

# Progress Report

## Link Light Rail Program

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LRV testing at Angle Lake Station

July | 2016







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## LINK LIGHT RAIL CURRENT SERVICE AND APPROVED EXTENSIONS



## 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. The project is in Final Design and Construction. Revenue Service date is September 2021. The Sound Transit Board adopted the baseline capital budget of \$2.13B originally in 2012 and revised the baseline budget to \$1.89B in October 2015.

**Lynnwood Link Extension:** Lynnwood Link Extension extends light rail 8.5 miles to Snohomish County along I-5 from Northgate Mall in Seattle to the Lynnwood Transit Center, with four new light rail stations. The configuration includes at-grade, elevated, and retained cut/fill alignment. The proposed budget for this project is \$487.9M.

**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.

**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 is being developed through a design-build (DB) delivery strategy and the anticipated service launch is September 2016. The Sound Transit Board adopted the baseline capital budget of \$383M in 2011.

**Federal Way Link Extension:** Sound Transit has identified the route and station location requirements for the extension of light rail to the Federal Way Transit Center; with preliminary engineering to be completed on the segment extending from S. 200<sup>th</sup> St. to Kent/Des Moines in the vicinity of Highline Community College. The proposed budget for this effort is \$48.8M.

**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.

**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 pays, a LRV wash facility and storage for up to 96 light rail vehicles. The ST Board adopted the baseline capital budget of \$449M in July 2016.

**ST2 Light Rail Vehicles (LRV) Fleet Expansion:** This project includes the design, manufacturing, inspection, testing and delivery of 122 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 in September 2015.





# Link Light Rail Program Overview

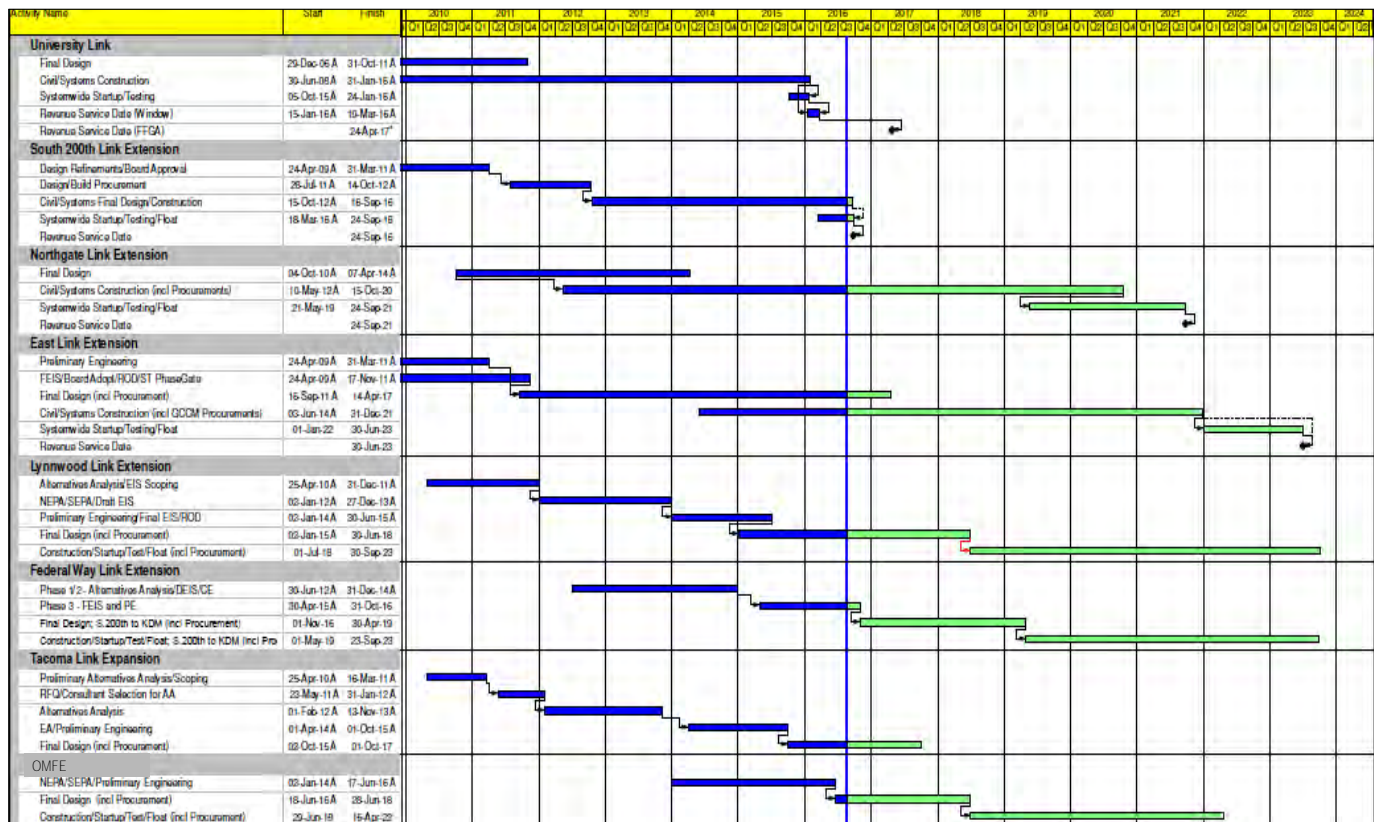
## Program Budget

Project	Adopted Budget	Committed to Date	Incurred to Date	Forecast to Complete	Estimated Final Cost	Adopted Budget vs. EFC
University Link	\$1,756.0	\$1,507.4	\$1,492.5	\$48.2	\$1,555.5	\$200.5
Northgate Link Extension	\$1,899.8	\$881.2	\$710.3	\$1,018.6	\$1,899.8	\$0
Lynnwood Link Extension	\$487.9	\$144.7	\$61.1	\$343.1	\$487.8	\$0
East Link Extension	\$3,677.2	\$998.7	\$488.5	\$2,678.5	\$3,677.1	\$0
South 200th Link Extension	\$383.2	\$326.5	\$307.5	\$16.8	\$343.2	\$40.0
Federal Way Extension	\$48.8	\$37.2	\$30.1	\$11.6	\$48.8	\$0
Tacoma Link Extension	\$33.0	\$10.2	\$8.2	\$22.8	\$33.0	\$0
Link O & M Facility: East	\$449.2	\$35.4	\$33.2	\$413.8	\$449.2	\$0
ST2 LRV Expansion	\$733.0	\$4.9	\$1.6	\$728.1	\$733.0	\$0
Downtown Redmond Link Ext.	\$28.6	\$0.1	\$0.1	\$28.6	\$28.6	\$0
<b>Total Link</b>	<b>\$9,496.6</b>	<b>\$3,946.2</b>	<b>\$3,133.0</b>	<b>\$5,310.0</b>	<b>\$9,256.1</b>	<b>\$240.5</b>

Table in millions.

## Program Schedule

Schedules for active projects are summarized below.



Changes this period: None.

## Scope

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

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

**Stations:** 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, traction electrification, and SCADA communications

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

**Schedule:** Revenue Service began on March 19, 2016.



## Key Project Issues

- Revenue Service commenced on March 19, 2016. Coordination between the Construction teams and the Operations group are ongoing to adjust the System for optimum operations. Contractors continue to perform punch list items but access for follow-on activities poses to be challenging as they now have to work under Operations' rules and not Construction protocols.
- *U830 Systems:* Contractor is now collaborating to incorporate the South 200th Extension points into the newly installed operating systems. Contractor is currently focusing on the SCADA integration with South 200th Extension while continuing to perform punch list on U-Link and systems refinement to achieve optimal operation status. U-Link Systems has encountered some issues related to this infancy period.
- *Certification of Occupancy:* University Link is operating under a temporary certification of occupancy until all permit requirements are fully met. The only outstanding item is the UL certification of low voltage cables in the tunnel — particularly the radiax cables that works as an antenna to the radio communication system.
- Commercial issues with prime contractors are being negotiated as the project proceeds through the close out process.

## 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.)

WBS Phase Elements	Baseline Budget	Current Adopted Budget	Commitment to Date*	Incurred to Date	Est. Final Cost (EFC)	Adopted Budget vs. EFC
ADMINISTRATION	\$ 115.23	\$ 113.55	\$ 80.13	\$ 79.04	\$ 88.23	\$ 25.32
PRELIMINARY ENGINEERING	\$ 24.39	\$ 24.26	\$ 24.26	\$ 24.26	\$ 24.26	\$ -
FINAL DESIGN	\$ 77.94	\$ 90.31	\$ 87.66	\$ 85.75	\$ 88.66	\$ 1.65
CONSTRUCTION SERVICES	\$ 68.53	\$ 94.81	\$ 86.14	\$ 85.95	\$ 88.72	\$ 6.10
3rd PARTY AGREEMENTS	\$ 18.65	\$ 18.65	\$ 12.01	\$ 11.28	\$ 13.55	\$ 5.10
CONSTRUCTION	\$ 1,180.00	\$ 1,158.18	\$ 991.54	\$ 980.56	\$ 1,022.58	\$ 135.60
VEHICLES	\$ 103.91	\$ 103.91	\$ 99.20	\$ 99.19	\$ 101.91	\$ 2.00
ROW	\$ 167.33	\$ 152.33	\$ 126.44	\$ 126.43	\$ 127.62	\$ 24.71
<b>Capital Total</b>	<b>\$ 1,755.97</b>	<b>\$ 1,756.01</b>	<b>\$ 1,507.38</b>	<b>\$ 1,492.48</b>	<b>\$ 1,555.53</b>	<b>\$ 200.47</b>
FINANCE COST	\$ 191.71	\$ 191.71	\$ 191.71	\$ 174.87	\$ 191.71	\$ -
<b>Project Total</b>	<b>\$ 1,947.68</b>	<b>\$ 1,947.72</b>	<b>\$ 1,699.09</b>	<b>\$ 1,667.35</b>	<b>\$ 1,747.24</b>	<b>\$ 200.47</b>

