### **Cost Summary**

Present Financial Status	Amount
E335 Contractor- Stacy & Witbeck/ Atkinson Joint Venture (SWA-JV).	
Original Contract Value*	\$228,398,210
Change Order Value	\$3,796,161
Current Contract Value	\$232,194,371
Total Actual Cost (Incurred to date)	\$71,744,767
Financial Percent Complete:	30.2%
Physical Percent Complete:	30.2%
Authorized Contingency	\$11,419,911
Contingency Drawdown	\$3,796,161
Contingency Index	0.9

Amounts excludes station scope.



Span I and 2- Aerial Guideway over I I 2th Ave NE Bellevue ( Area 4)

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# Link Light Rail East Link Extension - Construction

#### Contract E340 - Bel-Red

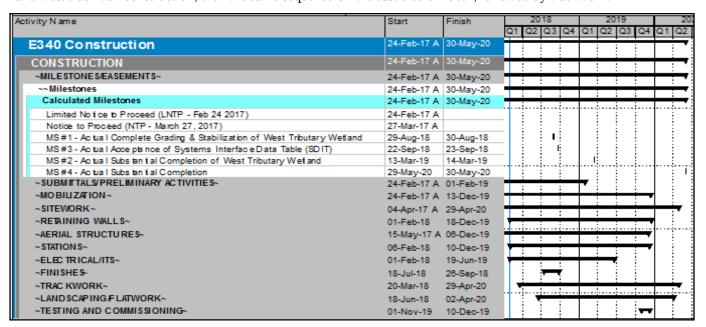
#### **Current Progress**

Contractor continues with transition pour, form work for crossbeams has begun. Excavation for the installation of detention vaults has completed. Completed installation of new water service for EL 310 (MGI). Fire Main installation was also completed. Installation of storm drain connections on the MGI Property and installation of storm drain on the Evans property. Working on AL26 Joint Duct Bank Trench. PSE working with Liberty Electric to make underground connection to the COB signal cabinet for the 136th Place Street NE traffic signal.

#### Schedule Summary

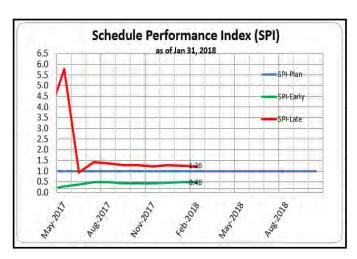
Work in January included continued utility relocation and utility installation and placing columns and setting falsework for the aerial guideway;

The critical path of this project now runs through the wet utilities on the west side of 136th, the 136th utility crossings, and west trackwall construction, then the same sequence on the east side of 136th, followed by trackwork.



#### **Schedule Performance Index**

This period, the SPI early is at 0.48 and the SPI late is at 1.26. The late index indicates that the Contractor continues to be ahead of the planned late finish work. The SPI early is indexed behind the Contractor's planned early finish schedule. Both early and late index has remained approximately the same as previous months which is supported by the fact that the Contractor continues to face challenges with commercial connections being done by multiple private utility companies.



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## Link Light Rail East Link Extension - Construction



#### **Next Period's Activities**

- Setting bottoms for the EL319 Vault and shoring the SW corner of the excavation.
- Complete installation of temporary intercept vaults and conduit connections.
- Stringing of overhead cable and removal of existing overhead cable along the AL26 alignment.

#### **Closely Monitored Issues**

- The complexity of coordination with private utility companies (PSE, CenturyLink and Comcast) is still an ongoing challenge. These are critical to minimize impacts (such as inadvertent strike leads to service interruptions, unidentified utilities leads design revision in turn impacts physical work).
- Disputed Seattle City Light property easements is impacting City of Bellevue's 124th Avenue construction which in turn may impact E340 Contractor's early guideway work (soldier pile and retaining walls).
- Potential contamination of soil and ground water during excavation to relocate King County Sewer.
- Commercial utility connections were not identified in contract, working with private utilities to restore connections.

#### **Cost Summary**

Present Financial Status	Amount
E340 Contractor– Max J Kuney	
Original Contract Value	\$93,170,012.00
Change Order Value	\$1,435,716.78
Current Contract Value	\$94,605,728.78
Total Actual Cost (Incurred to date)	\$20,888,450.92
Financial Percent Complete:	22.08%
Physical Percent Complete:	22.08%
Authorized Contingency	9,317,000.00
Contingency Drawdown	\$1,435,716.78
Contingency Index	6.49



Vault excavation at the corner of 136th Place and Spring Boulevard

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# Link Light Rail East Link Extension - Design-Build

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

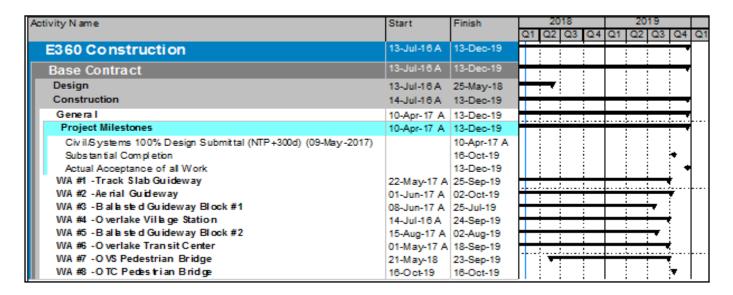
#### **Current Progress**

*Design*: Advanced design packages for the following areas: SR520 Permanent Roadway 100% submittal preparation, Systems Design continue IFC validation, Civil Systems continue 100% submittal preparation, OVS Facilities continue IFC Development, OTC Facilities continue IFC Development, OVS Ped Bridge continue IFC development, Landscape continue 100% submittal preparation.

Construction: Drilled shaft work installation ongoing along the aerial guideway (five shafts completing drill/rebar/pour; 78, 79, 80, 81, and 82). Guideway bent column mockup completed / approved and cap mockup preparation underway. Park Place detention vault closure pour and topping slab completed. Work Area #6 (OTC Site) ongoing installation of soil nails/shotcrete for wall S8. Early sitework preparation in Work Area #5 for utility abandonment and relocation is ongoing.

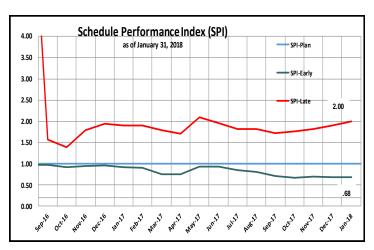
#### **Schedule Summary**

In January, the Contractor continued progressing all design packages toward 100% or IFC. Potholing, grading, and utility relocation in preparation of retaining wall construction took place. Detention vault construction and drilled shafts for the aerial guideway continued. The critical path for this project follows the aerial guideway through trackwork.



#### **Schedule Performance Index**

This period, the SPI early is 0.68 and SPI late is 2.0. The early SPI value continues to reflect slippage of early finishes of baseline planned work along with the ST directed stoppage of RTC Ped Bridge design which has not been deleted. Construction start has been somewhat slowed by design slippage. Late SPI recovery is due to the resequencing of construction and pushing the RTC Ped Bridge design out.



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# Link Light Rail East Link Extension - Design-Build



#### **Next Period's Activities**

- Design Civil SR520 100% design package ongoing development, Systems Design/OVS & OTC Facilities IFC Validation and preparing OVS Ped Bridge 100% resubmittal.
- Commission and punchlist OVS Vault
- Continue drilled shaft, and column installation in Work Area #2 (Aerial Guideway). Caisson rebar fabrication is ongoing. Cap mockup form / reinforce/ pour preparation for ST review.
- Complete Park Place Vault backfill and set lids.
- Continue construction of walls S8 (shotcrete) and 13A (CIP wall) and monitor voids. Start walls 13 & 14 (CIP and soil nails).

#### **Closely Monitored Issues**

- Alternative RTC Pedestrian Bridge Contractor and Microsoft are working on 60% designs for an alternative RTC Ped Bridge. Once design, costs and schedule are developed; amendment to the OTC Funding Agreement and the construction contract are anticipated.
- Contractor, Sound Transit and City of Redmond continue to work out permitting issues.
- ST and the Contractor must resolve and negotiate changes related to Sales Tax Increase, Track/ Fasteners/Clips, and OVS Infiltration Vault base modification.
- Implementation of Safety Certification for mitigating hazards. Development of Safety and Security Certification Plan (SSCP).
- Wall S8 Soil Nail Construction Issues.
- Timely submission of Construction Work Plan submittals

#### **Cost Summary**

Present Financial Status	Amount
E360 Contractor— Kiewit-Hoffman	
Original Contract Value	\$225,336,088
Change Order Value	\$835,747.21
Current Contract Value	\$226,171,835.21
Total Actual Cost (Amount Billed)	\$61,405,524.21
Financial Percent Complete:	27.15%
Physical Percent Complete:	27.15%
Authorized Contingency	\$23,071,580
Contingency Drawdown	\$1,109,806
Contingency Index*	5.6



Excavation of shaft construction pad along SR-520

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## Link Light Rail Downtown Redmond Link Extension



## Scope

The Downtown Redmond Link Extension builds new light rail from the Redmond Technology Center 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 current budget for this project through completion of PE is \$28.6M, excluding real estate acquisitions.

## **Key Project Activities/Issues**

- Negotiated with Consultant on enabling creation of bridging documents for design build procurement.
- ST Capital Committee Board approved initial rightof - way acquisitions in January.
- ESA Formal Consultation: Held pre-BA meeting with FTA and National Marine Fisheries Service.
- Conducted site visit of Bear Creek crossing with FTA, Muckleshoot Indian Tribe and WDFW.
- Completed the final draft term sheet with City of Redmond and currently negotiating content of Project Administration Agreement and Design and Construction Agreement with King County and City of Redmond.



Map of Downtown Redmond Link Extension.

## **Project Cost Summary**

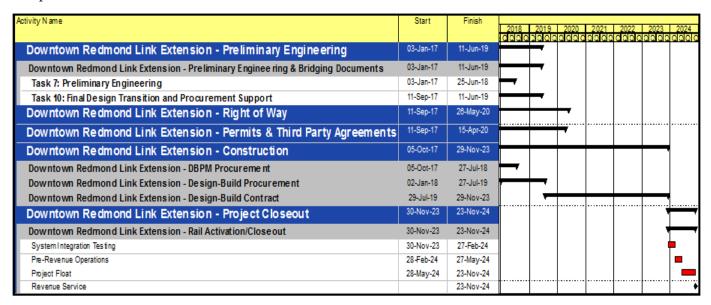
Voters approved funding for preliminary engineering for the Redmond Link extension in the 2008 in the Sound Transit 2 ballot measure. In response to the 2007-2009 Great Recession, the ST Board suspended the project. In February 2016, the ST Board restored funding to support preliminary engineering of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

Project Phase	Baseline Budget	Authorized Project Allocation	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation Versus EFC
Administration	\$4.9	\$4.9	\$1.6	\$1.7	\$4.9	\$0.0
Preliminary Engineering	\$21.3	\$21.3	\$13.8	\$9.4	\$21.3	\$0.0
Final Design	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Construction Services	\$2.0	\$2.0	\$0.0	\$0.0	\$2.0	\$0.0
3rd Party Agreements	\$2.8	\$2.8	\$0.3	\$0.1	\$2.8	\$0.0
Construction	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$147.0	\$147.0	\$0.5	\$0.2	\$147.0	\$0.0
Total	\$178.0	\$178.0	\$16.3	\$11.3	\$178.0	\$0.0

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## **Project Schedule**

The project schedule is presented below. The project is currently undergoing environmental analysis ahead of the ST Board adopting the project to be built. Preparations are underway to begin early property acquisition next year. The PE consultant has begun preparation of bridging documents for the Design-Build procurement. The RFP is anticipated to be issued in 3rd QTR 2018. The project is anticipated to be baselined by 4th QTR 2018. Project is currently forecast for completion near the end of 2024.



## **Sound Transit Board Actions**

Board motions and resolutions directly related to Downtown Redmond Link Extension is summarized in the table below.

Motion Number	Description	Date
	None this period.	

## **Community Outreach**

 Updates regarding Community Outreach can be found in the Sound Transit website:

https://www.soundtransit.org/Projects-and-Plans/Find-a-Project.

#### **Environmental**

None to report.

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## Scope

The West Seattle segment includes 4.7 miles of light rail and five light rail stations from downtown Seattle to West Seattle's Junction neighborhood. The route will run primarily on elevated guideway with a new rail-only bridge over the Duwamish River. Revenue Service by 2030.

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. Revenue Service begins by 2035.

## **Key Project Activities**

- Held a Elected Leadership Group initial meeting on January 4th. The purpose of this group is to reach consensus on a recommended preferred alternative and work through project issues as needed.
- Worked with City of Seattle staff in developing Project Administration Agreement and a Task Order to provide funding for certain City services related to project development activities that support project streamlined permitting and other objectives of the Partnering Agreement.
- Continued working with project development services consultant on gathering maps and existing conditions data for the project corridor for early scoping.
- Prepared to initiate 30-day SEPA early scoping period on February 2. Three public open houses and one agency scoping meeting will be held in February during the early scoping period to solicit input on the ST3 representative project, project purpose and need and community concerns.



Map of West Seattle & Ballard Link Extensions

## **Project Cost Summary**

The West Seattle and Ballard Link Extensions are voter-approved projects under the ST3 Plan. The ST Board approved budget allows staff to retain a consultant team to begin 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. Table (below) figures in millions.