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

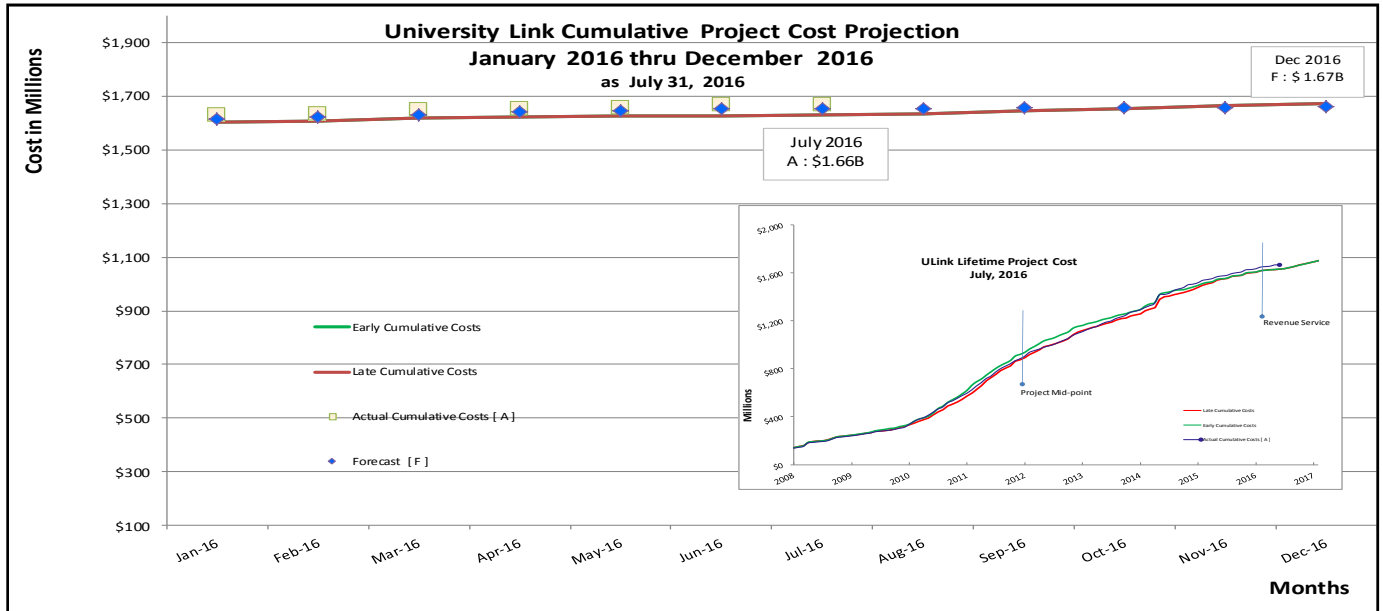
In July, the projected Estimated Final Cost (EFC) including Finance Cost remains at about \$1.75B. In this period, approximately \$380K was incurred and inching the project's Incurred to Date amount closer to \$1.5B (Finance Cost excluded). Direct construction cost was immaterial in July due to close out of commercial issues and punch list activities. The direct construction EFC continues to trend approximately \$1B. This trend continues to be intact as the project is now completed with only miscellaneous follow on scope and commercial issues remain. Capitol Hill Contractor continues on their punch list work, the Systems (U830) Contractor continues to tune and optimizes the systems as well as the integration South 200th Extension systems points. The Total Incurred to Date for the Construction Phase is about \$981M with a current commitments about \$1.16B. Cost for LRV is at about \$99.2M and repairs to the traction motor and gear unit continues. Cost of repairs are excluded from this project and tracked independently.

Construction EFC under the SCC format for this period remains stable and relatively unchanged at about \$1B. Construction SCC expenditures in July is immaterial. This period, the bulk of U-Link construction cost has been attributed Station punch list and Systems testing and change order work. Incurred to date for Construction under the SCC is surpassed \$971M. Total capital cost incurred to date including non-construction cost (SCC 60 thru 90) now at \$1.49B or about 85% of total project budget scoped (excluding Finance Cost).

Project Elements by SCC	Baseline Budget	Current Adopted Budget	Commitment to Date*	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 Guideway & Track Elements	\$ 626.83	\$ 450.46	\$ 456.06	\$ 455.74	\$ 461.24	\$ (10.78)
20 Stations	\$ 366.33	\$ 350.75	\$ 343.98	\$ 341.91	\$ 353.09	\$ (2.34)
30 Support Facilities: Yards, Shops	\$ 7.01	\$ 24.83	\$ 23.28	\$ 22.80	\$ 24.50	\$ 0.33
40 Sitework & Special Conditions	\$ 59.03	\$ 67.39	\$ 56.96	\$ 54.58	\$ 56.82	\$ 10.57
50 Systems	\$ 69.63	\$ 116.42	\$ 100.26	\$ 95.63	\$ 102.89	\$ 13.53
<b>Construction Subtotal (SCC 10-50)</b>	<b>\$ 1,128.82</b>	<b>\$ 1,009.85</b>	<b>\$ 980.54</b>	<b>\$ 970.66</b>	<b>\$ 998.54</b>	<b>\$ 11.31</b>
60 Row, Land, Existing Improvements	\$ 167.33	\$ 125.77	\$ 126.44	\$ 126.43	\$ 126.60	\$ (0.83)
70 Vehicles	\$ 99.76	\$ 100.16	\$ 99.87	\$ 99.32	\$ 100.16	\$ 0.00
80 Professional Services	\$ 306.41	\$ 346.58	\$ 300.53	\$ 296.07	\$ 318.75	\$ 27.84
90 Unallocated Contingency	\$ 53.65	\$ 173.64	\$ -	\$ -	\$ 11.48	\$ 162.16
<b>Capital Cost Total (SCC 10-90)</b>	<b>\$ 1,755.97</b>	<b>\$ 1,756.01</b>	<b>\$ 1,507.38</b>	<b>\$ 1,492.48</b>	<b>\$ 1,555.53</b>	<b>\$ 200.47</b>
100 Finance Cost	\$ 191.71	\$ 191.71	\$ 191.71	\$ 174.87	\$ 191.71	\$ -
<b>Project Total</b>	<b>\$ 1,947.68</b>	<b>\$ 1,947.72</b>	<b>\$ 1,699.09</b>	<b>\$ 1,667.35</b>	<b>\$ 1,747.24</b>	<b>\$ 200.47</b>

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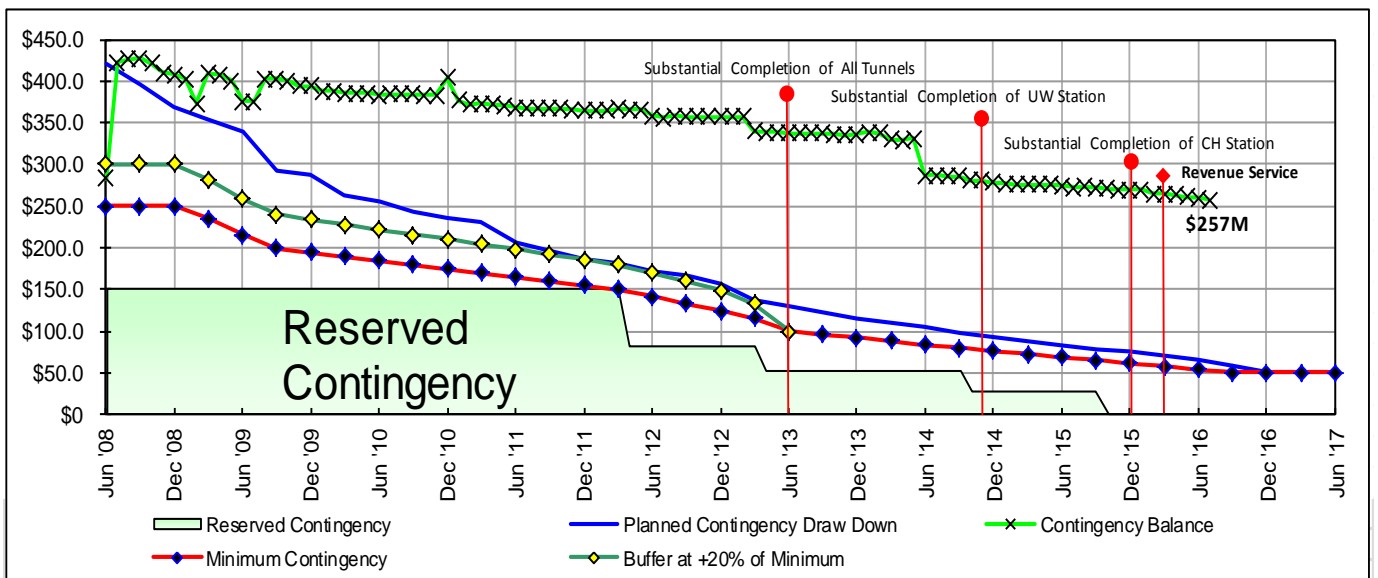


Total project cost incurred to date at July 2016 close including Finance Cost is at \$1.66B. The financing cost incurred to date is about \$175M. University Link projects the cost will be at approximately \$1.67B by December 2016 as close out activities continues. University Link EFC is projected at approximately \$200M under budget excluding financing cost. With the project now in service, the financing cost will be coming to a close with clear indication that the Finance Cost will be under \$191.7M after reconciliation.

## Cost Contingency Management

Project contingencies remains at healthy at approximately \$258M due to the favorable construction bidding climate, ROW acquisition cost trends, diligent project risk management practices, and excellent tunneling conditions. July's overall contingencies notched down by about \$1M due to change orders. While major construction activities are now done, there are still considerable follow-on scope to complete (pertaining to close-out of the project, systems adjustments to optimize the operating systems as well as settlement of commercial issues). Barring any catastrophic event, the likelihood that this contingency stays on trend is high. The forecast indicates that approximately 77% of these contingencies will remain unused; thereby, generating approximately \$200M of budget savings excluding financing cost.

### MINIMUM CONTINGENCY CURVES as of July 31, 2016 \$ in millions



## **Project Schedule Summary**

Revenue Service began on March 19, 2016.

U240 Contractor achieved Substantial Completion in December 2015. A Temporary Certificate of Occupancy was achieved on Revenue Service date of March 19, 2016. The U830 Contract has not achieved Substantial Completion but System Integration Testing is complete. U835 EMI/Vibration Testing is completed. The U810 MOW Building is complete; close-out, punchlist work continue.

## U240 Contract – Capitol Hill Station

### Close-out Progress

The U240 Contractor achieved Substantial Completion on December 31, 2015. Punchlist and close-out work is under way.

### Close-out Activities

#### Current Period

- Contractor continued finalizing punch list items, including work on stopping water leaks throughout the station in an effort to achieve acceptance.
- Continued negotiating and finalizing outstanding commercial issues.

#### Next Period

- Finalize all punch list items and continue to work on stopping water leaks throughout the station.
- 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.
- Contractor continues working on leak remediation. ST remains concerned about schedule to complete leak remediation work. A definitive date for completion of this work has not been determined, but anticipated to happen late 3rd QTR or early 4th QTR 2016.