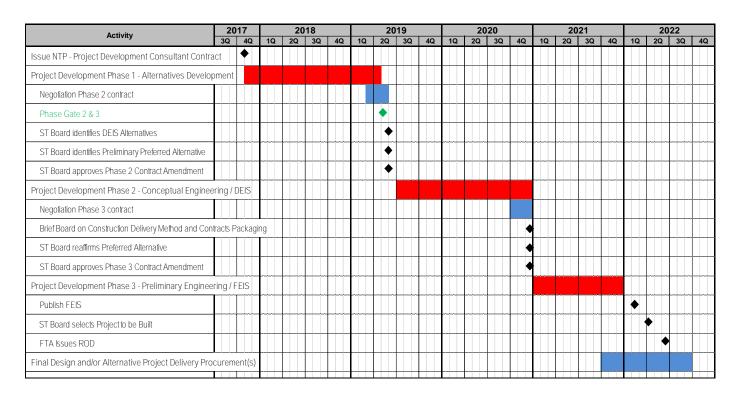
Project Phase	Authorized Project Allocation	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation Versus EFC
Administration	\$63.1	\$1.1	\$1.2	\$63.1	\$0.0
Preliminary Engineering	\$205.4	\$24.4	\$2.7	\$205.4	\$0.0
Final Design	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Construction Services	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
3rd Party Agreements	\$11.4	\$0.0	\$0.0	\$11.4	\$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	\$0.1	\$0.1	\$6.0	\$0.0
Total	\$285.9	\$25.7	\$4.0	\$285.9	\$0.0

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## Link Light Rail West Seattle & Ballard Link Extensions

## **Project Schedule**

The preliminary project schedule through the ST Board selection of 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 detailed schedule of Phase 1, Alternatives Development, created by the Project Development Consultant.



## **Sound Transit Board Actions**

Board motions and resolutions directly related to West Seattle and Ballard Link Extensions are summarized in the table below.

Motion Number	Description	Date
	None this period.	

## **Community Outreach**

Updates regarding Community Outreach can be found in the Sound Transit website: <a href="https://www.soundtransit.org/Projects-and-Plans/Find-">https://www.soundtransit.org/Projects-and-Plans/Find-</a>

#### **Environmental**

a-Project.

- Engaged with FTA to introduce the project and prepare for Early Scoping.
- Retained an Environmental Services consultant to provide review assistance and day to day support for the FTA Region 10 in its work coordination with Sound Transit.

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## 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 con-

figuration 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.

**Station:** Angle Lake Station is located at South

200<sup>th</sup> 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 Guideway and Station (S440): The project team working with Contractor to finalize remaining closeout work to achieve Acceptance on the contract. ST evaluating claim submitted by Contractor.
- Design Build Parking Garage (S445): The project team is working toward achieving Acceptance on the contract.
- Roadway Improvements (S447): Closeout complete.
- Military Road/South 200th Intersection (S446): WSDOT finalizing punch list activities and complete year one plant establishment work by May 2018.
- Project Wide: Goal to conclude all closeout and followon work by end of 1st QTR 2018.

## **Closely Monitored Issues**

- *S440:* Claim from contractor regarding Station Control Unit is under review.
- *S445:* Garage façade panels require repairs due to strong winds. ST awaits a plan from the Contractor.

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## **Project Cost Summary**

The South 200th Link Extension cost is summarized into two cost tables. The current Adopted Budget column reflects the 2016 Adopted Budget. 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.

#### **Cost Summary by Phase**

WBS Phase Elements	Baseline Budget	Authorized Project Allocation	Commit- ment to Date	Incurred to Date	Est. Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$16.1	\$17.1	\$16.2	\$16.2	\$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	\$17.1	\$17.1	\$17.1	\$0.2
3rd Party Agreements	\$6.9	\$7.1	\$5.7	\$3.8	\$3.3	\$3.8
Construction	\$275.7	\$282.9	\$239.5	\$238.6	\$243.1	\$39.8
Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$43.5	\$43.5	\$38.0	\$38.0	\$38.1	\$5.5
Capital Total	\$383.2	\$383.2	\$330.9	\$328.1	\$332.6	\$50.6
Finance Cost	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Project Total	\$383.2	\$383.2	\$330.9	\$328.1	\$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 increased by approximately \$0.3M, of this \$0.2M is the construction phase for S440 contract activity, and the remaining is split between construction services and administration phases.

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

Project Elements by SCC	Baseline Budget	Authorized Project Allocation	Commit- ment to Date	Incurred to Date	Est. Final Cost (EFC)	Authorized Allocation vs. EFC
10 Guideway & Track Elements	\$144.8	\$133.0	\$100.3	\$100.4	\$109.5	\$23.5
20 Stations	\$46.4	\$51.7	\$42.0	\$42.0	\$42.3	\$9.5
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	\$55.6	\$54.6	\$55.0	\$0.3
50 Systems	\$30.8	\$19.9	\$20.4	\$20.3	\$20.4	-\$0.4
Construction Subtotal (SCC 10-50)	\$256.6	\$259.9	\$218.3	\$217.4	\$227.1	\$32.8
60 Row, Land, Existing Improvements	\$43.5	\$43.5	\$38.0	\$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	\$74.6	\$72.7	\$65.7	\$6.8
90 Unallocated Contingency	\$19.0	\$7.3	\$0.0	\$0.0	\$1.8	\$5.5
Project Total (SCC 10-90)	\$383.2	\$383.2	\$330.9	\$328.1	\$332.6	\$50.6
100 Finance Cost	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Project Total (SCC 10-90)	\$383.2	\$383.2	\$330.9	\$328.1	\$332.6	\$50.6

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# **Cost Contingency Management**

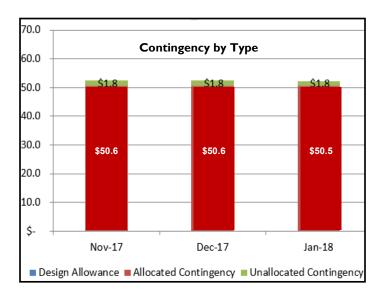
The overall project contingency balance as of this period is \$52.3. Table (below) figures in millions.

Design Allowance (DA): N/A

**Allocated Contingency (AC):** This period the AC balance is \$50.5M, reflecting a decrease of \$0.10M due to \$440 change orders.

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

	Baseline		Cu	rrent
Contingency Status	Amount	% of Total	Amount	% of Work Remain-
Design Allowance	\$26.7	7.0%	\$ -	0.0%
Allocated Contingency	\$29.8	8.0%	\$50.5	1104.0%
Unallocated Contingency	\$19.0	5.0%	\$ 1.8	39.4%
Total	\$75.5	20.0%	\$52.3	1143.4%



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# S440 Contract—Design -Build (Guideway and Station)

### Close-out

Revenue Service began on September 24, 2016. The S440 Contractor continues to work on closeout items.

## **Close-out Activities**

### Current Period

- Completed replacement work for E-clips on guideway.
- Preparing for rail grinding polish to remove roughness.
- Continued closeout activities: finalizing last few change orders, review of NOI Claim 003 SCU claim and CAD as-builts to be submitted .

### Next Period

- Complete closeout activities.
- Issue Final Acceptance to Contractor.

## **Closely Monitored Issues**

• The Contractor has submitted a claim regarding a Station Control Unit.

# S445 Contract—Design -Build Parking Garage

### Close-out

Substantial Completion issued on December 21, 2016. *No more updates.* 

# **Cost Summary**

Present Financial Status	Amount
S440 Contractor—PCL Civil Contractors, Inc.	
Original Contract Value	\$169,000,000
Change Order Value	\$6,856,390
Current Contract Value	\$175,758,490
Total Actual Cost (Amount Billed)	\$175,753,406
Financial Percent Complete:	99.9%
Physical Percent Complete:	100%
Authorized Contingency	\$13,520,000
Contingency Drawdown	\$6,856,390
Contingency Index	2.0

# **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 (Amount Billed)	\$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

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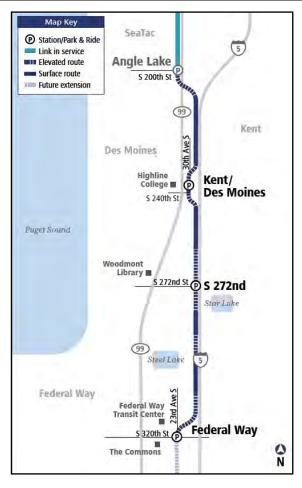


## Scope

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 current budget for this project through completion of Final Design is \$412.6M.

## **Key Project Activities/Issues**

- Continued to work with FTA & PMOC in preparations for Entry to Engineering and Full Grant Funding Agreement applications.
- Design Build (DB) workshop held for PMOC by project team addressing their concerns. Presentation covered project overview, DB process, cost schedule and risks, and lessons learned from other ST DB projects.
- ROW properties (full and partial) continues to be certified and approved by Board in stages.
- Continued working with cities to finalize development and transit way agreements.
- Staff preparing to develop agreement with WSDOT to construct the SR99 bridge.
- Design Build Project Management (DBPM) Phase 1 contract and Design Services contract amendment pending ST Board approval in February 2018.
- ST staff discussing alternative permitting options with each of the cities.
- Preparing pre-final DB project requirements for agency review next month.
- Project milestones for DB procurement is being finalized.



Map of Federal Way Link Extension.

# **Project Cost Summary**

In March 2017, the Sound Transit Board authorized the Federal Way Link Extension Project to advance through Gate 4 (Final Design), increasing the authorized project allocation from \$48.8M to \$412.6M. Board approval for Gate 5 (Baseline) to release the entire project budget will be sought in 4th QTR 2018. Table (below) figures in millions.

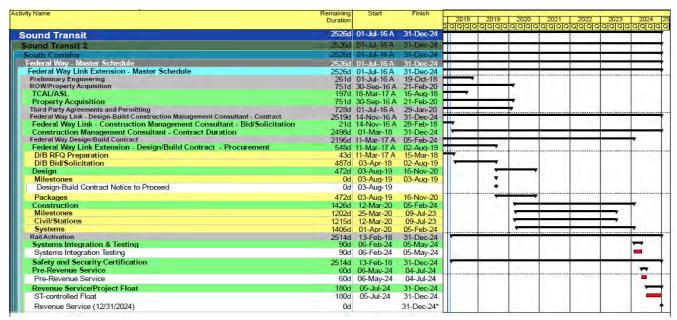
Phase	Authorized Project Allocation	Commit- ment to Date	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Authorized Allocation Versus EFC
Administration	14.9	9.4	9.4	5.5	14.9	\$0.0
Preliminary Engineering	43.4	39.1	40.2	4.3	43.4	\$0.0
Final Design	2.4	0.3	0.3	2.0	2.4	\$0.0
Construction Services	45.7	0.0	0.0	45.7	45.7	\$0.0
Third Parties	18.6	3.3	1.8	15.4	18.6	\$0.0
Construction	13.5	0.0	0.0	13.5	13.5	\$0.0
Right of Way	274.1	9.8	7.3	264.3	274.1	\$0.0
Total	\$412.6	\$61.9	\$59.0	\$350.7	\$412.6	\$0.0

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## **Project Schedule**

The project schedule is presented below. Record of Decision (ROD) was received in March 2017. ST will issue an RFQ for potential Design-Build contractors in the 2nd QTR 2018. Real Estate acquisitions are now underway and additional detail has been added to the master schedule to monitor any impacts to the project. Project Baseline has been delayed to 3rd QTR 2018 to allow time for completion of independent cost estimate and risk assessment.



# Right-of-Way

The Right-of-Way project for Federal Way Link Extension involves the acquisition, including owner and tenant relocations as appropriate, of a range of property interests. Property interests includes compensable (e.g. fee acquisitions, permanent and temporary construction easements and non-compensable rights - e.g. rights of entry). As of this period, a total of 341 parcels are certified for Federal Way Link Extension (one additional relocation identified). Approximately 248 owners, tenants and businesses will be relocated as part of the project.

	Federal Way Link Extension Property Acquisition Status							
	Board Ap- proved	Offers Made/In Negotia- tions	Signed Agree- ments	Posses- sion and Use	Admin Settle- ment	Closings to date	Reloca- tions Required	Parcels Vacated
Total	341	28	3	0	0	7	248	3

<sup>\*</sup>Number totals may differ from other reports due to the timing of reporting periods.

## **Sound Transit Board Actions**

Board motions and resolutions directly related to Federal Way Link Extension is summarized in the table below.

Motion Number	Description	Date
M2018-02	Acquire certain real property interests, including acquisition by condemnation to the extent authorized by law, and to reimburse eligible relocation and reestablishment expenses incurred by affected owners and tenants as necessary for the project.	Jan 25

# **Community Outreach**

 Updates regarding Community Outreach are found in the Sound Transit website:

https://www.soundtransit.org/Projects-and-Plans/Find-a-Project.

#### **Environmental**

None to report.

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# Link Light Rail Federal Way Link Extension- Preliminary Engineering



# Phase 3 Preliminary Engineering (PE)

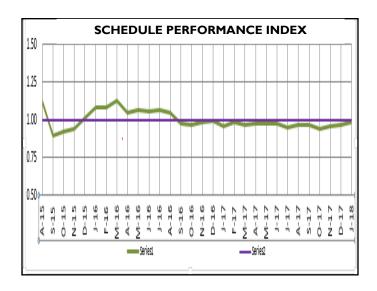
In July 2015, Sound Transit executed an amendment to the professional services agreement with HDR Engineering, Inc. for Phase 3 professional services, including completion of a Final Environmental Impact Statement (FEIS) using the preferred alternative and the other alternatives in the Draft EIS, preliminary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

# Phase 3 Key Activities

- Record of Decision (ROD) from FTA received and moving toward Entry to Engineering.
- Resolution of Pre-Final PE submittal comments by third parties and initiation of development of project requirements associated with RFP development for design-build contract.
- Continued discussion with FTA regarding New Starts requirements for Entry to Engineering.
- Agreements setup with affected cities for design review and RFP preparation.
- Ratings submittal package submitted in September.
- Continued property acquisition.

## Phase 3 Schedule Performance

The cumulative Schedule Performance Index (SPI) is 0.98 through January 2018, indicating the overall amount of work accomplished is near planned. A new plan has been developed to incorporate new scope to extend the consultant contract for assistance in RFP process of DB contract and in ROW acquisition support in 1st QTR 2018.