### Cost Summary

Present Financial Status	Amount
<b>U240 Contractor - Turner Construction Co</b>	
Original Contract Value	\$104,850,276
Change Order Value	\$11,189,707
Current Contract Value	\$116,039,983
Total Actual Cost (Incurred to date)	\$113,535,300
Financial Percent Complete:	98%
Physical Percent Complete:	98%
Authorized Contingency	\$11,742,514
Contingency Drawdown	\$11,189,707
Contingency Index	1.03

## U250 Contract – *University of Washington Station*

### Close-out Progress

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

### Close-out Activities

#### Current Period

- Continued closing out of all remaining commercial issues.

#### Next Period

- Continue closing out of all remaining commercial issues.

### Closely Monitored Issues

- Multiple commercial issues remain unresolved. These issues continue to be reviewed and assessed by Sound Transit.
- Three Notices of Intent to Claim have been filed by the GC/CM. All three claims were denied. A request for mediation was received, and rejected until all claim issues can be mediated at one time.

### Cost Summary

Present Financial Status	Amount
<b>U250 Contractor - Hoffman Construction Co.</b>	
Original Contract Value	141,745,898
Change Order Value	8,659,062
Current Contract Value	150,404,959
Total Actual Cost (Incurred to date)	150,229,022
Financial Percent Complete:	99%
Physical Percent Complete:	99%
Authorized Contingency	9,152,295
Contingency Drawdown	8,659,062
Contingency Index	1.04

## U810 Contract – *Maintenance of Way*

### Close-out Progress

Punchlist work and commissioning of equipment continued.

### Close-out Activities

#### Current Period

- Continued closing out punch list items.
- Continued processing outstanding commercial issues.

#### Next Period

- Continue closing out punch list items in both buildings.
- Continue processing outstanding commercial issues.

### Closely Monitored Issues

- ST and contractor continue to review outstanding commercial issues and continue working towards a possible negotiated settlement.

### Cost Summary

Present Financial Status	Amount
<b><i>U810– Forma Construction (Design/Build)</i></b>	
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



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

**Close-out Progress**

Began Revenue Service on March 19, 2016. Punchlist and close-out work continue.

**Key Activities**

Current Period

*Trackwork*

- Finalizing trackwork inspection.
- Contractor working to complete remaining submittals (final as-built and system assurance) and punch list items.

*Traction Power/Signal/Com-SCADA Systems*

- Ongoing work for the TCS SIDT data for the S440 integration.
- Ongoing work on Systems punch list items.
- Ongoing delivery of spare parts.
- Ongoing work on final 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

- Ongoing work for the TCS SIDT data for the S440 integration.
- Ongoing work on Systems punch list items.
- Ongoing delivery of spare parts.
- Ongoing work on final 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.

**Closely Monitored Issues**

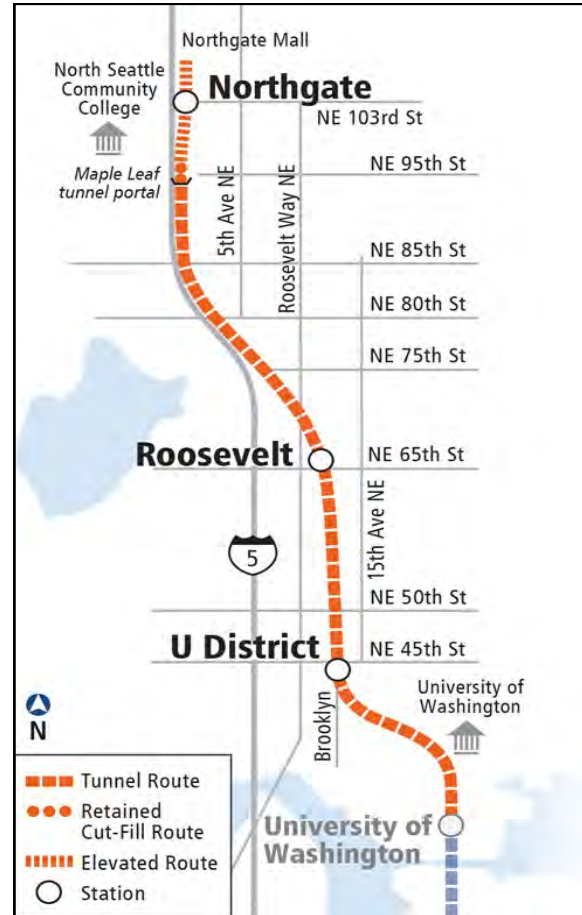
- Closely monitoring the TCS SIDT S440 integration to SCADA to ensure South 200th Link successfully opens for Revenue Service in 2016.

**Cost Summary**

Present Financial Status	Amount
<b>U830 GC/CM Contractor - Stacy &amp; Witbeck</b>	
Original Contract Value	\$119,167,433
Change Order Value	\$3,997,387
Current Contract Value	\$123,164,820
Total Actual Cost (Incurred to date)	\$119,195,468
Financial Percent Complete	96.8%
Physical Percent Complete:	99.0%
Authorized Contingency	\$5,958,373
Contingency Drawdown	\$3,997,387
Contingency Index	1.5

## 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<sup>th</sup> 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* 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* 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:** Final Design and Construction



Map of Northgate Link Extension route and stations.

## Key Project Activities

- Progressing various Final Design contract packages. (See *Final Design section for details.*)
- For *N125 TBM Tunnels*, TBM mining continued to make good progress; 66% tunneling (3,352 rings) from UDS to UWS completed to-date.
- For *N160 – Northgate Station* – Issued Intent to Award Notice to Absher Construction which was determined as responsive and responsible low bidder.
- For *N180 Trackwork*, Sound Transit Board approved \$71.5M trackwork contract with Stacy and Witbeck on July 28.

## Closely Monitored Issues

- JCM crew drilled probe hole and placed grout in location along 12th Ave NE south of sinkhole site on 7/21-22. Additional drilling work in vicinity planned in early August.

## Project Cost Summary

The Northgate Link project cost is summarized below by 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 figures in both tables are shown in millions.

### Cost Summary by Phase

Project Phase	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
ADMINISTRATION	\$147.9	\$147.9	\$39.9	\$39.7	\$147.9	\$0.0
PRELIMINARY ENGINEERING	\$15.1	\$15.1	\$15.1	\$15.1	\$15.1	\$0.0
FINAL DESIGN	\$129.2	\$129.2	\$111.6	\$98.8	\$129.2	\$0.0
CONSTRUCTION SERVICES	\$118.3	\$118.3	\$81.7	\$37.5	\$118.3	\$0.0
3rd PARTY AGREEMENTS	\$11.8	\$11.8	\$9.9	\$5.8	\$11.8	\$0.0
CONSTRUCTION	\$1,328.0	\$1,328.0	\$529.8	\$420.7	\$1,328.0	\$0.0
ROW	\$127.3	\$127.3	\$93.2	\$92.8	\$127.3	\$0.0
PROJECT CONTINGENCY	\$22.2	\$22.2	\$0.0	\$0.0	\$22.2	\$0.0
<b>Total</b>	<b>\$1,899.8</b>	<b>\$1,899.8</b>	<b>\$881.2</b>	<b>\$710.3</b>	<b>\$1,899.8</b>	<b>\$0.0</b>

The Estimated Final Cost (EFC) for the project as of this reporting period is \$1,899.8M, which is equal to the current project budget. This period, approximately \$15.9M was incurred, of which \$13.4M was for the N125 tunneling contract, the N111 Utility Relocation and N113 OH Power Relocation projects at Northgate, and other miscellaneous construction; \$0.9M was incurred for civil and systems final design and design support during construction; and \$1.1 was for construction management. The remaining expenditures were for third party coordination, permits, staff, legal, right-of-way and other direct charges.

### Cost Summary by SCC

SCC Element	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 GUIDEWAY & TRACK	\$595.6	\$598.0	\$366.6	\$286.8	\$598.0	\$0.0
20 STATIONS	\$376.1	\$386.7	\$41.4	\$36.3	\$386.7	\$0.0
30 SUPPORT FACILITIES: YARD, SHOP	\$5.3	\$5.3	\$5.2	\$5.2	\$5.2	\$0.1
40 SITEWORK & SPECIAL CONDITIONS	\$140.8	\$190.5	\$105.6	\$86.7	\$190.6	(\$0.1)
50 SYSTEMS	\$110.9	\$93.7	\$0.9	\$0.9	\$93.7	\$0.0
<b>Construction Subtotal (SCC 10 - 50)</b>	<b>\$1,228.7</b>	<b>\$1,274.2</b>	<b>\$519.7</b>	<b>\$415.9</b>	<b>\$1,274.2</b>	<b>\$0.0</b>
60 ROW, LAND, EXISTING IMPROVEMENTS	\$119.9	\$119.9	\$93.2	\$92.8	\$119.9	\$0.0
80 PROFESSIONAL SERVICES	\$420.7	\$427.1	\$268.3	\$201.7	\$427.0	\$0.1
90 CONTINGENCY	\$130.4	\$78.6	\$0.0	\$0.0	\$78.6	(\$0.1)
<b>Capital Total (SCC 10 - 90)</b>	<b>\$1,899.8</b>	<b>\$1,899.8</b>	<b>\$881.2</b>	<b>\$710.3</b>	<b>\$1,899.8</b>	<b>\$0.0</b>

The Estimated Final Cost (EFC) for some contract packages have been reassessed and revised as a result of updated design development estimates and the award of Contract N125 at an amount lower than the adopted budget. The current adopted budget values have been updated to reflect the 2016 budget revisions and updated contingency amounts.

## Cost Contingency Management

Compared to the baseline amount of \$396.2M, the Total Contingency has decreased by \$58.8M to \$337.4M, which is 28.4% of project work remaining. During this reporting period, a net increase of \$78K in the overall project contingency occurred. Detailed information is provided below.

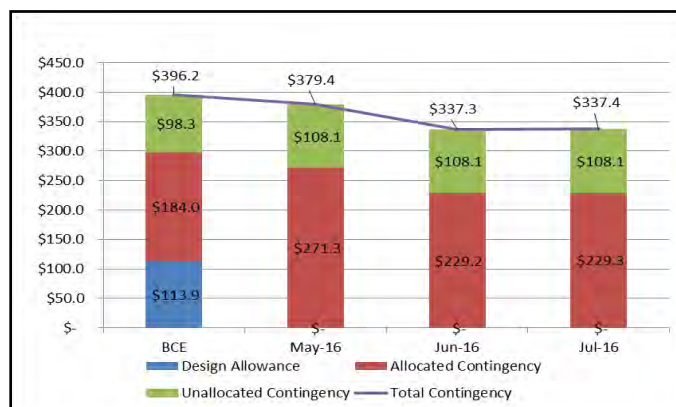
**Design Allowance** – The baseline Design Allowance of \$113.9M has been fully depleted following the receipt of updated construction cost estimates on the N140, N150, and N160 Station Finishes contracts. DA has been utilized as scope development has progressed to 90% on N140, and 100% on N150 and N160. No changes to DA occurred during this period.