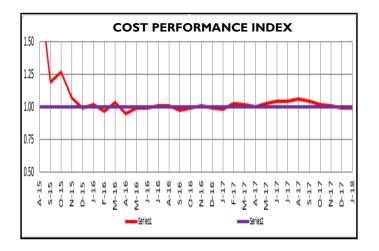


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# Link Light Rail Federal Way Link Extension- Preliminary Engineering

## **Phase 3 Cost Performance**

Phase 3 expenditures through January 2018 totaled \$29.5M, approximately 99% of the total contract. The Phase 3 percent complete is reported at 98%, with an earned value of \$29.4M. The cumulative Cost Performance Index (CPI) is 1.00 indicating costs are on track with work accomplished.



Phase 3 Performance	Cumulative To Date
Amount Invoiced	\$29.5M
% Spent	99%
Earned Value	\$29.4M
% Complete	98%
SPI	0.98
СРІ	1.00

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# Link Light Rail Tacoma Link Extension



## Scope

Limits: City of Tacoma

Alignment: The Tacoma Link Extension project is a

2.4-mile extension of the existing Taco ma Link system from the Theater District in downtown Tacoma to the Hilltop neighborhood. The extension will travel in street with traffic along Stadium Way, North 1<sup>st</sup>. Street, Division Avenue, and

Martin Luther King Jr. Way.

**Stations:** 

Old City Hall, S. 4<sup>th</sup>, Stadium District, Tacoma General, 6<sup>TH</sup> 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 communica-

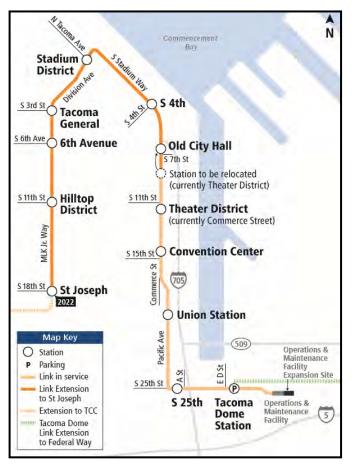
tions infrastructure.

\$217.3 Million Phase Gate 5 **Budget:** 

Phase: Final Design and Construction

Const. Starts: 2018

May 2022 Service:



Map of Tacoma Link Extension.

# **Key Project Activities**

#### Final Design

- Design consultant continued comment resolution of ST and Third Party reviewers' comments of the 90% design package.
- ST design staff and consultant continued work on contract Special Conditions.
- Continued work with City of Tacoma identification of betterment scope.

#### <u>Pre-Construction Services</u>

- CMC Resident Engineer and ST staff continue to support maintenance of traffic plans with design consultant and City of Tacoma.
- ST staff continued work on development of Division 01 specifications and Special Conditions.

#### Right -of - Way

Right -of -way property acquisition activities continued as they relate to required temporary construction easements (TCE) along the alignment.

#### Vehicles

Issued Notice to Proceed to LRV manufacturer, Brookville Equipment Corporation, and held kick-off meeting in Seattle with representatives from Brookville in attendance.

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# **Project Cost Summary**

In September 2017, Sound Transit Board adopted the Tacoma Link Extension baseline schedule and budget by increasing the authorized project allocation from \$34.6M to \$217.3M. The Tacoma Link 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

WBS Phase Elements	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$16.9	\$5.8	\$5.7	\$16.9	\$0.0
Preliminary Engineering	\$5.6	\$5.6	\$5.6	\$5.6	\$0.0
Final Design	\$10.8	\$10.4	\$8.7	\$10.8	\$0.0
Construction Services	\$9.9	\$0.5	\$0.3	\$9.9	\$0.0
3rd Party Agreements	\$1.5	\$1.1	\$0.6	\$1.5	\$0.0
Construction	\$127.2	\$0.0	\$0.0	\$127.2	\$0.0
Vehicles	\$35.4	\$31.2	\$0.4	\$35.4	\$0.0
ROW	\$3.6	\$2.0	\$1.6	\$3.6	\$0.0
Contingency	\$6.6	\$0.0	\$0.0	\$6.6	\$0.0
Total	\$217.3	\$56.6	\$22.9	\$217.3	\$0.0

#### **Cost Summary by SCC**

Project Elements by SCC	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
10 Guideway & Track	\$21.9	\$0.0	\$0.0	\$21.9	\$0.0
20 Stations	\$1.8	\$0.0	\$0.0	\$1.8	\$0.0
30 Support Facilities	\$26.6	\$0.0	\$0.0	\$26.6	\$0.0
40 Sitework & Special Conditions	\$40.0	\$0.0	\$0.0	\$40.0	\$0.0
50 Systems	\$25.0	\$0.0	\$0.0	\$25.0	\$0.0
Construction Subtotal (10 - 50)	\$115.4	\$0.0	\$0.0	\$115.4	\$0.0
60 Row, Land	\$3.6	\$2.0	\$1.6	\$3.6	\$0.0
70 Vehicles (non-revenue)	\$35.4	\$31.2	\$0.4	\$35.4	\$0.0
80 Professional Services	\$56.4	\$23.3	\$20.9	\$56.4	\$0.0
90 Unallocated Contingency	\$6.6	\$0.0	\$0.0	\$6.6	\$0.0
Total (10 - 90)	\$217.3	\$56.6	\$22.9	\$217.3	\$0.0

# Risk Management

The Tacoma Link Risk and Contingency Management Plan (RCMP) was completed in 2nd QTR 2017. 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.

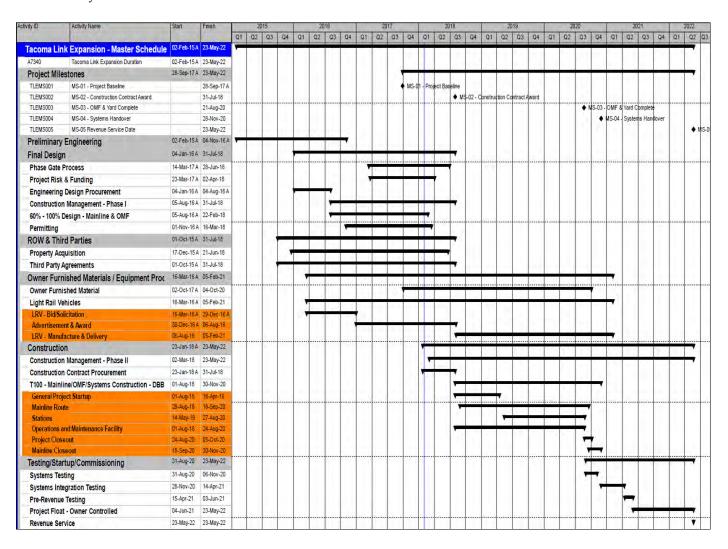
The Baseline Risk Assessment was conducted in May 2017. The 4th QTR 2017 Risk Review Meeting was held in December 2017. The 1st QTR 2018 Risk Review Meeting is scheduled for March 2018.

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## **Project Schedule**

The Master Schedule has been updated through the end of January. The 100% Design Package will be submitted in early January 2018. The sequence for coordinating the Issue for Bids (IFB) Plans with the bid documents has been revised. Notice to Proceed for the LRVs was completed this period. The project float is 11 months. The Revenue Service date remains May 2022.



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# Right-of-Way

The Tacoma Link Operations and Maintenance Facility will be expanded to the east and five new vehicles will be purchased. The right-of-way project involves the acquisition, including owner and tenant relocations as appropriate, of a range of property interests. Property interests includes compensable (e.g. fee acquisitions, permanent and temporary construction easements and non-compensable rights - e.g. rights of entry).

As of January 31, 2018, a total of 53 parcels are certified for Tacoma Link Extension. Approximately one property owner will be relocated as part of the project.

	Tacoma Link Extension Property Acquisition Status								
Line Section  Board Approved Approved Approved  Offers Made/In Negotiations  Signed Agree- sion and tions  Signed Agree- sion and Use  Description  Negotiations  Negotiations  Negotiations  Negotiations  Negotiations									
Total	53	40	3	0	0	1	1	0	

<sup>\*</sup>Number totals may differ from other reports due to the timing of reporting periods.

# **Community Outreach**

 Find updates regarding Community Outreach in the Sound Transit website:

https://www.soundtransit.org/Projects-and-Plans/Find-a-Project.

## **Sound Transit Board Actions**

Motion Number	Description	Date
	None to report this period.	

## **Environmental**

None to report.

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# **Final Design**

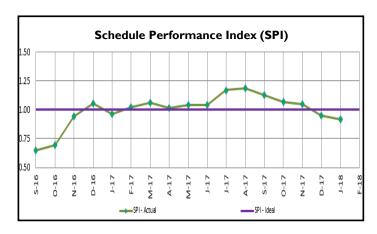
In July 2016 Sound Transit executed a contract with HDR Engineering, Inc. to provide civil and systems final design services for Tacoma Link.

# Final Design Key Activities

- Civil/Track/Station Design. Civil and track design activities continued to focus on the design of 100% design and resolution and incorporation of review comments.
- Continued coordination meetings with the City of Tacoma.

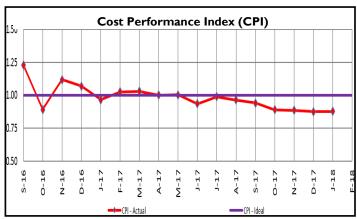
# Final Design Schedule Performance

The cumulative Schedule Performance Index (SPI) for the Final Design contract is 0.91 through January, indicating that the contract work performed is behind the original plan. The Consultant was scheduled to complete the design submittals earlier than originally anticipated but 100% submittal was slightly delayed. The Consultant anticipated to complete the IFB as originally planned.



# **Final Design Cost Performance**

Based on Actuals, the Contract expenditures through January totaled \$8.3M (Actuals), approximately 100% of the Final Design contract total. The Final Design contract percent complete reported at the end of December is 95%, with an earned value of \$7.4M. The cumulative Cost Performance Index (CPI) through January is 0.88; indicating expenditures greater than the budgeted cost for work performed. The Civil/Track/Station Design tasks are the greatest driver of the negative CPI. Two change requests were executed to address the increased scope in these tasks. The combination of these two requests was anticipated to be sufficient for HDR to compete the Final Design contract, but additional level of effort with Third Parties was necessary to complete the submittals.



Phase 3 Performance	Cumulative To-Date
Amount Invoiced	\$8.3M
% Spent	100%
Earned Value	\$7.4M
% Complete	95%
SPI	0.91
CPI	0.88

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# Link Light Rail Tacoma Dome Link Extension



## Scope

**Limits:** Federal Way Transit Center to South

Federal Way, Fife, East Tacoma, and

Tacoma Dome

**Alignment:** The Tacoma Dome Link extends light

rail 9.7 miles from the Federal Way Transit Center to Tacoma adjacent to I-5 with three elevated stations at South Federal Way, Fife, and East Tacoma and one

at grade/retained station at Tacoma

Dome.

**Stations:** South Federal Way, Fife, and East Taco-

ma, and Tacoma Dome

**Systems:** Signals, traction power, communications

(SCADA), Operations and Maintenance

Facility South (OMF South)

**Budget:** \$125.6 Million for Preliminary Engineer-

ing Phase 1—Alternative Development

**Phase:** Alternative Development

**Schedule:** Revenue Service– December 2030



Map of Tacoma Dome Link Extension.

# **Key Project Activities**

- Sound Transit Board approved Phase 1– Alternative Development budget in December 2017.
- Phase 1—Alternatives Development phase began in January 2018.
- The Tacoma Dome Link Extension Project Management Plan, Quality Management Plan, Earned Value Management Plan, and schedule draft are currently under review.

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# Link Light Rail Tacoma Dome Link Extension

# **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.

### Cost Summary by Phase

WBS Phase Elements	Authorized Project Allocation	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$26.8	\$0.5	\$0.6	\$26.8	\$0.0
Preliminary Engineering	\$87.1	\$10.3	\$0.1	\$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	\$5.7	\$0.0	\$0.0	\$5.7	\$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	\$125.6	\$10.8	\$0.7	\$125.6	\$0.0

### Cost Summary by SCC

Project Elements by SCC	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	\$110.8	\$10.8	\$0.7	\$110.8	\$0.0
90 Unallocated Contingency	\$9.8	\$0.0	\$0.0	\$9.8	\$0.0
Total (10 - 90)	\$125.6	\$10.8	\$0.7	\$125.6	\$0.0

# 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.

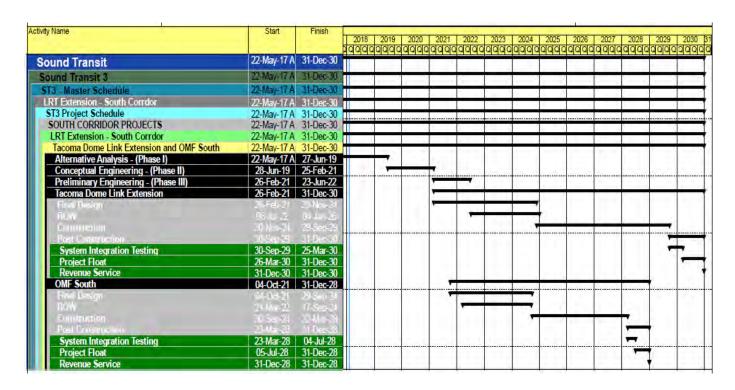
RCMP draft preparation and first risk review workshop will be scheduled in the 1st QTR 2018.

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# **Project Schedule**

The Tacoma Dome Link Extension and OMF South A/E contract has been issued for Phase I Alternative Analysis in January 2018. Alternatives will be identified and prepared for Board Approval in the 2nd QTR 2019. It is expected that an FTA Record of Decision will be Issued in the 2nd QTR 2022.



## **Sound Transit Board Actions**

Motion Number	Description	Date
	None to report.	

## **Environmental**

- Coordinating with FTA on initiation of Tribal consultation and Federal Register Notice under NEPA for Early Scoping.
- Preparing for Early Scoping public and agency meetings and comment period in 2nd QTR 2018.

# **Community Outreach**

 Find updates regarding Community Outreach in the Sound Transit website:

https://www.soundtransit.org/Projects-and-Plans/Find-a-Project.

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## **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.