## Cost Contingency Management, continued

**Allocated Contingency** – Compared to the baseline amount of \$184.0 M, Allocated Contingency has increased by \$45.3M to \$229.3M. During this reporting period, AC was increased by a total of \$78K following execution of miscellaneous changes on the N125 Tunneling contract which were offset by a deductive change order to reconcile unspent provisional sums on the N111 Utility Relocation contract.

**Unallocated Contingency** – Compared to the baseline amount of \$98.3M, Unallocated Contingency has increased by \$9.8M to \$108.1M. No changes to UAC occurred during this period.

Contingency Status	Baseline		Current	
	Amount	% of Total	Amount	% of Work Remaining
Design Allowance	\$ 113.9	5.3%	\$ -	0.0%
Allocated Contingency	\$ 184.0	8.6%	\$ 229.3	19.3%
Unallocated Contingency	\$ 98.3	4.6%	\$ 108.1	9.1%
<b>Total</b>	<b>\$ 396.2</b>	<b>18.6%</b>	<b>\$ 337.4</b>	<b>28.4%</b>



## Project Schedule

The N105 Contractor Pellco Construction continued the submittal process throughout July and began mobilizing equipment and personnel to Site C at Northgate. Soft Demo and Hazardous Material removals began in the building and SCL disconnected the electrical service to allow for building demolition. The Contractor is planning on completing the work at Site C in late September. Work at the Key Bank site is being planned for yearend (2016) completion.

Work on the N111 contract is complete. ST's CM team is continuing to work with Walsh Constructors toward final acceptance.

The N113 SCL 115kV Relocation contractor Potelco took delivery of the poles and anchor bolt cages in mid-July. The Contractor also continued survey activities, and began installation of construction entrances/access pads and TESC measures. ST has received the Preliminary Baseline Construction Schedule and provided comments for use in the Contract Baseline submission. Substantial Completion remains February 21, 2017.

The N125 Tunneling Contractor is mining under the University of Washington. The tunneling has experienced some slowdowns due to conveyor repairs. Cross passage construction continues. JCM is continuing to install the in-tunnel ground freezing for Cross Passages 34-38. The Contractor's July schedule update was received by ST and shows JCM behind on Milestones 2, 5, and 6 by 14, 10, and 9 days respectively.

The N140 U District Station 100% Design was pushed back one week and will be delivered to ST in mid-August. ST and Hoffman continue to work toward resolution of the cost differences between the Engineers Estimate and the current Hoffman estimate. ST continues to work with the City of Seattle on the Master Use Permit, SIP, and Building Permits.

The N150 Roosevelt Station GC/CM (Hoffman) is bidding several major subcontractor bid packages. ST is reviewing the initial cost estimate. MACC negotiations have been pushed back into late August/early September. ST is now targeting an October board date for contract approval.



## Project Schedule, continued

The N160 Northgate Station construction contract bids were opened on July 1. Absher Construction was the apparent low bidder. ST is proceeding with the bid review process with the project team planning for an August Board approval and NTP scheduled for mid-September 2016.

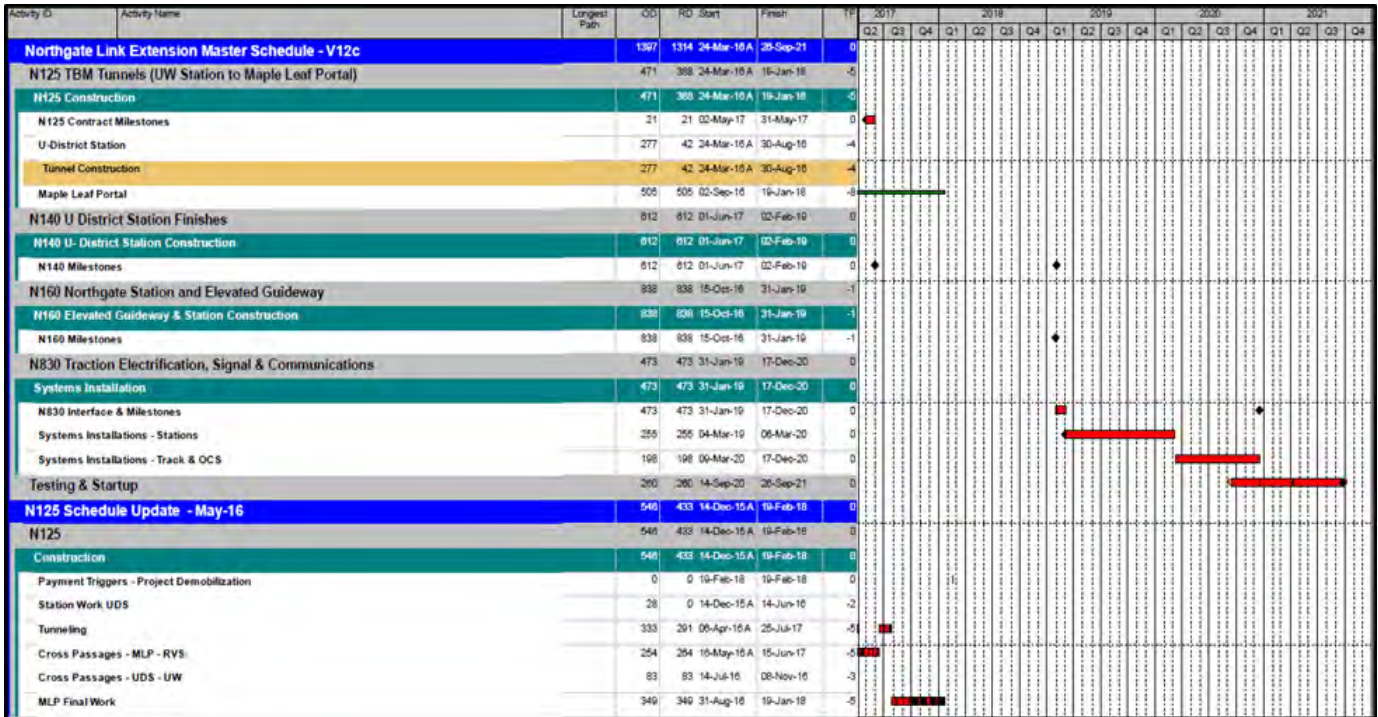
The N180 Trackwork was awarded to Stacy and Witbeck, Inc. The contract was approved by Board at the July meeting. NTP remains early September. ST is still awaiting a decision from FTA on the Buy America waiver request for the Ultra-Straight Rail.

Activity Name	Orig Dur	Start	Finish	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>Northgate Link Extension Master Schedule - V12c</b>														
<b>N105 Advanced Demolition &amp; Site Prep</b>														
N105 Final Design	350	16-Jun-14 A	02-Nov-15 A											
N105 - Contract Procurement	205	13-Aug-15 A	08-Jun-16 A											
N105 IFB	26	28-Sep-15 A	02-Nov-15 A											
N105 Construction Summary	192	07-Jun-16 A	15-Dec-16											
<b>N110 Advanced Utility Relocation, Roosevelt Area</b>														
N110 - Roosevelt Advance Utility Relocation Construction	0	06-Mar-13 A	28-May-13 A											
<b>N111 Advance Utility Relocation, Northgate Area</b>														
N111 Advance Utility Relocation Final Design	447	31-May-12 A	14-Feb-14 A											
N111 - Ad, Bid & Award	201	17-Feb-14 A	16-Jan-15 A											
N111 Advance Utility Relocation Construction	484	19-Jan-15 A	26-Apr-16 A											
<b>N112 Advanced Demolition &amp; Site Prep, U District &amp; Roosevelt</b>														
N112 Roosevelt Station Site Prep	114	01-Aug-12 A	15-Mar-13 A											
N112 U District Station Site Prep	90	08-Apr-13 A	31-Aug-13 A											
<b>N113 115kV Relocation at Northgate</b>														
N113 SCL 115kV Relocation Final Design & Procurement	587	18-Dec-14 A	26-Jul-16 A											
N113 Preconstruction & Mobilization	121	31-May-16 A	28-Sep-16											
N113 SCL 115kV Relocation Construction	266	31-May-16 A	20-Feb-17											
<b>N125 TBM Tunnels (UW Station to Maple Leaf Portal)</b>														
N125 Tunnel & Station Shell Construction	1099	30-Sep-13 A	19-Feb-18											
Tunneling - NB Bore/TBM No. 1 - UDS to UW	100	04-Jan-16 A	26-May-16 A											
Tunneling - SB Bore/TBM No. 1 - UDS to UW	277	24-Mar-16 A	30-Aug-16											
Roosevelt Station - Utilities & Box Excavation	379	07-Oct-13 A	17-Mar-15 A											
Maple Leaf Portal - Utilities/Portal Construction/Launch Prep	379	28-Oct-13 A	15-Aug-14 A											
U-District Station - Utilities & Box Excavation	379	10-Dec-13 A	12-Aug-15 A											
Tunneling - NB Bore/TBM No. 1 - MLP to RVS	156	09-Jul-14 A	25-Mar-15 A											
Tunneling - NB Bore/TBM No. 1 - RVS to UDS	162	03-Apr-15 A	16-Jul-15 A											
Tunneling - SB Bore/TBM No. 2 - MLP to RVS	186	20-Nov-14 A	13-Aug-15 A											
Tunneling - SB Bore/TBM No. 2 - RVS to UDS	102	21-Jul-15 A	10-Jan-16 A											
Cross Passages - RVS-UDS	363	19-Jun-15 A	11-Jan-17											
Cross Passages - MLP-RVS	197	12-Oct-15 A	26-Jun-17											
Cross Passages - UDS-UW	320	24-Nov-15 A	28-Mar-17											
Maple Leaf Portal - Post-Tunneling	507	31-Aug-16	19-Jan-18											
<b>N140 U District Station Finishes</b>														
N140 U District Station Final Design	745	05-Jul-11 A	19-Aug-16											
N140 Prepare Bid Packages, Negotiate MACC	199	08-Feb-16 A	17-Nov-16											
N140 Bid Work Packages, Negotiate MACC, Contract Executi	274	08-Feb-16 A	10-Mar-17											
N140 U District Station Construction	1020	11-Mar-17	25-Dec-19											
<b>N150 Roosevelt Station Finishes</b>														
N150 Roosevelt Station Final Design	657	21-Jul-11 A	15-Apr-16 A											
N150 Bid Work Packages, Negotiate MACC, Contract Executi	181	18-Apr-16 A	05-Jan-17											
N150 Roosevelt Station Construction	1002	14-Dec-16	11-Sep-19											
<b>N160 Northgate Station and Elevated Guideway</b>														
N160 Northgate Station & Guideway Final Design	637	04-Jun-12 A	18-Mar-16 A											
N160 MACC Negotiations & Construction Contract Approval	143	17-Jul-15 A	12-Feb-16 A											
SPG Nordstrom Deck Construction	250	25-Nov-15 A	23-Nov-16											
N160 Advertise, Bid & Award	131	14-Mar-16 A	15-Sep-16											
N160 Northgate Station & Guideway Construction	1231	16-Sep-16	29-Jan-20											
<b>N180 Trackwork</b>														
N180 Trackwork Final Design	1006	16-Feb-12 A	19-Feb-16 A											
N180 Prepare IFB Plan Set	24	19-Jan-16 A	19-Feb-16 A											
N180 Advertise, Bid & Award	139	23-Feb-16 A	07-Sep-16											
N180 Construction	788	08-Sep-16	28-Oct-19											
N180 Northgate Trackwork Construction	427	20-Feb-18	28-Oct-19											
<b>N830 Traction Electrification, Signal &amp; Communications</b>														
N830 Systems Final Design	973	21-Dec-12 A	04-Nov-16											
N830 Systems GC/CM Contract Procurement	199	06-Apr-15 A	19-Jan-16 A											
N830 Systems Precon Services/Submittals/Procurement	0	19-Jan-16 A	16-Nov-18											
N830 Systems Installation	543	19-Oct-18	17-Dec-20											
<b>Testing &amp; Startup</b>														
Northgate Link Testing, Commissioning, Start-up	146	14-Sep-20	14-Apr-21											
<b>Program Float</b>														
Northgate Link Project Float (CD)	165	15-Apr-21	26-Sep-21											