**Budget**: \$449.2 Million (Baselined July 2016) **Schedule**: Project completion December 2020

Phase: Proceed to Construction



Map of OMF East site.

# **Key Activities**

- Cross-department meetings held to discuss design and implementation responsibility for WiFi service in OMF East yard and shops for handling on board vehicle information. The IT consultant will determine the scope for fiber and conduit needed for the facility.
- The King County Sewer Betterment has been reviewed and approved by Sound Transit's Capital Committee.
- Actively monitoring King County's preparation of the environmental review memo.
- The East Rail Corridor (ERC) interim trail will not be ready for public use till mind February 2018 even though the DB contractor has completed their work on the trail.

## **Closely Monitored Issues**

- Permit schedule for the Master Development Plan (MDP) by City of Bellevue is still pending approval and is a schedule risk. The issuance of the MDP is anticipated for March 2018 with a potential two week appeals period.
- The King County Sewer betterment scope is a closely monitored item. The scope increase and cost escalations require ST Board approval even though the cost will be tracked outside of the project accounting.
- Elements of DB Contractor's proposal (shear wall elimination for future development) may require MOU amendment with City of Bellevue.

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## **Project Cost Summary**

The Adopted Capital Budget 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.

#### Cost Summary by Phase

WBS Phase Elements	Baseline Budget	Authorized Project Allocation	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation vs. EFC
Administration	\$17.6	\$17.6	\$3.6	\$3.7	\$17.6	\$0.0
Preliminary Engineering	\$9.5	\$9.5	\$9.0	\$8.6	\$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	\$1.2	\$19.3	\$0.0
3rd Party Agreements	\$3.1	\$3.1	\$0.3	\$0.1	\$3.1	\$0.0
Construction	\$264.8	\$264.8	\$222.5	\$23.3	\$264.8	\$0.0
ROW	\$134.5	\$134.5	\$99.4	\$98.8	\$134.5	\$0.0
Total	\$449.2	\$449.2	\$352.5	\$135.7	\$449.2	\$0.0

For the month of January, there has been no change to the projects Estimated Final Costs, this number stands equal to the project budget at \$449.2M. During this period, the project incurred \$4.44M, of which the primary cost drivers were ROW costs amounting to \$0.65M and approximately \$3.7M on the M200 Design and Construction contract.

#### **Cost Summary by SCC**

Project Elements by Phase	Baseline Budget	Authorized Project Allocation	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized v Allocation vs. EFC
10 Guideway & Track Elements	\$2.6	\$2.6	\$4.0	\$0.9	\$4.0	-\$1.5
20 Stations	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
30 Support Facilities: Yards, Shops	\$140.1	\$140.1	\$123.8	\$7.4	\$145.7	-\$5.6
40 Sitework & Special Conditions	\$43.6	\$43.6	\$39.6	\$5.0	\$41.5	\$2.1
50 Systems	\$43.0	\$43.0	\$38.4	\$2.2	\$38.4	\$4.6
Construction Subtotal (SCC 10-50)	\$229.3	\$229.3	\$205.9	\$15.5	\$229.7	-\$0.4
60 Row, Land, Improvements	\$134.5	\$134.5	\$99.4	\$98.8	\$134.3	\$0.2
70 Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
80 Professional Services	\$71.6	\$71.6	\$47.1	\$21.4	\$71.4	\$0.2
90 Unallocated Contingency	\$13.8	\$13.8	\$0.0	\$0.0	\$13.8	\$0.0
Project Total (SCC 10-90)	\$449.2	\$449.2	\$352.5	\$135.7	\$449.2	\$0.0

# Risk and Contingency Management

### Risk Management

The Risk Contingency Management Plan (RCMP) established a risk management and oversight process for identifying, assessing, and monitoring risk and develop risk reduction/mitigation plans. It provides a tool for the project team to proactively manage risks on the project. Sound Transit continuously monitors 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 and/or schedule forecast. The project is currently working towards Milestone 2 (MS2), completing ROW Acquisition and mass grading. The OMF East quarterly risk register review meeting for 4th QTR 2017 was held in January 2018. The current top actively managed risk areas are listed below.

The Primary risk areas are for the project are listed below

Permitting: Delays in the approval process for permits will impact the project schedule

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#### Risk Management, continued

- *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 will impact the project schedule and budget.

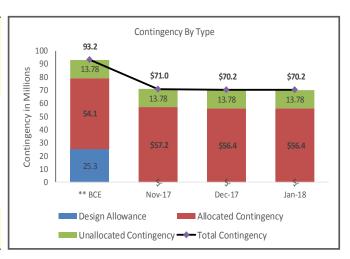
### **Contingency Status**

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. Approximately \$21.6M of Design Allowance was consumed and the remaining \$3.7M was allocated into the Design Build Contract. The project's starting contingency balance as of the Notice to Proceed for Construction was \$71.6M. For this period, the project has had to drawdown the contingency by \$21,806, primarily relating to design changes on the LRV Lifts. The current contingency balance is \$70.2M

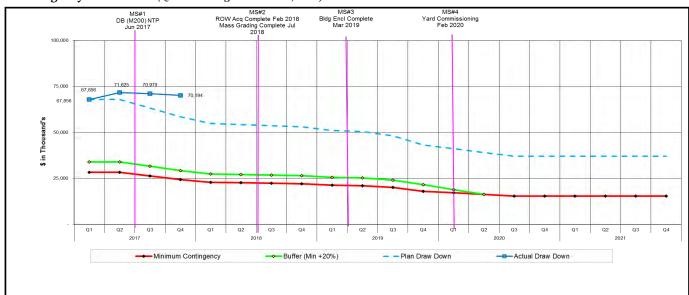
*Allocated Contingency (AC)* – Contingency dollars amounting to \$1.4M have been drawn down as of December 2017. This resulted in a drop of the remaining allocated contingency to \$56.4M.

Unallocated Contingency (UAC) - The baseline UAC amount of \$13.8M reflects no changes this period.

	Base	line	Current		
Contingency Status	Amount % of Total		Amount	% of Work Remain- ing	
Design Allowance	\$ 25.3	5.6%	\$ -	0.0%	
Allocated Contingency	\$ 54.1	12.0%	\$ 57.2	18.2%	
Unallocated Contingency	\$ 13.8	3.1%	\$ 13.8	4.4%	
Total	\$ 93.2	20.7%	\$ 70.2	22.6%	



#### Contingency Drawdown (Quarter ending December 31, 2017)

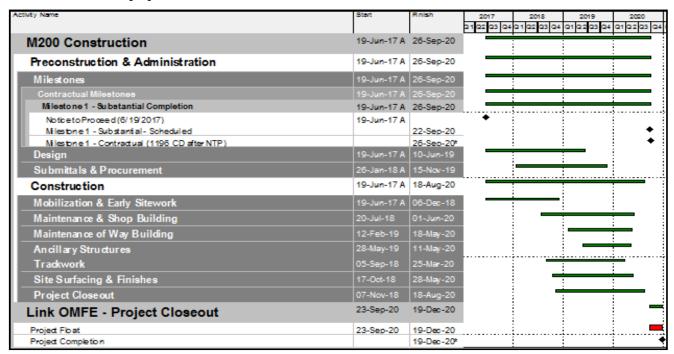


Note: Earlier versions of the Contingency Drawdown graph had inadvertently displayed Milestone 2 (MS2) in 1st QTR 2018. MS2 is now correctly shown in 3rd QTR 2018.

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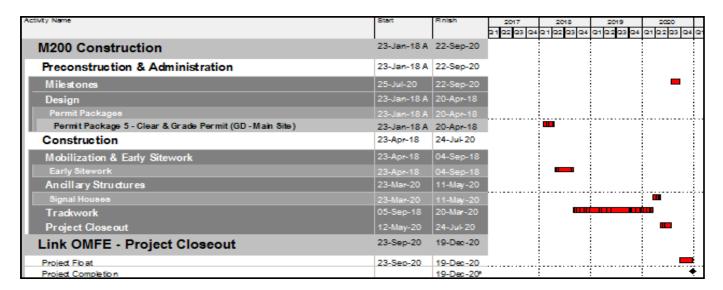
## **Project Schedule**

All property acquisition and owner-furnished permitting has been completed. The schedule for OMF East is now entirely within the M200 contract, which is presented below. In January, the Contractor continued advancing all design and permitting packages. The Master Development Plan is currently under review by the City of Bellevue and is anticipated to be issued in March, after which major construction will begin. Construction in January was limited to demolition and abatement in preparation of mass sitework.



# **Critical Path Analysis**

The critical path is now fully within the M200 contract. It runs through site preparation, including demo and abatement of existing structures. After grading is complete, the trackwork in the yard is the critical path, leading into signalization and testing at the end of the project.



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# Right of Way

Filed condemnations and requested Possession and Use of all properties. Continued relocations of tenants and settling acquisitions. This period, one additional parcel vacated. The right- of-way program status is summarized below:

Link OMF East Property Acquisition Status										
Board Made/In Approved proved tions Signed Agreements				Posses- sion and Settle- Use ment		Closings to date	Reloca- tions Required	Parcels Vacated		
Total*	11	10	0	2	0	6	32	14		

<sup>\*</sup>Number totals may differ from other reports due to the timing of reporting periods.

## **Sound Transit Board Actions**

Board motions and resolutions directly related to OMF East is summarized in the table below.

Motion Number	Description	Date
M2018-08	Increase the contract contingency for the design-build construction services contract with Hensel Phelps construction C. for the OMF East project to allow for the implementation of a betterment reimbursement agreement with King County in the amount of \$1,636,364, for a new total authorized contract amount not to exceed \$242,439,564.	Jan 25

# **Community Outreach**

 Find updates regarding Community Outreach in the Sound Transit website:

<u>https://www.soundtransit.org/Projects-and-Plans/Find-a-Project.</u>

## **Environmental**

 Wetland Mitigation Permit is under review by King County

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## Contract M200 - OMF East Design Build

## Scope

Design and construct an O&M facility with offices and furnishings, storage yard for 96 LRVs, vehicle maintenance facility, Maintenance of Way (MOW) facility, bike trail, and light rail system elements [Traction Power Substation (TPSS), Overhead Catenary System (OCS), Communications and Supervisory Control & Data Acquisition (SCADA)] in Bellevue, WA.

## **Current Progress**

The M200 Contractor continued to work on the early design and permit packages. The City of Bellevue provided comments on Permit Packages 5,6 and 8 in January and the DB contractor is working on addressing the comments and preparing for resubmittal in February. Additionally, design also progressed along on the three primary design packages with submittal of 60% design on design packages 2 and 4.

In January, the DB Contractor completed the abatement of hazardous materials at all the buildings contained in the North portion of the site. Demolition was completed at the Papermill, Staple and Nail and former co-location office. The demo team has moved on to the Phase 2 (north side) buildings, beginning with the Audio and Nextile Buildings. Temporary fencing has been installed along 120th Ave and is currently being installed along the ERC, North and south side of the project.

## **Schedule Summary**

The Contractors baseline schedule has been approved. The Contractors progressed schedule has undergone minor modifications from the baseline to reflect actual progress and to account for change orders. The critical path remains unchanged from the approved baseline schedule. The ST controlled schedule float remains untouched for the period.

lyty Name	Start	Rnish	2017	2018	2019	2020
M200 Construction	19-Jun-17 A	26-Oct-20	01 02 03 04	Q1 Q2 Q3 Q4	@1 @2 @3 @4	Q1 Q2 Q3
Preconstruction & Administration	19-Jun-17 A	26-Oct-20	₩			:
Milestones	19-Jun-17 A	26-Oct-20	⊩ <del></del>	:		:
Contractual Milestones	19-Jun-17 A	26-Oct-20	<b> </b>			
Milestone 1 - Substantial Completion	19-Jun-17 A	26-Sep-20	<b>├</b>			<del>!                                      </del>
Notice to Proceed (6/19/2017)	19-Jun-17 A		. +			
Mileston e 1 - Substantial - Scheduled		26-Sep-20				
Milestone 1 - Contractual (1196 CD after NTP)		26-Sep-20*		:		! '
Milestone 2 - Final Completion	19-Jun-17 A					
Design Milestones	23-Jan-18			· · · · · · · · · · · · · · · · · · ·		<u> </u>
Interim Construction Milestones			-	: :		:
Two Year Energy Performance Guarantee	27-Sep-20			: :		<u>:</u>
Ad ministration	19-Jun-17 A					•
Coordination of Work by Others	22-Nov-17 A	19-Mar-20	▼			
Design	19-Jun-17 A	10-Jun-19				
Design Packages			· ·			
Permit Packages	19-Jun-17 A	12-Jun-18	<b>!</b> -	<del></del> :		
Design Administration	19-Jun-17 A	10-Jun-19	<b>!</b>			
Submittals & Procurement	05-Dec-17	22-Oct-19				
Construction	19-Jun-17 A	20-Aug-20	· -			•
Mobilization & Early Sitework	19-Jun-17 A	10-Dec-18	· ·			
Maintenance & Shop Building	26-Jul-18	04-Jun-20		•		•
Maintenance of Way Building	15-Feb-19	21-May-20			*	•
An cillary Structures	31-May-19	13-May-20			•	_
Trackwork	07-Sep-18	27-Mar-20		_		•
Site Surfacing & Finishes	17-Oct-18	01-Jun-20	[	•		-
Project Closeout	09-Nov-18	20-Aug-20		₩.		<del>;                                    </del>

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#### **Next Period's Activities**

- Tree and vegetation removal and site clearing will continue in the next period
- Installation and energization of temporary construction power and lighting
- Complete the perimeter security fencing and fabric installation around the trail and project site
- Start work on 100% design for design packages (DP) 1,2 and 4.
- Continue working on the 60% design package for DP
   3—Trackwork and Systems.

## **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.
- Storm Water Management: The Contractor has submitted an RFP claiming that AO issued by Department of Ecology (DOE) introduces new requirements that were not identified during bid. ST is currently having meetings with the Contractor to discuss and understand the issue.

## **Cost Summary**

Present Financial Status	Amount
M200 Contractor – Hensel Phelps	
Original Contract Value	\$218,912,000
Change Order Value	\$1,494,995
Current Contract Value	\$220,406,995
Total Actuals (Incurred to Date)	\$21,243,4810
% of Authorized Billed to Date	9.6%
Physical Percent Complete	9.6%
Authorized Contingency	\$21,891,200
Contingency Drawdown	\$1,494,995
Contingency Index	1.41



Working on temporary overhead powerline.

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# 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.

**Budget**: \$740.7 Million (Baseline September 2015

Amended April 2017)

Schedule: Project completion 3rd QTR 2024

Phase: Manufacturing



Graphic simulation of the new light rail vehicles.

## **Key Activities**

- Conducted Automatic Passenger Counting System and Event Recorder Final Design Review (FDR).
- Continued production of the vehicles' main and end girders at Siemens Sacramento Facility.
- Commenced car shell major assemblies.

# **Closely Monitored Issues**

- Resolution of the jacking point non-compliance resolved through change in LRV lift design, commercial issue remains open with Siemens; deductive change order draft initiated.
- Provision of Wi-Fi facilities (wireless access points, switches, etc.) at OMF East.
- OMF Forest Street yard storage capacity in 2020 may limit Siemens LRV delivery schedule; production progress being monitored closely.

# **Project Cost Summary**

The LRV Fleet Expansion Project has an approved baseline budget of \$740.7M. The project cost is summarized below by two cost categorizations. In the first table, the cost is summarized in accordance with Sound Transit's Work Breakdown Structure (WBS) at the Phase Level. The second table summarizes the project in accordance with the FTA's Standard Cost Category (SCC) format. Both tables below are shown in millions.

In January 2018, the project incurred to date costs increased nominally by about \$97K. The incurred cost remains unchanged due to rounding at \$74.2M The majority of this periods cost is attributed to design and inspection in the support of document reviews for the final design review (FDR).

Project Phase	Baseline Budget	Authorized Project Allocation	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation Vs. EFC
Administration	\$6.4	\$6.4	\$0.8	\$0.6	\$6.4	\$0.0
Construction Services	\$18.0	\$18.0	\$4.8	\$2.7	\$18.0	\$0.0
Vehicles	\$716.3	\$716.3	\$648.2	\$70.9	\$716.3	\$0.0
Total	\$740.7	\$740.7	\$653.8	\$74.2	\$740.7	\$0.0

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

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## **Cost Summary by SCC**

SCC Element	Baseline Budget	Authorized Project Allocation	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Authorized Allocation Vs. EFC
Construction Subtotal (SCC 10-50)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
60 ROW, Land, Existing Improvements	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
70 Vehicles	\$702.8	\$702.8	\$653.0	\$73.6	\$702.8	\$0.0
80 Professional Services	\$6.1	\$6.1	\$0.8	\$0.6	\$6.1	\$0.0
90 Contingency	\$31.7	\$31.7	\$0.0	\$0.0	\$31.7	\$0.0
Capital Total (SCC 10-90)	\$740.7	\$740.7	\$653.8	\$74.2	\$740.7	\$0.0

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

## **Risk and Contingency Management**

### Risk Management

The RCMP established 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. Sound Transit (ST) 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.

ST is currently updating the qualitative risk register for the quarter ended on December 31, 2017.

## **Cost Contingency Management**

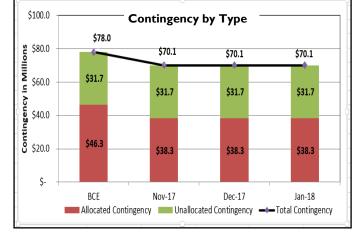
The project's baseline budget approved by the ST Board in September 2015 contained a total of \$78.0M of Total Contingency. The project's Total Contingency is currently at \$70.1M or about 12% of remaining work in the project.

Design Allowance – This project contains \$0 design allowance.

*Allocated Contingency* – The project baseline's allocated contingency was \$46.3M. The current available allocated contingency is \$38.3M. No contingency was utilized this period.

Unallocated Contingency - The project baseline's unallocated contingency remained unchanged at \$31.7M.

Contingency		Base	eline	Current						
Status	А	mount	% of Total	A	mount	% of Work Remaining				
Design Allowance	\$	-	0.0%	\$	-	0.0%				
Allocated Contingency	\$	46.3	6.4%	\$	38.3	6.6%				
Unallocated Contingency	\$	31.7	4.3%	\$	31.7	0.0%				
Total	\$	78.0	10.7%	\$	70.1	12.0%				



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

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## **Project Schedule**

The LRV Fleet Expansion project schedule is shown below. Siemens has completed the Preliminary Design Review (with the exception of the carbody design) and is currently working on Final Design Review. Car shell manufacturing continued on the main cross girder and coupler anchor sub-assemblies.

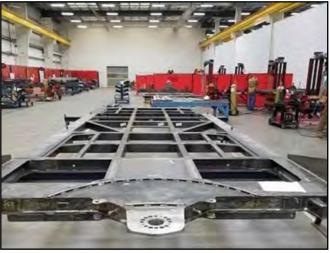
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			0 0	2 Q	Q	2 Q	d	Q	2 0	Q	Q C	2 0	Q	Q	2 0	Q	0	2 0	Q	2 0	Q	2 Q	Q	ı
LRV Procurement Schedule	10-Oct-16 A	28-Aug-24																						
LRV Engineering and Manufacture	10-Oct-16 A	11-May-22																						
LRV Design Reviews, Manufacturing, and System Tests	10-Oct-16 A	11-May-22	<del></del>			Ť	-		Ť		•	Ť		1	Ť		•		П				-	
LRV Delivery Schedule	21-Nov-18	28-Aug-24								П			П			П			П					
LRV#1-122 (122 LRV Base Order)	21-Nov-18	14-Nov-22									j		Ш		<u>.</u>									
Delivery of 1st LRV		21-Nov-18		T						П	1		П		1	П	ï		П		T			
Delivery of 40th LRV - Northgate Link Vehicle Deliveries Complete		13-Mar-20	]; ;																П					ı
Delivery of 42nd LRV - Max.Capacity at Existing OMF at capacity (104 LRVs)		02-Apr-20								♦	٠		:									1 1	. :	ı
Final Acceptance of Vehicles		14-Nov-22					H			Н			H			Н	-		11					
Delivery of 122n dLRV - Final ST2 Delive ny		12-May-22	JIi.	. [		<u>. i</u>	Li	L.	<u>. j</u>	Li	j	<u>i</u>	L	İ.	.j	L	٠	. i	Li	i)			İ.	
LRV #123 - 152 (30 LRV Options) - Change Order #4	26-Feb-24	28-Aug-24								П			Н				- 1		Н			1 1	. :	ı
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Final Acceptance of Vehicles		28-Aug-24	]: :			1		:			1	1		- 1			1	1				1 1	٠	
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LRV #1-122 - Base Order	14-Nov-22	11-Feb-23								Li			Ш		.i	L	. !		Li					l
ST-Controlled Float	14-Nov-22	11-Feb-23	]:''``	T						T	-1.		П				ï						- 1	
LRV Procurement Complete - LRV #1 -#1 22		11-Feb-23	]; ;									1			1			1	•			1		I
LRV #123 - #152 - CO #4	28-Aug-24	28-Aug-24									-				1							1	. :	I
LRV Procurement Complete - LRV #123 - #152		28-Aug-24	ننا	<u>L</u>		1	Li	1	<u> </u>	Li	1	<u> </u>	L		<u>:</u>	Li		<u>:</u>	Li	<u></u>	Ш	╝	٠	

## **Critical Path Analysis**

Siemens is trending substantially ahead of their baseline schedule; the 1st LRV #001 delivery is trending 81 days ahead of the schedule target completion date. Delivery of all light rail vehicles required for Northgate Link operations is currently anticipated nearly 1 year ahead of the start of revenue service. The light rail vehicles requirements for East Link operations is anticipated at almost 18 months ahead of that revenue service.



Side wall assemblies for the car body.



Underframe assembly for the carbody.

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# Project Staffing - Link Light Rail Program

### 2017 Year End Resource Assessment and Analysis

• An average of 595.8 FTE/mo. consultant and in house staff (Table 1) participated in the major Link light rail projects in 2017. Overall, staffing was within 5% of the Plan for the year with internal staffing at 79% and consultant staffing 113% of plan. Staffing met resource needs for maintaining schedule, addressing project technical challenges and issues, and performing stakeholder outreach.

					2017 S	taff Variar	ice Avg. F1	ΓΕ/mo.						
		Consultant Staff Sound Transit Staff Total									tal			
	F1	ΓΕ	Vari	iance	F1	ΓΕ	Vari	Variance		Variance		TE	Vari	iance
Project	Planned	Actual	FTE	% of Plan	Planned	Actual	FTE	% of Plan	Planned	Actual	FTE	% of Plan		
Federal Way Link Extension	42.0	49.2	7.2	117%	37.9	20.2	-17.7	53%	79.9	65.9	-14.0	82%		
Northgate Link Extension	71.1	86.8	15.7	122%	44.2	39.7	-4.5	90%	115.3	120.6	5.3	105%		
OMF East	6.6	4.1	-2.5	63%	16.7	7.6	-9.1	46%	23.3	11.2	-12.1	48%		
East Link Extension	66.8	114.6	47.9	172%	72.1	63.0	-9.1	87%	138.8	172.0	33.2	124%		
Lynnwood Link Extension	178.0	156.4	-21.6	88%	51.9	42.6	-9.4	82%	229.9	184.1	-45.8	80%		
Tacoma Link Extension	24.0	29.3	5.3	122%	18.1	16.3	-1.8	90%	42.1	43.5	1.5	103%		
Total	388.5	440.4	52.0	113%	240.9	189.4	-51.5	79%	629.3	595.8	-31.9	95%		

Table 1: 2017 Link Staffing

• Variance by project for 2017 for the major Federal Way, Tacoma, Lynnwood, East, and Northgate Link Extensions and the Link Operations and Maintenance Facility (OMF): East follows. Variance reporting for these projects will continue to revenue service.

**Federal Way Link Extension:** Staffing for the Federal Way Link Extension in 2017 was 82% of plan. Consultant staffing was 117% of plan and internal staffing 53% of plan. In 2017 the Record of Decision was received and the project delivery strategy selected for the Federal Way Link Extension. As a Design-Build project, internal and consultant staff were defining project requirements, identifying right-of-way needs, and developing New Starts Rating and Entry into Engineering applications and procurement documents. A request for qualifications for the design-builder is expected to be released in April 2018.

**Northgate Link Extension:** Staffing was 105% of plan. Consultant staffing was 22% above plan and internal staffing 10% below plan. During the year, construction progressed with the completion of tunneling; construction continues on station finishes, Northgate parking garage, systems elements, and the elevated guideway.

*East Link Extension:* In 2017, construction along the alignment, including tunneling, began. Staffing was 124% of plan. Consultant staffing was 172% of plan and internal staffing 87% of plan.

*Lynnwood Link Extension:* Sixty percent design submittals were developed and with the acquisition of properties along the alignment, preparations were made for procurement for early demolition in 2018. The Invitation for Bid (IFB) for the demolition was issued in January 2018, with an anticipated award in April 2018. Staffing was 80% of plan. Internal and consultant staffing trended 82 % and 88% of plan, respectively.

*Tacoma Link Extension:* Design of the Tacoma Link Extension was completed and development of the IFB began. The IFB is anticipated to be issued in April 2018. Staffing was 103% of plan. Internal and consultant staffing trended 90% and 122% of plan, respectively.

*Link Operations and Maintenance Facility: East:* The design build contract was awarded and the contractor initiated design development and mobilized for early works including building demolition and the construction of the temporary trail for the Eastside Rail Corridor connection. Staffing was 48% of plan with internal and consultant staffing at 46% and 63% of plan, respectively.

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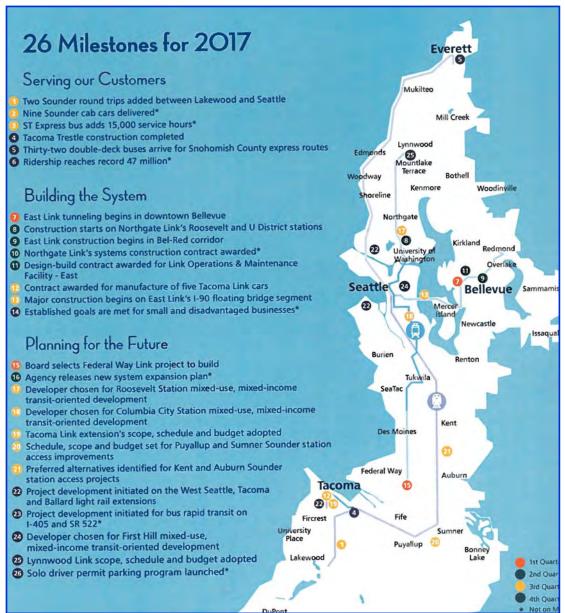
## 2017 Year End Resource Assessment and Analysis, cont'd