## Critical Path Analysis

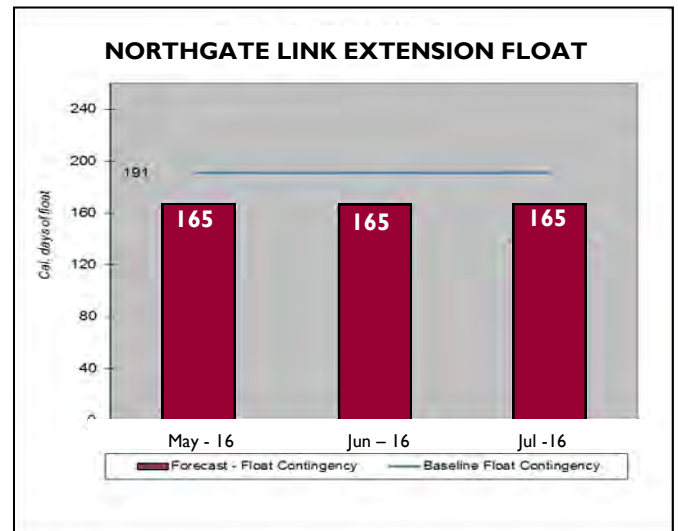
The longest path through the Northgate projects is now driven by the N125 contract and turnover of the UDS box to N140 and the N160 contract which also critical due to access dates on site.



## Critical Path Float

The Northgate Link Project currently retains 165 days of unallocated project float. To date, ST has been able to work with both the GC/CM contractors for the stations and the N125 Contractor to explore means of performing concurrent operations in order to maintain the overall project schedule.

The Revenue Service date for the Northgate Link Extension remains September 2021.



## Construction Safety

Data/ Measure	July 2016	Year to Date	Project to Date
Recordable Injury/Illness Cases	0	8	43
Days Away From Work Cases	0	1	3
Total Days Away From Work	0	5	219
Restricted or Modified Work Cases	0	2	20
Total Days Restricted or Modified Work	0	18	881
First Aid Cases	5	20	45
Reported Near Mishaps	1	4	45
Average Number of Employees on Worksite	300	-	-
<b>Total # of Hours (GC &amp; Subs)</b>	<b>60,000</b>	<b>392,825</b>	<b>1,662,025</b>
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	0.00	4.07	5.17
DART Rate	0.00	1.53	2.77
<i>Recordable National Average</i>	<i>3.60</i>	<i>3.60</i>	<i>3.60</i>
<i>DART National Average</i>	<i>2.00</i>	<i>2.00</i>	<i>2.00</i>
<i>Recordable WA State Average</i>	<i>7.20</i>	<i>7.20</i>	<i>7.20</i>
<i>DART WA State Average</i>	<i>3.30</i>	<i>3.30</i>	<i>3.30</i>

## Right of Way

The U District and Roosevelt stations require 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 will result in owner and tenant, residential and commercial relocations.

**Roosevelt Station** – All parcels have been acquired. One parcel de-certified.

**U District Station** – All parcels have been acquired. One parcel de-certified.

**Northgate Station** - Arbitration scheduled for two parcels.

**Tunnel Easements:** All parcels have been acquired.

Line Section	Total Parcels Certified	Offers Made	Signed Agreements	Admin. Settlements	Possession and Use (P&U)	Closings to date	Baseline Relocations Required	Relocations Completed
U District Station	15	15	0	0	0	15	3	3
Roosevelt Station	19	19	0	0	0	18	26	26
Tunnel Easements	190	188	0	0	0	188	0	0
Northgate Station	11	11	1	0	2	6	13	13
<b>Total</b>	<b>235</b>	<b>233</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>227</b>	<b>42</b>	<b>42</b>

## Quality Assurance Activities

### Activities

- N125- MRB has dispositioned as Acceptable one NCR.

### Issues

- None to report.

### Summary

Description	July 2016	Notes
No. of Audits Planned	0	None
No. of Audits Completed	0	None
Reports in Progress	0	None
No. of Audits Postponed	0	None

## Sound Transit Board Actions

Board Action	Description	Date
M2016-78	<i>Execute a contract with Stacy and Witbeck, Inc. to provide track work elements for the Northgate Link Extension in the amount of \$71,455,950, with a 15% contingency, for a total amount not to exceed \$82,174,343.</i>	Jul 28

## Community Outreach

- Distributed various construction alerts regarding the following:
  - Start of demolition work at the former strip mall site;
  - Cross passage breakout.
- Emailed weekly updates regarding ground freezing for cross passage construction.
- Delivered project information related to geotechnical investigation on 12th Avenue NE to approximately 250 residences in the Roosevelt/U District neighborhoods.
- Hosted informational booth at the Maple Leaf Summer event and approx. 50 residents stopped by.

### *Business Mitigation*

- Met with owner of a restaurant to discuss Yelp ad campaign to mitigate construction impacts affecting the business.
- Met with U District partnership to discuss business relations.

## Environmental

- None to report.

## Final Design Overview

Sound Transit has executed two key contracts with professional services consultants for the Final Design of the Northgate Link Extension. Jacobs Associates (JA) is providing civil engineering and architectural final design services. LTK Engineering Services (LTK) is providing systems engineering final design services.

## Final Design Activities

### Contract Package N140 - U District Station Civil and Finishes:

- Continued 100% design effort including incorporation of ST N150 review comments into the N140 package.
- Continued GC/CM coordination.
- Developed interstation testing plan and report.

### Contract Package N150 - Roosevelt Station Civil and Finishes:

- Continued bid support services and GC/CM coordination.

### Contract Package N160 - Northgate Station, Aerial Guideway and Parking Garage Civil and Finishes:

- Advertised for bids on April 20; bids were received July 1. Bid support including RFI responses and issuance of addenda is complete; further design activities are not anticipated on this contract.

### Contract Package N180 – Trackwork:

- Advertised for bids April 12, bid date June 10. Bid support including RFI responses and issuance of addenda is complete; further design activities are not anticipated on this contract.

### Contract Package N830 – Traction Electrification, Signals, and Communications:

- Continued responses and incorporation of 90% design comments into the 100% design submittal.
- Completed traction power conduit and cable plans and incorporated 100% QC comments.
- Incorporated comments for 100% communication signals and electrical systems.
- Reviewed revisions to 26kV feeder conduit routing at UDS.

## Final Design Schedule

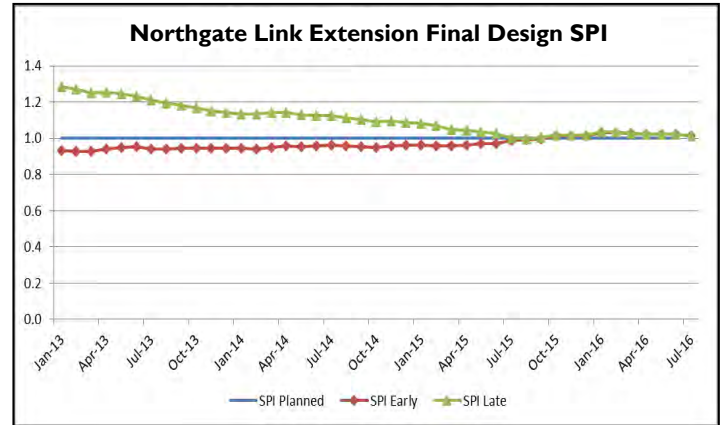
The table below summarizes the current civil Final Design submittal schedule for each contract package.

Work Packages	60%		90%		100% to ST	
	Plan	F/A*	Plan	F/A*	Plan	F/A*
N105 Key Bank Demolition and Remediation	7/31/2014	7/31/2014A	10/3/2014	10/3/2014A	2/23/2015	6/18/2015A
N111 Advanced Utility Relocation – Northgate	12/21/2012	5/23/2013A	3/29/2013	10/14/2013A	7/12/2013	1/31/2014A
N113 115kV Relocation at Northgate	10/29/2013	11/21/2014A	3/27/2014	8/5/2015A	6/19/2014	10/2/2015A
N140 U District Station Finishes	12/24/2011	4/27/2012A	9/18/2012	12/11/2015A	5/10/2013	8/12/2016
N150 Roosevelt Station Finishes	4/13/2012	2/27/2012A	1/28/2013	12/18/2014	10/23/2013	11/20/2015A
N160 Northgate Sta. Civil/Finishes/Guideway	6/27/2012	10/5/2012A	4/17/2013	3/7/2014A	11/26/2013	2/5/2016
N180 Trackwork	8/23/2012	8/23/2012A	5/22/2013	4/8/2013A	8/26/2013	1/14/2016A
N830 Traction Electrification, Signals, Communications	12/12/2012	12/20/2012A	4/10/2014	1/29/2016	12/9/2014	9/6/2016

F/A\* = Forecast/Actual

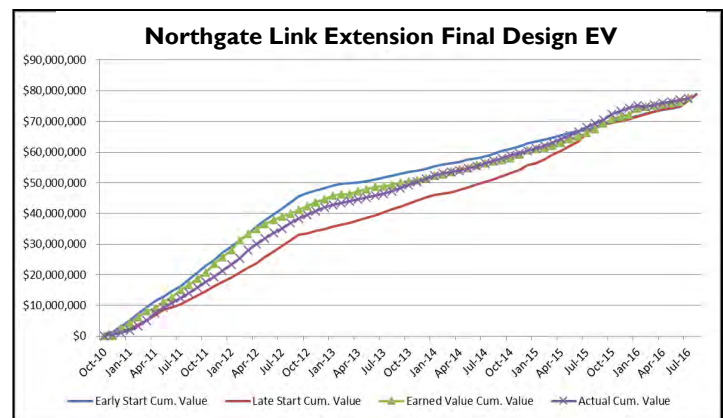
## Final Design Schedule Performance

For Final Design activities only, the Schedule Performance Index (SPI) reported this period is 1.01 based on the early start date, and the late start SPI is also 1.01. The overall deliverable schedule remains on track as adjusted for approved scope changes. The only remaining deliverables are the N140 100% package due in August, and the N830 100% package due in September.



## Final Design Cost Performance

Through this period, the total amount spent for civil final design is \$85.4M, which is approximately 87.1% of the total contract amount including change orders. For final design activities only, the total amount spent is \$77.5M, which is 98.2% of the current final design contract value. One major civil deliverable remains for the N140 100% pricing set. The consultant reported 98.6% complete for final design activities, resulting in an Earned Value of \$77.8M. The current period Cost Performance Index (CPI) is reported at 2.5, and cumulative CPI remains 1.0, which indicates that overall expenditures are in line with planned cost.



## Other Key Final Design Activities

### Geotechnical Investigation

- None to report.

### Surveying and ROW

- Edited Transportation Easement #1.

### Traffic Engineering Report

- Completed final Traffic Engineering Report and delivered to ST on July 29, 2016.

### Permits

- Incorporated Contract N140 90% SIP comments.
- Reviewed and responded to Contract N140 MUP corrections.
- Continued development of ROD matrix for Contract N140 100% package.
- Responded to Contracts N150 and N160 90% SIP comments.

### Noise Mitigation for At Grade and Elevated Guideway

- None to report.

### Ground Borne Noise and Vibration

- None to report.

### Construction Cost Estimating

- Completed GC/CM reconciliation process of the N140 90% estimate and began development of 100% construction cost estimate.

### Quality Assurance

- Conducted 100% Quality Assurance Audit and provided Notice of Audit Completion on July 28.

### Design and Project Integration

- Integration Control Document (ICD) Log: No new ICDs were raised during this period, and the overall total remained at 148: 127 closed and 21 currently remain open. The majority of the open ICDs refer to Contract N140, which has 10 open ICDs.
- Integration and coordination with Systems Consultant (LTK), Art Consultant and Station Artists continued as required.



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## 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.

**N110 Utility Relocation at Roosevelt Station Area** - Relocation of electrical and communication facilities at the Roosevelt Station site. (Complete)

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

**N112 U District and Roosevelt Station Site Preparation** - Demolition of existing structures, grading and paving at the U District and Roosevelt Station sites. (Complete)

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

**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 UW Station and Northgate Station, including tail track.

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

## Construction Schedule Highlights

Package	Bid Advertisement	NTP	Substantial Completion
N105-Advance Demolition & Site Prep	Mar 2016A	May 2016A	Dec 2016
N111-Advanced Utility Relocation	Sept 2014A	Jan 2015A	Mar 2016A
N113-SCL 115kV Relocate	Feb 2016A	June 2016A	Feb 2017
N125-Station Box Exc. & TBM Tunnels	Jan 2013A	Sep 2013A	Jan 2018
N140-U District Station Finishes	Oct 2013A (GC/CM-Precon)	Jun 2017 (construction)	Jan 2020
N150-Roosevelt Station Finishes	Apr 2013A (GC/CM-Precon)	Jan 2017 (construction)	Sep 2019
N160-Northgate Station & Guideway & Parking Garage	Apr 2016A	Sept 2016	Nov 2019
N180-Trackwork to Northgate Station	Apr 2016A	Sept 2016	Jul 2019
N830-Traction Power, Signals & Com	May 2015 (GC/CM-RFQ)A	Jan 2018 (construction)	Dec 2020

A = Actual

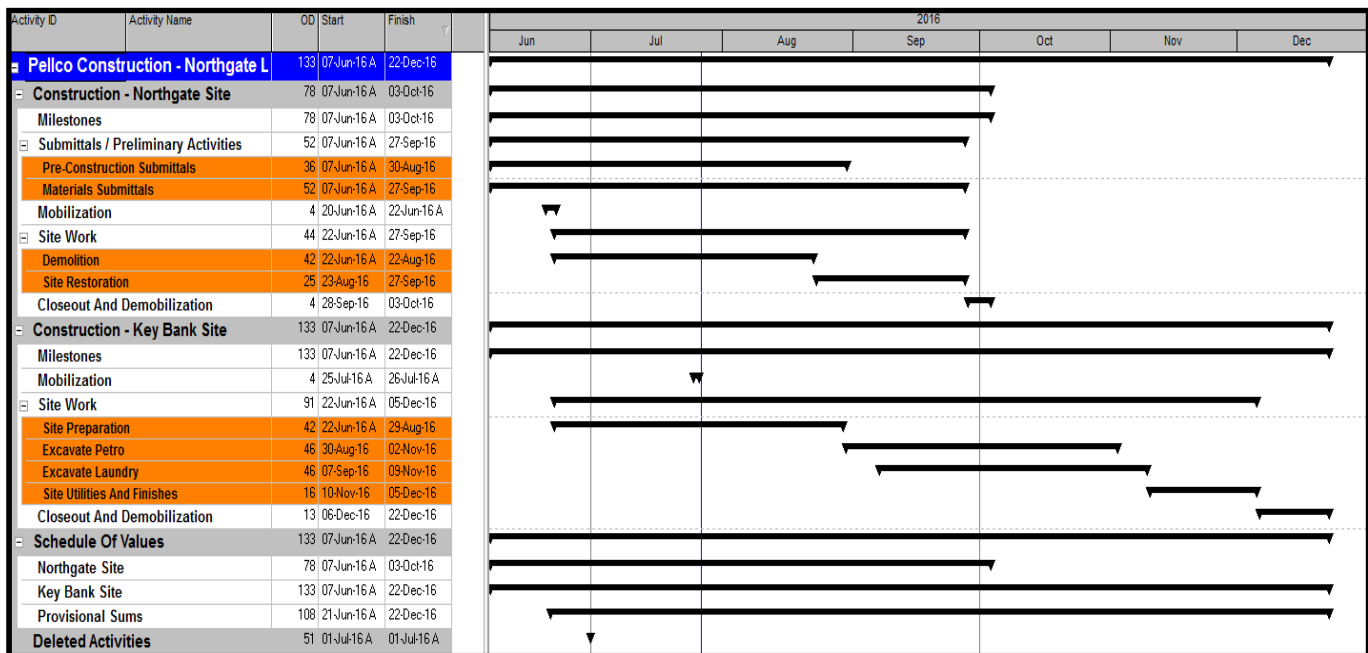
## Contract N105- Advanced Demolition and Site Prep

### Current Progress

The N105 Contractor, Pellco Construction, is continuing to work through the pre-construction submittals. The Schedule of Values and the Preliminary Baseline Schedule submittals have been accepted by ST. On site, Pellco is showing a delay resulting from the length of time it is taking to have SCL de-energize the sites.

### Schedule Summary

The July schedule update submitted by Pellco, shows a delayed start at both sites, with the schedule exhibiting negative 9 days of float in the completion of the Northgate Site C work and negative 7 days of float in completing the Key Bank site. The longest path is asserted by Pellco to be waiting for SCL to de-energize and remove the power conductors at the Key Bank Site. It should be noted that this path is delayed just long enough to overtake the delays in completing the submittals in accordance with the baseline schedule.



## Key Activities

### Current Period

#### *Northgate Site*

- Completed building asbestos, mercury lamps and PCB ballast abatement.
- Completed inspection, removal of light poles and fixtures at parking lot.
- Prepared and removed roof top A/C Units.
- Started soft demolition of recycled materials inside the buildings.
- Started clearing and grubbing of landscape islands adjacent to buildings.

#### *Key Bank Site*

- Installed temporary construction chain link fence.
- Started mobilization of equipment.

### Next Period

#### *Northgate Site*

- Deactivate power to the buildings.
- Begin building demolition.
- Continue recycled materials demolition.

#### *Key Bank Site*

- Begin asbestos and mercury abatement.
- Begin installation of TESC.
- Begin cut and cap of existing utilities.

## Closely Monitored Issues

- None this period.

## Cost Summary

Present Financial Status	Amount
<b><i>NI05 Contractor - Pellco Construction</i></b>	
Original Contract Value	\$2,691,500
Change Order Value	\$ -
Current Contract Value	\$2,691,500
Total Actual Cost (Incurred to date)	\$110,000
Financial Percent Complete:	8%
Physical Percent Complete:	8%
Authorized Contingency	\$269,150
Contingency Drawdown	\$ -
Contingency Index	N/A



Removing rooftop A/C.

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## Contract N111 – Advanced Utility Relocation

### Close-out Schedule

The N111 contract was Substantially Complete on April 26, 2016. The infrastructure has been turned over to Seattle City Light. Walsh Constructors have demobilized from the site. No further schedule updates will be made for this project. ST and Walsh are in the process of completing the remaining change orders and negotiating extended overhead and entitlement. Walsh's final schedule update was rejected because the schedule did not represent a time impact analysis that could be used to determine entitlement.

### Key Activities

#### Current Period

- Contractor working to complete final punch-list items for third-party utilities.

#### Next Period

- Continue contract close-out tasks.
- Make final progress payment.
- Issue Acceptance.

### Closely Monitored Issues

- Contractor has not provided an updated schedule that acceptably depicts project events. This will be required to resolve issues related to the delayed completion of the project.