- In 2017, 15 of the Agency's 26 annual milestones (See Milestones) were related to the capital program; Sound Transit met all but two of these milestones, adopting a baseline scope, schedule and budget for the Lynnwood Link Extension and for the Puyallup and Sumner Stations access improvement projects. Baselining the Lynnwood Link Extension was deferred to perform a detailed analysis to identify measures to reduce construction cost as the cost estimate for construction based on the 60% design submittals was considerably higher than estimates developed during preliminary engineering. The Puyallup and Sumner Station access improvements are being delivered with a design build, alternative delivery method. Baselining for these projects will occur upon completion of project requirements and in advance of the request for qualifications.
- In 2017, Sound Transit was recognized trade organizations and publications for technological innovation and project management. *Popular Science Magazine* and *Engineering News Record* (ENR) recognized the East Link Extension track bridge as one of the most important innovations in engineering in 2017 and one of the top 25 newsmakers, respectively. In addition, the Project Management Institute selected the University Link Extensions as one of three finalists for their Project of the Year Award.
- To meet the staffing requirements of on-going projects, 56 positions were filled in Design Engineering and Construction Management (DECM) in 2017. Forty-two of the approved 294 positions in Design, Engineering and Construction Management remained vacant at the end of the year (Table 2).
- In keeping with our commitment to retain institutional knowledge, capitalize on experience working on Sound Transit projects, familiarity with our processes, systems, policies and procedures and to provide advancement opportunities for our staff, 24 (43%) of the positions filled in 2017 were through internal promotions. The voluntary attrition rate for DECM in 2017 excluding retirees was 5%.
- Over \$2 billion in engineering and construction services contracts were awarded in 2017 (Table 3). We continue to recognize value in using general contractor/construction manager and design-build alternative procurement methods, and have implemented lessons-learned from the construction of the University and S. 200<sup>th</sup> Link Extensions on the Lynnwood, Federal Way, and Downtown Redmond Link Extensions. Among these lessons includes bringing the GC/CM contractor on board early, following preliminary engineering, to provide the design teams insights related to construability, and for D/B, specifying only must-have requirements thereby providing the contractor flexibility in designing non-critical facility/system elements and procuring the Design-Build Project Management Consultants in advance of issuing the request for qualifications.
- In 2017 we continued the Lean, Continuous Process Improvement (CPI) and Management Excellence programs. Sound Transit provided Kaizen training to an additional 48 staff members bringing the total trained to over 50% (496) of Sound Transit staff. In its fourth year, 39 staff members participated in our year-long Management Excellence Program (MEP). Through this program, participants receive 100 hours of training in advanced project management, interpersonal relations, and CPI. To date 123 Sound Transit managers have participated in the MEP. Sound Transit has accepted an additional 41 staff members to participate in the 2017 MEP starting in 2Q 2018.
- In late 2017 project development services for the West Seattle-Ballard Link Extension were procured; the procurement process for project development for the Bus Rapid Transit (BRT), Tacoma Dome Link Extension and S. Sounder station access improvements projects was also initiated (Table 4).
- We continue to enjoy a partnership with the American Council of Consulting Engineers (ACEC) and the Association of General Contractors (AGC) of Washington whose membership work with Sound Transit to gain a better understanding of our work program and the systems and processes to ensure on time and budget project performance. These trade groups share industry trends, lessons-learned and experiences with other transit providers with Sound Transit. We are fortunate that a number of our consultants and contractors have direct experience with Sound Transit with both Link and non-Link related transit infrastructure development minimizing the learning curve.

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## 2017 Agency Milestones



# **Future Reporting**

Sound Transit has reviewed over seven years of staffing variance data and has determined there is very little month to month variance in consultant and internal staffing levels. To that end, beginning with the next quarterly report, (April 2018 for period ending March 2018), future variance reporting only be included in the quarterly Agency Progress Report. In addition, we have made enhancements to the graphical data presentation that will at a glance allow an assessment of staffing levels for the quarter and year to date relative to plan. Lifetime staffing levels will no longer be reported as the plan for "lifetime planned" changes with each annual update to the staffing plan. We will however maintain the capability to readily provide lifetime data should it be necessary. Lastly, the progress on each project, e.g., phase of engineering, is provided in the progress report itself; reporting of staffing levels by consultant discipline will therefore be discontinued.

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	Table 2 P	ositions Filled in 2017	
Technical Advisor	Civil Engineer ROW	Project Control Specialist	Construction Claims Specialist
Chief of Staff	Design Technology Spec.	Configuration Coordinator	Deputy Director Construction Man
Project Coordinator (OMFE/LRV)	Corridor Design Manager Sounder-Ops	Document Control Coordinator	Construction Manager South Corri
Deputy Director - East Link	Corridor Design Manager Tacoma Link Extension	Configuration & Change Control Specialist	Construction Manager Federal Wa
Deputy Director Federal Way	Sr. Civil Engineer Northgate Link Extension	Project Control Supervisor South Corridor	Community Outreach Specialist (3)
Director Tacoma Dome	Civil Engineering Supervisor	Project Control Specialist North Corridor	Executive Project Director Federal
Director West Seattle to Ballard	Principal Construction Manager Systems	Cost Engineer Program Manager	Leasing Document Coordinator
Director Redmond Link	Construction Manager Systems	Program Manager Reporting & Training	Property Management Assistant M
Project Coordinator Permits	Systems Engineer	Project Control Manager	Principal Architect
Assistant Permit Admin (2)	Mechanical Engineer	Sr. Project Control Specialist East Link Extension	Public Art Program Manager
Deputy Director Civil & Structural	Corridor Design Manager Systems	Project Manager - Noncorridor projects	Real Property Coordinator (2)
Director Civil & Structural	Train Control Engineering Manager	Principal Construction Manager East Link Extension	Sr. Real Property Agent Appraisals
Civil Engineer Utilities	Sr. Systems Engineer Operations	Construction Manager Systems	Deputy Director Real Property
Civil Engineer (2)	Real Property Coordinator	Principal Construction Manager (2)	Sr. Real Property Agent Appraisals
	Vac	ancies Year End	
Sr. Project Manager OMF: East	Corridor Design Manager Federal Way	Sr. Mechanical Engineer	Construction Manager (3)
Deputy Project Director Northgate	Civil Engineer (2)	Manager Civil-Systems Integration	Principal Construction Manager
Executive Project Director	Design Technology Specialist	Construction Manager Systems	Administrative Specialist CM
Sr. Project Manager Sounder	Sr. Civil Engineer (3)	Sr. Systems Engineer Operations Technology	Community Outreach Specialist (3)
Sr. Project Coordinator East Link	Engineering Standards Program Manager	Sr. Project Control Specialist	Agreements Analyst Property Mgn
Project Coordinator East Link	Manager Systems Testing	Risk Engineer Program Manager	Sr. Architect (2)
Project Director Bus Rapid Transit	Sr. Systems Engineer Vehicles	Sr. Scheduling Engineer	Architect
Project Manager East Link (2)	Sr. Systems Engineer Signals	Deputy Construction Manager (2)	Real Property Agent

Table 3 Design and Construction Contracts Awarded in 2017

Contract	C	Contract Value
East Link Extension Bel Red Corridor Construction Services	\$	94,385,032
On Call Noise and Vibration Services	\$	405,000
University District Station Finishes	\$	159,836,688
Construction Management Services Tacoma Link Extension	\$	525,691
East Link Extensiion Downtown Bellevue and Spring District Construction Services	\$	229,319,622
Construction Management Services Operations & Maintenance Facility: East	\$	17,512,000
Northgate-East Link Extension Systems Construction	\$	360,428,571
Design Build Operations and Maintenance Facility: East	\$	220,406,995
Right of Way Acquisition and Relocation Support Services #1	\$	25,000,000
Right of Way Acquisition and Relocation Support Services #2	\$	25,000,000
Right of Way Acquisition and Relocation Support Services #3	\$	20,000,000
East Link Extension Seattle to S. Bellevue Construction Services	\$	666,020,000
Construction Management Services East Link Extension Seattle to S. Bellevue Amendment	\$	38,961,465
Deasign Services During Construction Tacoma Link Extension	\$	2,351,731
Light Rail Vehicles Option	\$	131,636,840
Federal Way Link Extension Design Services Option	\$	11,206,215
Syatems Construction Management Services Northgate, East and Lynnwood Link Extensions	\$	40,269,163
Groundborne Vibrtation Assessment Services	\$	1,702,292
Design Services During Construction East Link Extension Seattle to S. Bellevue Amendment	\$	13,200,000
Project Development Services West Seattle to Ballard Link Extension	\$	26,853,221
Project Development Services Tacoma Dome Link Extension	\$	10,289,907
Tacoma Link Light Rail Vehicles	\$	29,225,025
Public Involvement Consultant Services	\$	1,450,000
Total System Expansion Contracts Awarded	\$	2,124,535,458

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**Table 3 Design and Construction Contracts Awarded in 2017** 

Contract	C	ontract Value
East Link Extension Bel Red Corridor Construction Services	\$	94,385,032
On Call Noise and Vibration Services	\$	405,000
University District Station Finishes	\$	159,836,688
Construction Management Services Tacoma Link Extension	\$	525,691
East Link Extensiion Downtown Bellevue and Spring District Construction Services	\$	229,319,622
Construction Management Services Operations & Maintenance Facility: East	\$	17,512,000
Northgate-East Link Extension Systems Construction	\$	360,428,571
Design Build Operations and Maintenance Facility: East	\$	220,406,995
Right of Way Acquisition and Relocation Support Services #1	\$	25,000,000
Right of Way Acquisition and Relocation Support Services #2	\$	25,000,000
Right of Way Acquisition and Relocation Support Services #3	\$	20,000,000
East Link Extension Seattle to S. Bellevue Construction Services	\$	666,020,000
Construction Management Services East Link Extension Seattle to S. Bellevue Amendment	\$	38,961,465
Deasign Services During Construction Tacoma Link Extension	\$	2,351,731
Light Rail Vehicles Option	\$	131,636,840
Federal Way Link Extension Design Services Option	\$	11,206,215
Systems Construction Management Services Northgate, East and Lynnwood Link Extensions	\$	40,269,163
Groundborne Vibrtation Assessment Services	\$	1,702,292
Design Services During Construction East Link Extension Seattle to S. Bellevue Amendment	\$	13,200,000
Project Development Services West Seattle to Ballard Link Extension	\$	26,853,221
Project Development Services Tacoma Dome Link Extension	\$	10,289,907
Tacoma Link Light Rail Vehicles	\$	29,225,025
Public Involvement Consultant Services	\$	1,450,000
Total System Expansion Contracts Awarded	\$	2,124,535,458

Table 4 Procurements in the Works 4Q 2017	Anticipated Award Date
Design Build Project Management Services for Federal Way Link Extension	
SR 522/SR 523 Bus Rapid Transit (BRT)	February 2018
I-405 Bus Rapid Transit (BRT) and Bus Operations	
Environmental On Call Services	March 2018
Lynnwood Link Extension Early Demolition	April 2018
Response to Proposal Submittal Federal Way Link Extension Design-Build (D/B)	May 2018
Downtown Redmond Link Extension DBPM	May 2018
Response to Proposal Submittal Downtown Redmond Link Extension D/B	July 2018
Construction Tacoma Link Extension	August 2018
Sounder Commuter Rail A&E Program Consultant	September 2018

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# Project Staffing - Link Light Rail Program - December 2017

Positions filled during December 2017 are identified in Table 5; positions where recruiting is on-going for design, engineering and construction management staff were identified in Table 2.

Position	Project Assignment	Planned Hire Date		
Project Control Supervisor	East Corridor	December2017*		
Sr. Real Property Agent	Real Property	December 2017*		
Civil Engineering Supervisor	Right-of-Way	December 2017*		
Community Outreach Specialist	Central Corridor	2017 Attrition		
Project Manager	Non-Corridor Projects	2017 Attrition		
Construction Contracts Claims Sp.	Construction Management	2016 Attrition		

<sup>\*</sup>Internal Promotion

There were 597.5 (95% of plan) consultant and internal staff full time equivalents (FTE) participating in the on-going planning, design and construction of Link light rail extensions in December.

Staffing variance to plan for the month and year to date summary is provided in Table 6.

Table 6 Staffing Variance to Plan

	Staff Variance December												
		Consult	ant Staff			Sound Tra	nsit Staff			Total (A	VG. YTD)		
	FI	E	Vari	ance	FI	Έ	Vari	ance	F	ΓΕ	Variance		
Project	Planned	Actual	FTE	% of Plan	Planned	Actual	FTE	% of Plan	Planned	Actual	FTE	% of Plan	
Federal Way Link Extension	42.0	40.2	-1.8	96%	37.9	22.6	-15.3	60%	79.9	65.9	-14.0	82%	
Northgate Link Extension	71.1	59.4	-11.7	84%	44.2	35.4	-8.8	80%	115.3	120.6	5.3	105%	
OMF East	6.6	8.7	2.1	132%	16.7	7.6	-9.1	46%	23.3	11.2	-12.1	48%	
East Link Extension	66.8	177.0	110.2	265%	72.1	56.9	-15.2	79%	138.8	172.0	33.2	124%	
Lynnwood Link Extension	178.0	144.8	-33.2	81%	51.9	38.6	-13.4	74%	229.9	184.1	-45.8	80%	
Tacoma Link Extension	24.0	10.6	-13.4	44%	18.1	13.4	-4.7	74%	42.1	43.5	1.5	103%	
Total	388.5	440.8	52.3	113%	240.9	174.4	-66.4	72%	629.3	597.5	-31.9	95%	

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## Operations & Maintenance Facility: East Staffing

Total Internal and External Staffing - OMF East

There were 7.6 internal and 8.7 consultant FTE participating in the Operations & Maintenance Facility: East project in December. This is 10% (1.8 FTE) below November staffing and 70% of plan. Average year-to-date staffing (11.8 FTE/mo.) is 49% (11.5 FTE/mo.) below plan. All consultant staffing in December was providing design-build project management services.