### Cost Summary

Present Financial Status	Amount
<b><i>N111 Contractor - Walsh Construction</i></b>	
Original Contract Value	\$9,370,000
Change Order Value	\$792,921
Current Contract Value	\$10,162,921
Total Actual Cost (Incurred to date)	\$9,812,850
Financial Percent Complete:	97%
Physical Percent Complete:	99%
Authorized Contingency	\$937,000
Contingency Drawdown	\$792,921
Contingency Index	1.17

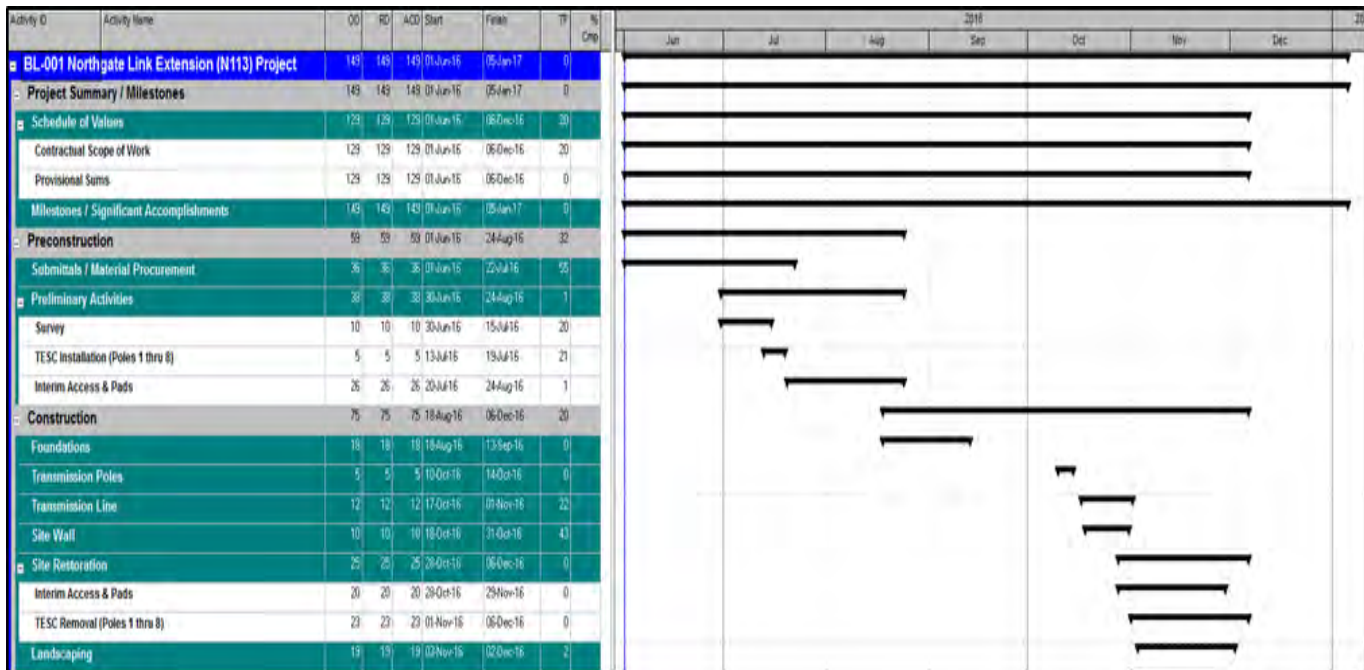
## Contract N113– 115kv Relocation at Northgate Station

### Current Progress

The N113 Contractor has received delivery of the anchor bolt cages and poles. Installation of TESC, construction entrances, and tree trimming/removal are underway. Drilled shaft Subcontractor is mobilizing and will begin rilling the pole shafts in early August. Contractor continues to work through the submittals.

### Schedule Summary

The N113 Contractor has submitted the cost-loaded Contract Baseline Schedule and ST is reviewing the submittal. The longest path through the schedule, as anticipated, runs through the drilled shaft construction and pole installation. The path then proceeds through the transmission line stringing, removal of the existing line, and site restorations.



# Link Light Rail Northgate Link Extension - Construction



## Key Activities

### Current Period

- Completed installation of optical survey monitoring points along the WSDOT sound wall at Pole Sites 6, 7, and 8.
- Completed installation of Dura Mat access road at Pole Sites 1 and 2.
- Completed construction of stabilized entrance pad at Pole Site 4.
- Completed TESC installation at Pole Site 1.

### Next Period

- Conduct Readiness Review Meeting for the Construction Work Plan for drilling of Poles 2 – 7.
- Provide site access and implement TESC measures at Pole Site 5.
- Mobilize drill rig at Pole Site 4.

## Closely Monitored Issues

- None this period.

## Cost Summary

Present Financial Status	Amount
<b><i>NI13 Contractor - Potelco, Inc</i></b>	
Original Contract Value	\$2,811,926
Change Order Value	\$ -
Current Contract Value	\$2,811,926
Total Actual Cost (Incurred to date)	\$796,355
Financial Percent Complete:	28%
Physical Percent Complete:	20%
Authorized Contingency	\$281,194
Contingency Drawdown	\$ -
Contingency Index	N/A



Delivering gravel at Pole site 4.

## Contract N125 – TBM Tunnels

### Current Progress

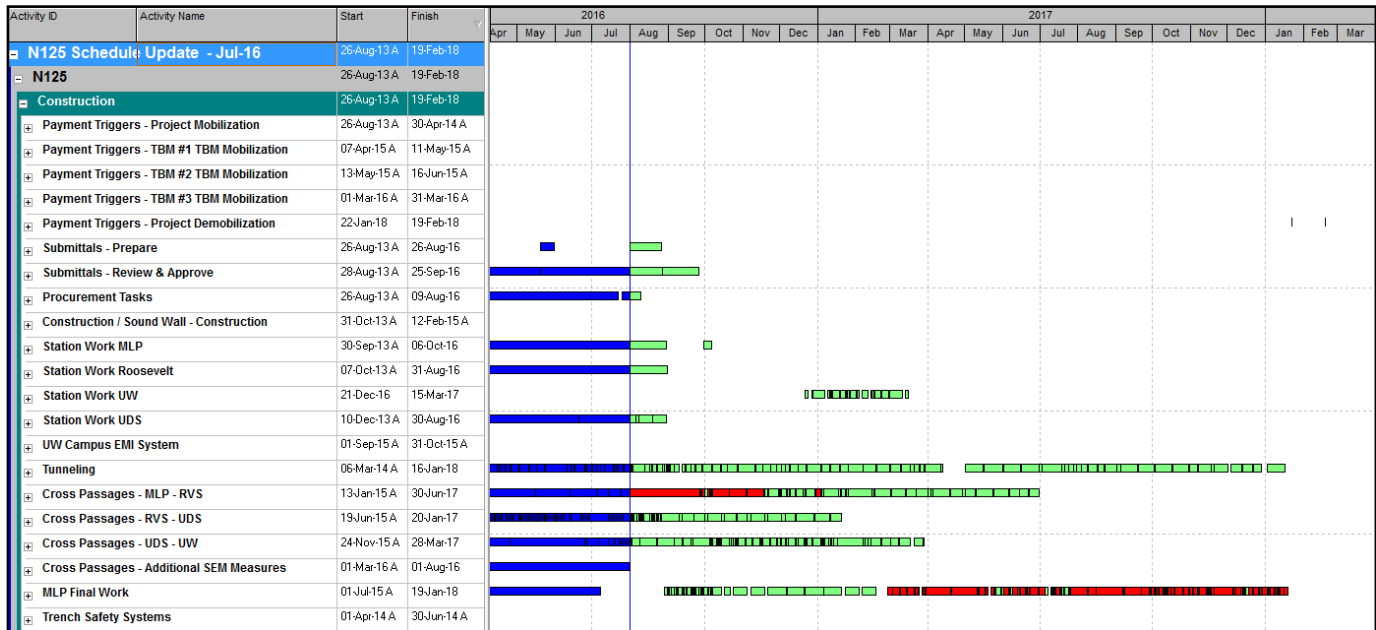
JCM is continuing the final tunneling segment to UWS, post-tunneling invert and troughs, and construction of the cross passages.

*Tunneling Operations* – As of July 29th, TBM No. 1 had mined 3,150 ft., or 66% of the final southbound drive between UDS and UWS. JCM is still forecasting hole-through at UWS in late August. Given the opening of fall events at Husky Stadium, JCM will elect to leave the TBM at UWS until November 2016.

*Cross Passage Construction*—Work in progress at the end of July included ground freezing at CP 21; in-tunnel freezing at CP 25, 26, 31, 32, 34, & 35; waterproofing at CP 27; crown excavation at CP 29; invert rebar at CP 33; and finishing work at CP 39 thru 43.

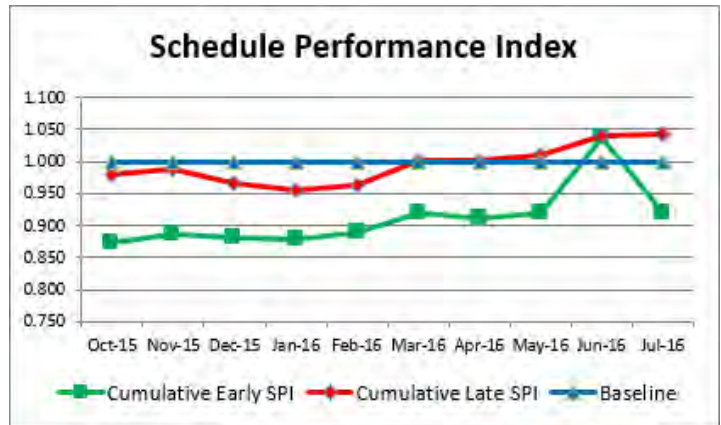
### Schedule Summary

The longest path through the schedule is driven by the in-tunnel ground freezing for cross passages 35 and 36 (-12wd of float), driving installation of the freeze piping for cross passage 37 (-6wd of float). Cross Passage 34 is also on the longest path with negative 6wd of float. The southbound tunneling has negative one day of float driving Milestone No. 2 – Turnover of RVS.



## Schedule Performance Index

The July schedule update reports a Performance Percent Complete of 80% with a Cost Percent Complete of 80.4%. The early SPI for this period remains 0.9, essentially unchanged from the 0.9 obtained in June. The late SPI is 1.0 indicating the work remains behind schedule.



## Key Activities

### Current Period

- Continued SB TBM mining from UDS to UWS. Total to-date progress is 3, 352 rings.
- Completed/continued various cross passage activities including removal of tunnel propping, cleaning out, patching spiles and drain holes and endcap; waterproofing; installation and testing of in-tunnel freeze systems; concrete pour of tunnel walkways; installation of electrical conduits and lighting assemblies, etc.

### Next Period

- Continue various cross passage activities throughout the tunnels.
- Complete SB TBM mining to UWS.

## Closely Monitored Issues

- The quality of the tunnel rings has deteriorated recently due to lack of bituminous packing, with increased spalling and cracking of the segments. JCM has obtained new stock of bituminous packing to resolve the issue.