		Labor Hour	's to Date		Current Period Dec 2017						
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended			
No. of Hours	44,716.8	22,575.7	-22,141.2	50.5%	3,726.4	2,614.7	-1,111.8	70.2%			
Monthly Average	3,726.4	1,881.3	-1,845.1								
Monthly FTE	23.3	11.8	-11.5		23.3	16.3	-6.9				

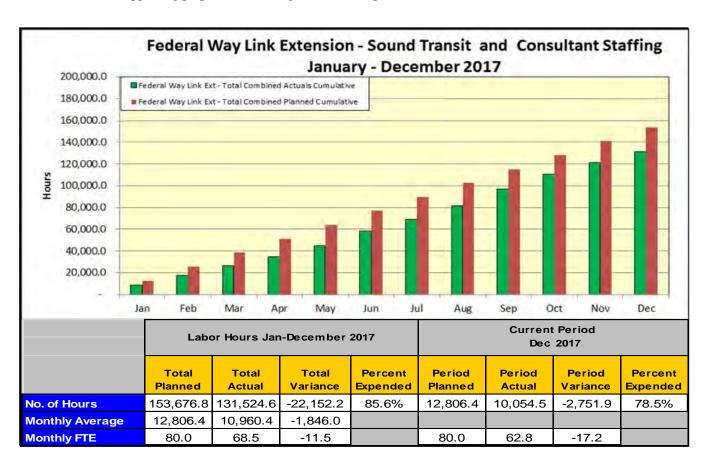
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## Federal Way Link Extension Staffing

### Total Internal and External Staffing – Federal Way Link Extension

There were 62.8 (79% of plan) consultant and internal staff assigned to the Federal Way Link Extension in December including 40.2 consultant FTE (96% of plan) and 22.6 internal FTE (60% of plan). Staffing was 7% (4.4 FTE) below November staffing; cumulatively from January 2017 average staffing is trending 14% (11.5 FTE/mo.) below plan. All consultant staff is supporting preparation of design-build (D-B) procurement documents.

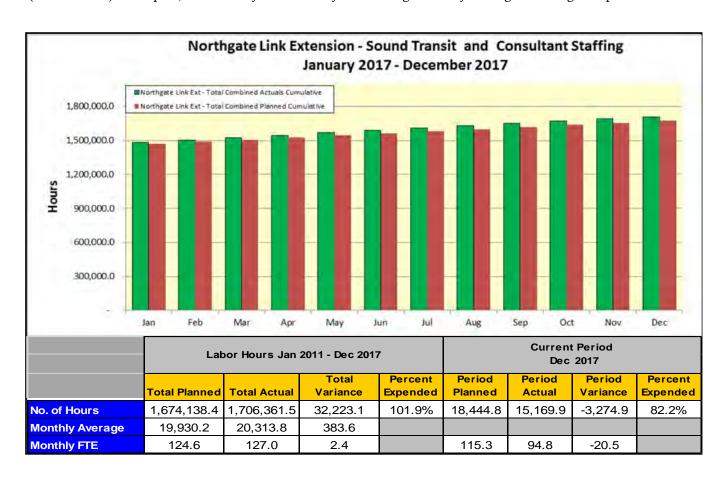


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# Total Internal and External Staffing - Northgate Link Extension

During December, 94.8 internal and consultant FTE were assigned to the Northgate Link Extension. This is 18% (21.1 FTE) below November staffing and is 18% (20.5 FTE) below plan. Average year-to-date staffing (120.6 FTE/mo.) is 5% (5.3 FTE/mo.) above plan; cumulatively since January 2011 average monthly staffing is trending with plan.

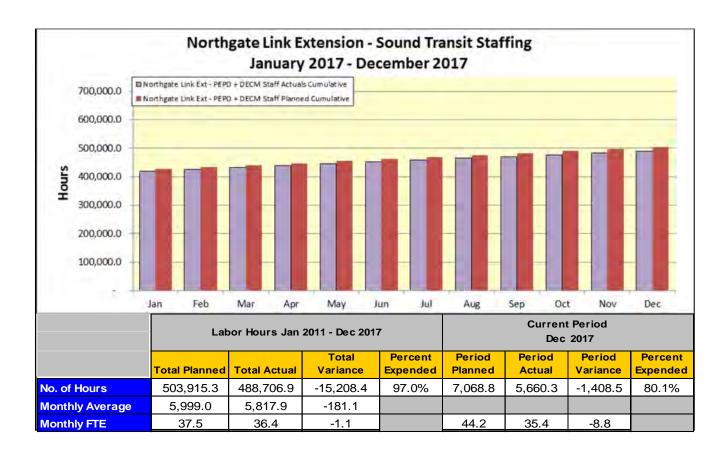


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#### Internal Resource Commitments to Northgate Link Extension

Internal staffing in December (35.4 FTE) decreased 7% (2.5 FTE) from November and was 20% (8.8 FTE) below plan. Cumulatively, since January 2011, average monthly internal staffing (36.4 FTE/mo.) is 3% (1.1 FTE/mo.) below plan.

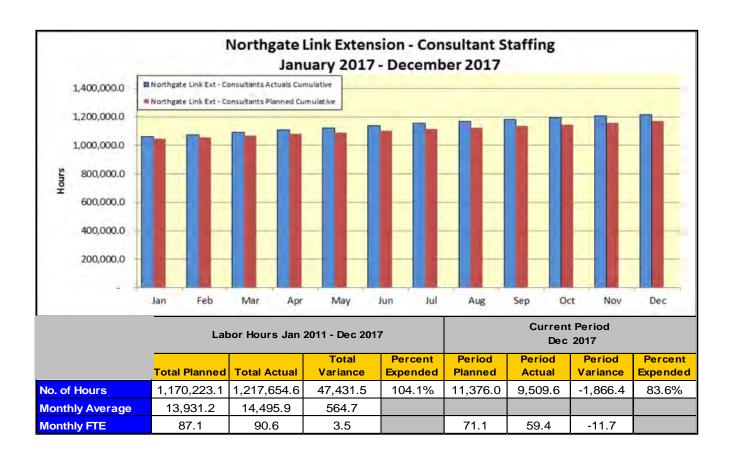


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#### Consultant Resource Commitments to Northgate Link Extension

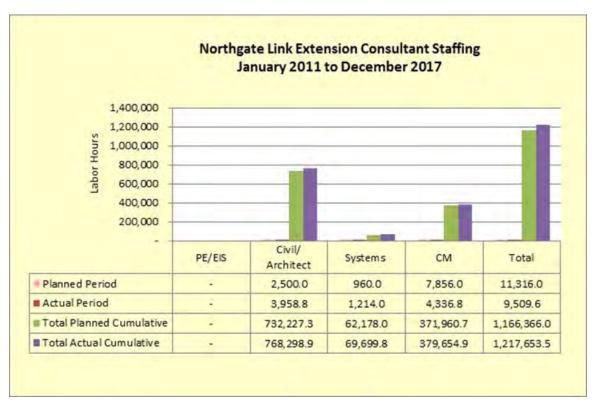
In December, 59.4 consultant FTE were assigned to the Northgate Link Extension; consultant staffing was 24% (18.6 FTE) below staffing in November and was 16% (11.7 FTE) below plan. Cumulatively, since January 2011, average monthly consultant utilization (91 FTE/mo.) is trending 4% (3.5 FTE/mo.) above plan.



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# Consultant Resource Commitments to Northgate Link Extension



#### Consultant utilization by discipline follows:

- Civil/architecture consultant utilization in December (24.7 FTE) was 15.7% (3.4 FTE) above November staffing and was 55% (8.7 FTE) above plan. Cumulatively since January 2011, average civil engineering/architecture consultant staffing of 57.2 FTE/mo. is trending 5% above plan.
- Systems consultant utilization in December (7.6 FTE) was 23% (1.4 FTE) above November and was 26% (1.6 FTE) above plan. Cumulatively, since January 2011, average monthly Systems consultant staffing (5.2 FTE/mo.) is trending 7% (0.3 FTE/mo.) above plan.
- CM consultant staffing in December (27.1 FTE) was 46% (23.4 FTE) below November staffing and was 45% (22 FTE) below plan. Cumulatively, since January 2011, average monthly CM consultant staffing (28 FTE/mo.) is 2% (0.6 FTE/mo.) above plan.

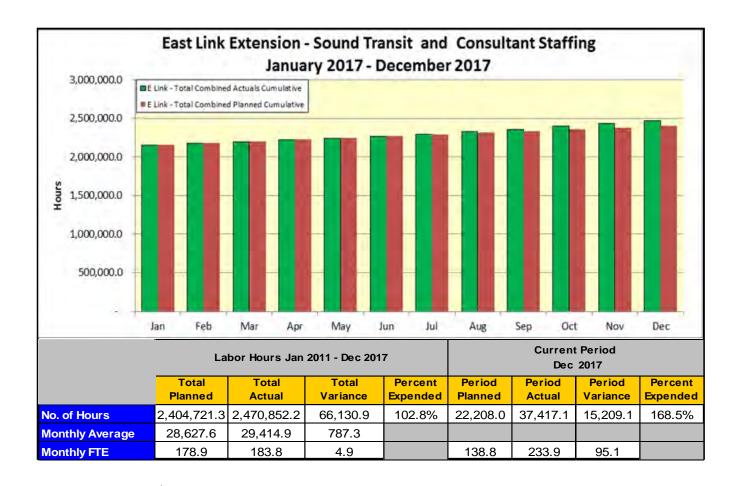
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## **East Link Extension Staffing**

# <u>Total Internal and External Staffing – East ink Extension</u>

Staffing for the East Link Extension in December (233.9 FTE) increased 5% (11.9 FTE) from November and was 68% (95.1 FTE) above plan. Average year-to-date staffing of 172. FTE/mo. is 24% (33.2 FTE) above plan. Cumulatively since January 2011, average monthly staffing of 183.8 FTE/mo. is trending with plan.



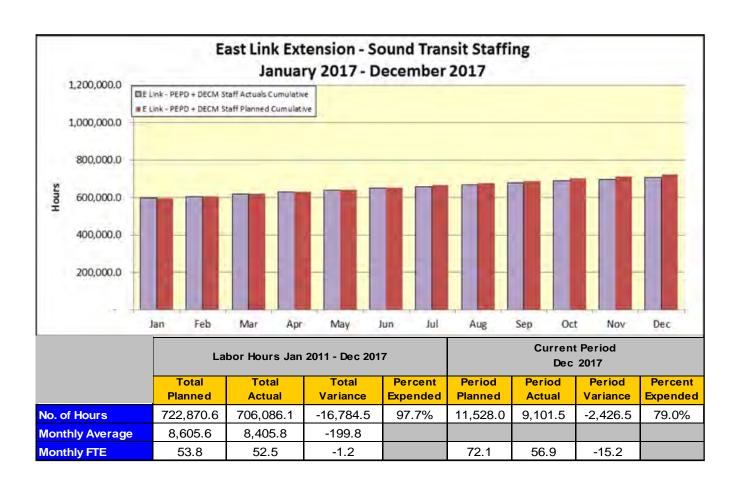
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## **East Link Extension Staffing**

#### Internal Resource Commitments to East Link Extension

During December internal staffing for the East Link Extension (56.9 FTE) was 5% (2.8 FTE) above November staffing and was 21% (15.2 FTE) below plan. Cumulatively, since January 2011, average monthly internal staffing (52.5 FTE/mo.) is trending with plan.



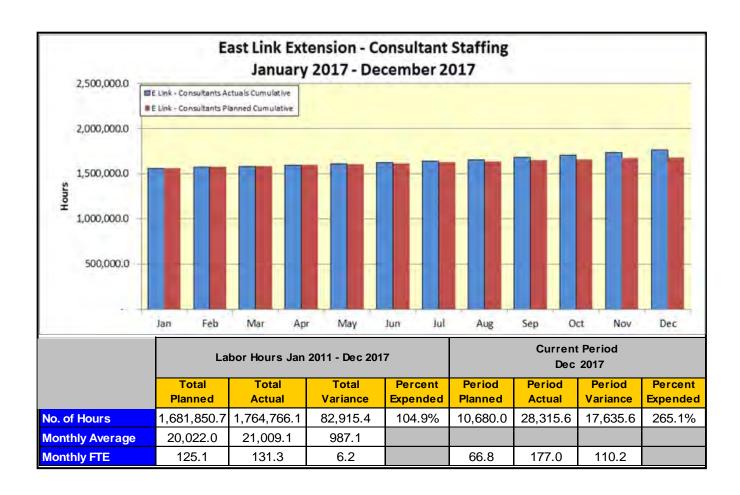
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# **East Link Extension Staffing**

#### Consultant Resource Commitments to East Link Extension

There were 177 consultant FTE assigned to the East Link Extension during December. Consultant staffing was 5% (9.1 FTE) above November and 165% (110.2 FTE) above plan. Cumulatively since January 2011, average monthly consultant staffing (131.3 FTE/mo.) is trending with plan.



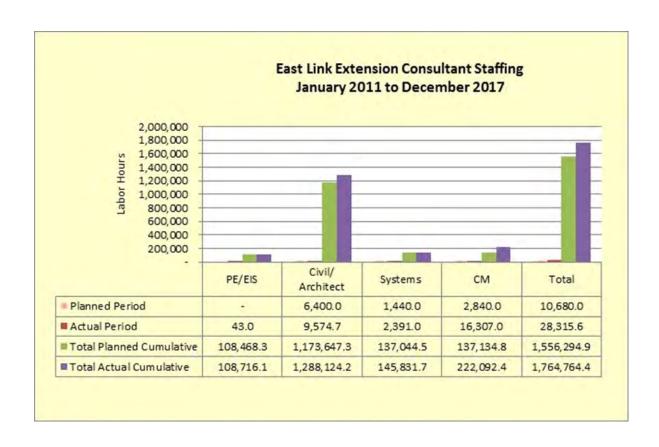
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# **East Link Staffing**

#### Consultant Resource Commitments to East Link, continued

In December construction management consultant staffing (101.9 FTE) on the East Link Extension was 62% of consultant staffing; civil engineering consultant staffing (59.8 FTE) comprised 34% of consultant staffing. There were 14.9 and 0.3 consultant FTE supporting systems design and preliminary engineering, respectively.



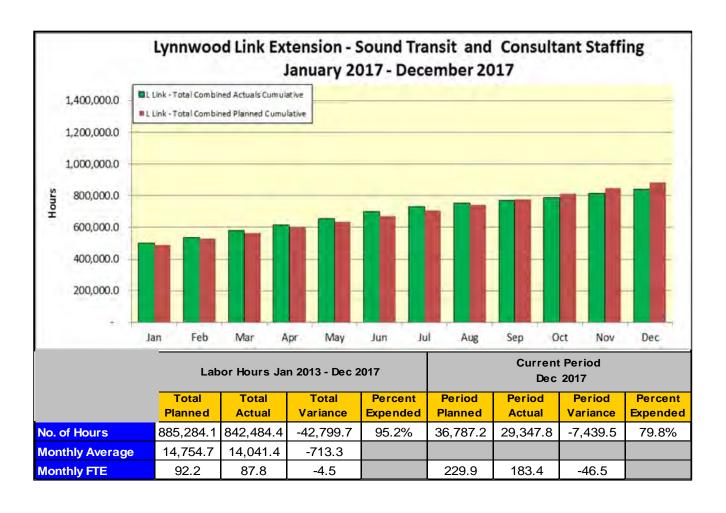
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#### Lynnwood Link Extension Staffing

## Total Internal and External Staffing - S. 200th Link Extension

During December Lynnwood Link Extension staffing was 183.4 FTE (80% of, or 46.5 FTE below plan). There were 144.8 consultant FTE (19% below plan) and 38.6 internal FTE (26% below plan). Average year-to-date staffing of 184.1 FTE/mo is trending 20% (45.8 FTE/mo.) below plan; cumulatively since January 2013 staffing is averaging 87.8 FTE/mo. and is trending with plan.



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#### Lynnwood Link Extension Staffing

#### Internal Staffing—Lynnwood Link

During December internal staffing for the Lynnwood Link Extension (38.6 FTE) was 5% (1.9 FTE) above November staffing and 26% (13.4 FTE) below plan. Cumulatively, since January 2013, average monthly internal staffing (22.4 FTE/mo.) is trending within 10% of plan.



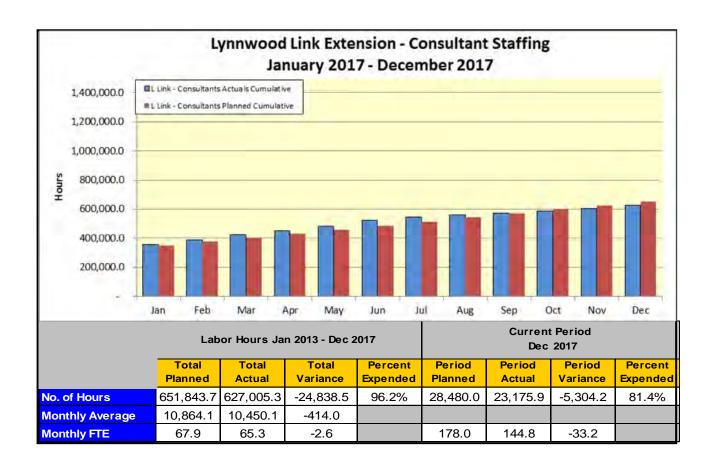
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# **Lynnwood Link Expansion**

#### Consultant Staffing—Lynnwood Link

There were 144.8 consultant FTE assigned to the Lynnwood Link Extension during December. Consultant staffing increased 36% (38.4 FTE) from November and was 19% (33.2 FTE) below plan. Cumulatively since January 2013, average monthly consultant staffing (65.3 FTE/mo.) is trending with plan.



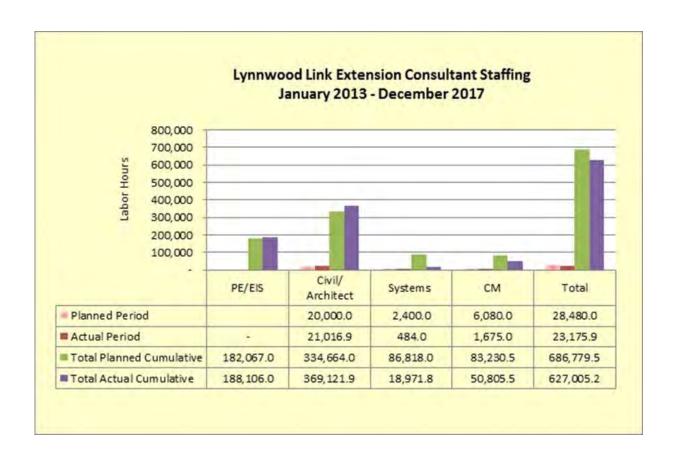
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#### **Lynnwood Link Extension Staffing**

#### Consultant Resource Commitments to Lynnwood Link

Ninety-one percent (131.2 FTE) of the Lynnwood Link consultant staffing were supporting civil final design. Additional consultant staffing (10.5 FTE or 7% of consultant staffing) provided construction management and systems design support (3 FTE or 2% of consultant staffing).

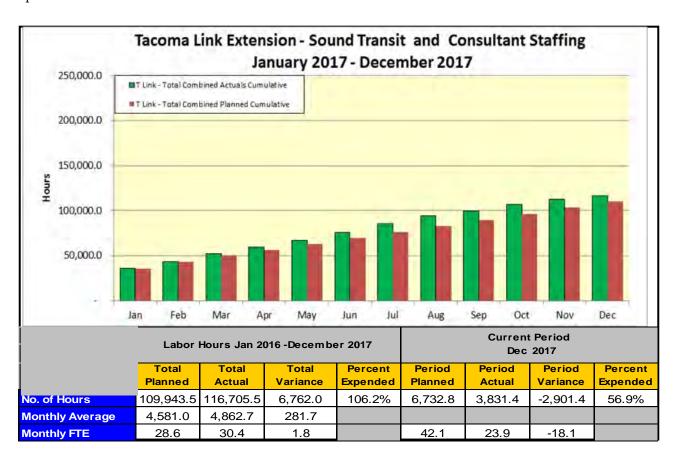


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# Total Internal and Consultant Staffing - Tacoma Link Expansion

During December there were 23.9 FTE (57% of plan) assigned to the Tacoma Link Expansion including 10.6 consultant FTE (56% below plan) and 13.4 internal FTE (26% below plan). Average year-to-date staffing (45.3 FTE/mo.) is 3% (1.5 FTE/mo.) above plan; cumulatively since January 2016 staffing (30.4 FTE/mo.) is trending 6.2% (1.8 FTE/mo.) above plan.

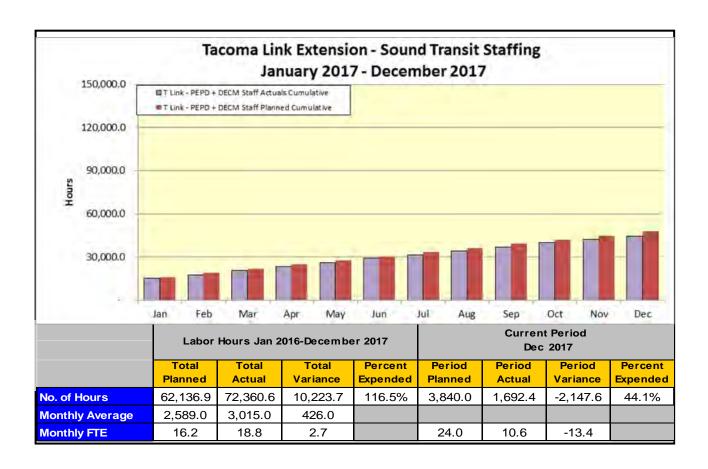


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## Internal – Tacoma Link Expansion

During November internal staffing for the Tacoma Link Extension (13.4 FTE) was 8% (3.1 FTE) below October staffing and was 26% (4.7 FTE) below plan. Cumulatively, since January 2016, average monthly internal staffing (11.5 FTE/mo.) is trending 4% (0.7 FTE/mo.) below plan.

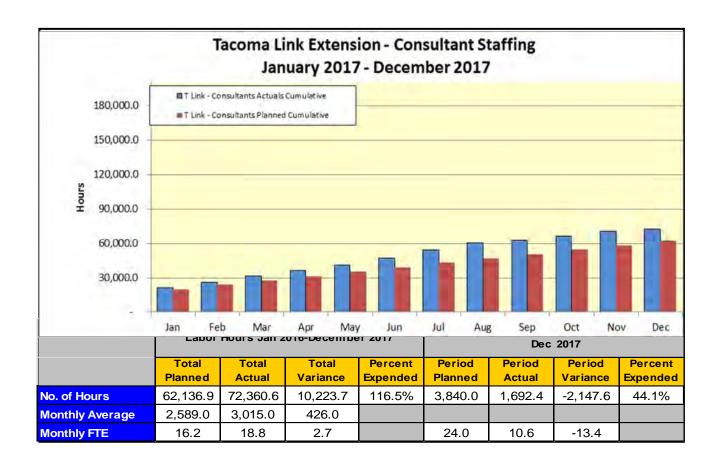


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# Consultant Resource Commitments - Tacoma Link Expansion

There were 10.6 consultant FTE assigned to the Tacoma Link Extension during December. Consultant staffing was 56% (13.4 FTE) below plan and was 58% (14.8 FTE) below November staffing. Cumulatively since January 2016, average monthly consultant staffing (18.8 FTE/mo.) is trending 16.5% (2.7 FTE/mo.) above plan.

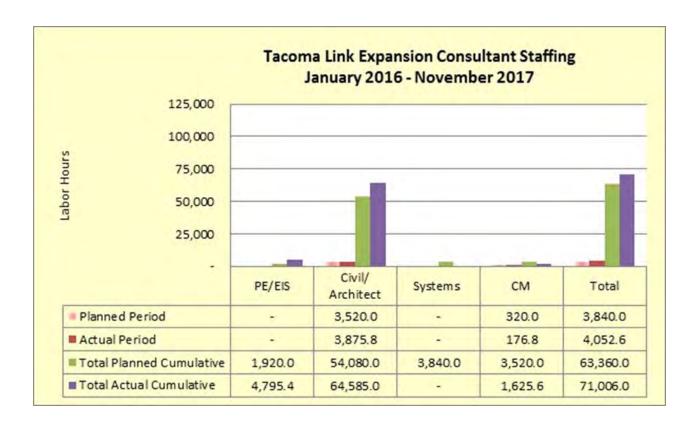


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# Consultant Resource Commitments to Tacoma Link Expansion

Ninety-six percent of consultant staff assigned to the Tacoma Link Extension (24.2 FTE) were supporting final design; there was 1.1 FTE providing construction management support.



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# Link Light Rail Acronyms



ACRONYMS		ACRONYMS	
AA	Alternative Analysis	GC/CM	General Contractor / Construction
APE	Area of Potential Impact	TTT 1 C	Management Heating, Ventilation and Air Condi-
BCE	Baseline Cost Estimate	HVAC	tioning
BCWS	Budgeted Cost of Work	ICD	Integration Control Document
BIM	Building Information Modeling	IFB	Issue for Bids
BNSF	Burlington Northern Santa Fe Railway		
ССВ	Change Control Board	IFC	Industry Foundation Classes
CDF	Controlled Density Fill	IRT	Independent Review Team
CHS	Capitol Hill Station	IWP	Industrial Waste Permit
CM	Construction Management	TA	Tarada Assasiadas
CMU	Concrete Masonry Unit	JA	Jacobs Associates
CO	Change Order	JARPA	Joint Aquatic Resource Permit Application
CPI	Cost Performance Index	KCM	King County Metro
СРМ	Critical Path Method	LNTP	Limited Notice to Proceed
DAHP	Department of Archaeology & History Preservation		
DART	Days Away, Restricted or Modified	LRRP	Light Rail Review Panel
DB	Design -Build	LRT	Light Rail Transit
DBPM	Design-Build Project Management	LRV	Light Rail Vehicle
DECM	Design, Engineering and Construction Management	LTK	LTK Engineering Services
DEIS	Draft Environmental Impact Statement	MACC	Maximum Allowable Construction Cost
DP	Design Package	MDA	Major Discharge Authorization
DPD	Seattle Department of Planning and De-		,
DSC	velopment Differing Site Conditions	MLK	Martin Luther King, Jr. Way
DSDC	Design Support During Construction	MOA	Memorandum of Agreement
DSTT	Downtown Seattle Transit Tunnel	MOS	Minimum Operable Segment
EFC	Estimated Final Cost	MOU	Memorandum of Understanding
EMI	Electro Magnetic Interference		Major Public Project Construction
ERC	East Rail Corridor	MPPCV	Variance
FD	Final Design	MRB	Material Review Board
FHWA	Federal Highway Administration	MTP	Montlake Triangle Project
<b>FSEIS</b>	Final Supplemental Environmental Impact Statement	MUP	Master Use Permit
FFGA	Full Funding Grant Agreement	WIUI	waster OSC I crimit
FTA	Federal Transit Administration		
FTE	Full Time Employee		

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ACRONYMS		ACRONYMS	
NB NCR NCTP NEPA NOAA	Northbound Notification of Change Report North Corridor Transit Partners National Environmental Policy Act National Oceanic and Atmospheric	SIP SPI SR ST START	Street Improvement Permitting Schedule Performance Index State Route Sound Transit Seattle Tunnel and Rail Team
NTP	Notice to Proceed	SWI	Stacy & Witbeck, Inc.
OCS	Overhead Catenary System	TBM	Tunnel Boring Machine
OMF	Operations and Maintenance Facility	TCE	Temporary Construction Easement
OMSF	Operations and Maintenance Satellite Facility	TE TFK	Traction Electrification Traylor Frontier Kemper Joint Venture
PE	Preliminary Engineering	TOD	Transit Oriented Development
PEP	Project Execution Plan	TVM	Ticket Vending Machine
PEPD	Planning, Environment and Project Development	UAC	Unallocated Contingency
PMOC	Project Management Oversight Con-	U-Link	University Link project
	sultant	UDS	University District Station
PSST	Pine Street Stub Tunnel	USFWS	U.S. Fish and Wildlife Service
QA	Quality Assurance	UW	University Of Washington
QC	Quality Control	UST	Underground Storage Tank
QTR	Quarter	UWS	University of Washington Station
RE	Resident Engineer	VE	Value Engineering
RFC	Request for Change	VECP	Value Engineering Cost Proposal
RFD	Request for Deviation	WBS	Work Breakdown Structure
RFI	Request for Information	WDFW	Washington Department of Fish and Wildlife
RFP	Request for Proposal	WSDOT	Washington Department of Transportation
RFQ	Request for Qualifications		
RIR RMP	Recordable Injury Rates 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		

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