## Cost Summary

Present Financial Status	Amount
<b>NI25 Contractor - JCM Northlink</b>	
Original Contract Value	\$440,321,000
Change Order Value	\$ 44,748,005
Current Contract Value	\$484,798,677
Total Actual Cost (Incurred to date)	\$388,910,328
Financial Percent Complete:	80%
Physical Percent Complete:	80%
Authorized Contingency	\$66,048,150
Contingency Drawdown	\$44,477,677
Contingency Index	1.19



Welding freeze pipe collar in SB tunnel at CP34.



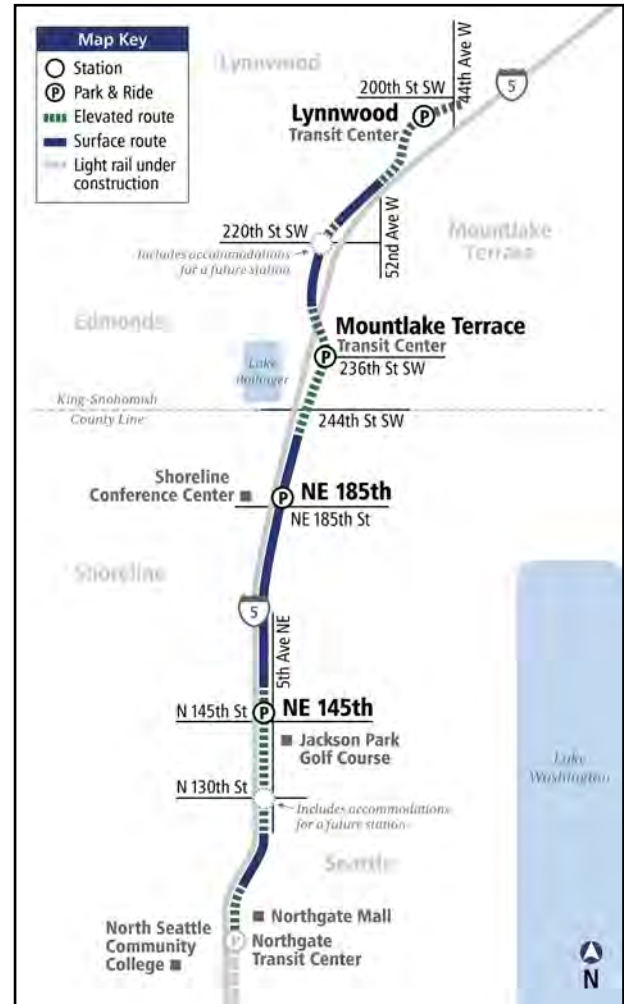
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# Link Light Rail Lynnwood Link Extension



## 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:** NE 145th (Shoreline), NE185th (Shoreline), Mountlake Terrace Transit Center, Lynnwood Transit Center
- Systems:** Signals, traction power, and communications (SCADA).
- Budget:** \$487.9 Million Phase Gate 4 budget; excludes Construction (Year of Expenditure Dollars)
- Phase:** Final Design
- Const. Starts:** 2018
- Service:** Late 2023



Map of Lynnwood Link Extension Alignment.

## Key Project Activities

### Final Design

- Executed Civil Final Design contract with HNTB Jacobs in April 2016.
- Executed Systems Final Design contract with LTK Engineering in July 2016.

### Pre-Construction Services

- Executed Civil Construction Management contract with PGH Wong in May 2016.
- Executed GC/CM contract with Stacy and Witbeck-Kiewit-Hoffman for L200 (south segment) pre-construction services in May 2016.
- Procuring GC/CM contractor for L300 (north segment) pre-construction services with anticipated Q3 2016 start.
- Anticipate starting Systems pre-construction services in 2017.

### Third Parties

- Received Project Rating and Entry to Engineering Approval from FTA in February 2016.
- Executed a design review agreement with WSDOT.
- Advancing formal agreements with City of Seattle, City of Shoreline, City of Mountlake Terrace, City of Lynnwood, and utility providers.

## 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.

### Cost Summary by Phase

Project Phase	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
Administration	\$88.3	\$10.1	\$10.0	\$88.3	\$0.0
Preliminary Engineering	\$42.0	\$39.9	\$39.0	\$42.0	(\$0.0)
Final Design	\$111.5	\$70.4	\$4.6	\$111.5	\$0.0
Construction Services	\$104.9	\$12.7	\$0.2	\$104.9	\$0.0
3rd Party Agreements	\$17.4	\$2.0	\$0.7	\$17.4	\$0.0
Construction	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Light Rail Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$123.8	\$9.6	\$6.6	\$123.8	\$0.0
<b>Total</b>	<b>\$487.9</b>	<b>\$144.7</b>	<b>\$61.1</b>	<b>\$487.9</b>	<b>\$0.0</b>

### Cost Summary by SCC

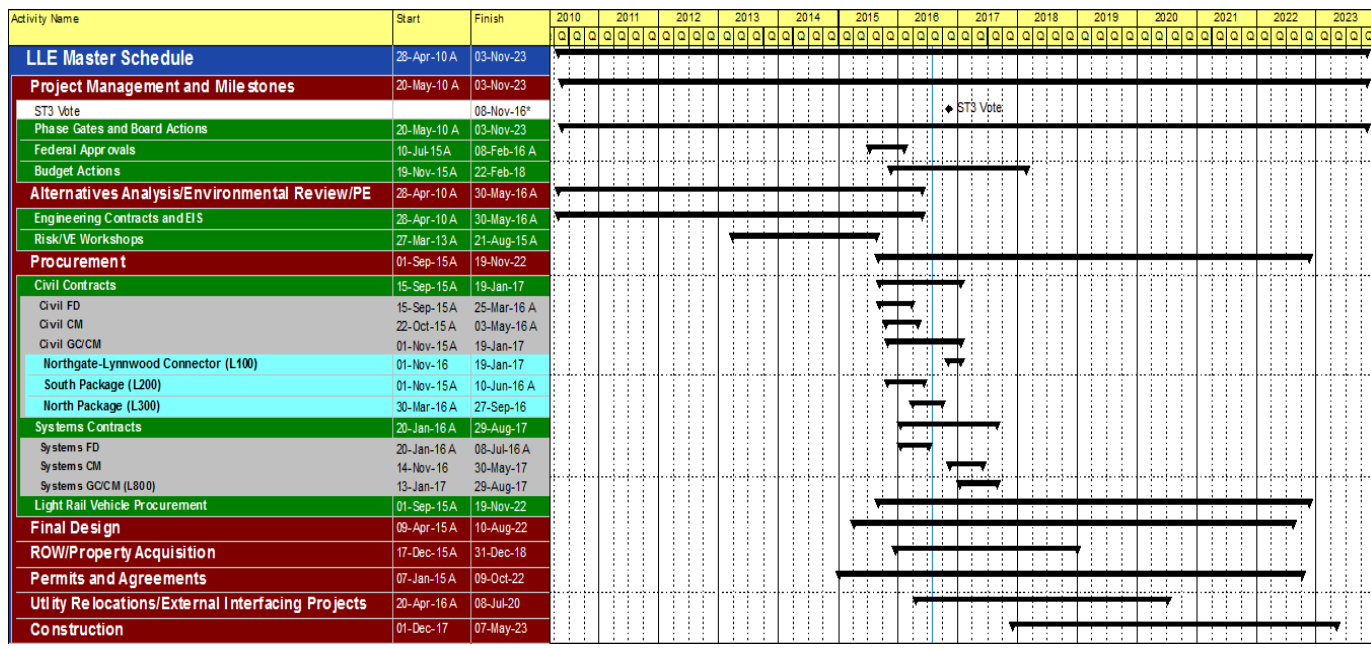
SCC Element	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 Guideway & Track	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
20 Stations	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
30 Support Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
50 Systems	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>Construction Subtotal (10 - 50)</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>
60 Row, Land	\$123.8	\$9.6	\$6.6	\$123.8	(\$0.0)
80 Professional Services	\$364.1	\$135.1	\$54.5	\$364.1	\$0.0
90 Unallocated Contingency	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>Total (10 - 90)</b>	<b>\$487.9</b>	<b>\$144.7</b>	<b>\$61.1</b>	<b>\$487.9</b>	<b>\$0.0</b>

## 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 next Lynnwood Link Quarterly Risk Review Meeting is scheduled for August 2016.

## Project Schedule

The project schedule is shown below. The schedule is at high risk; delays to permitting, right-of-way acquisition, or final design completion could push the anticipated revenue service date into 2024.



## Sound Transit Board Actions

Board Action	Description	Date
	None to report.	

## Community Outreach

- Visited various businesses adjacent to Lynnwood Transit Center and shared project and contact information.
- Provided a project briefing to about 25 members of the Meridian Park Neighborhood Association and signed up 17 attendees to the project mailing list. Answered questions regarding project including, noise, lighting, parking, pedestrian access and project budget.
- Had a first meeting of a new advisory group– Montlake Terrace Station Advisory Group.
- Attended Mountlake Terrace Tour de Terrace event and provided support for the ST booth– 30 people attended.

## Quality Assurance Activities

### Activities/Issues

- None to report.

### Summary

Description	July 2016	Notes
No. of Audits Planned	0	None
No. of Audits Completed	0	None
Reports in Progress	0	None
No. of Audits Postponed	0	None

## Environmental

- None to report.

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## Final Design Overview

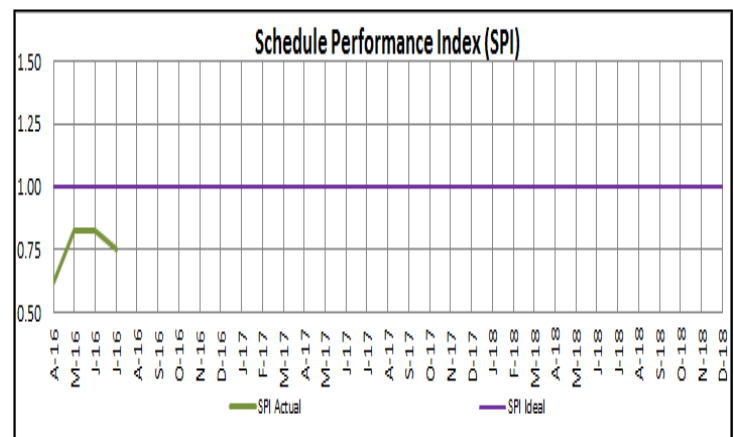
Sound Transit executed a professional services contract with HNTB Jacobs in April 2016 to perform Civil Final Design Services.

## Final Design Activities

- Reviewing preliminary engineering design, and preparing design methodologies.
- Progressing L100, L200 & L300 60% Design.

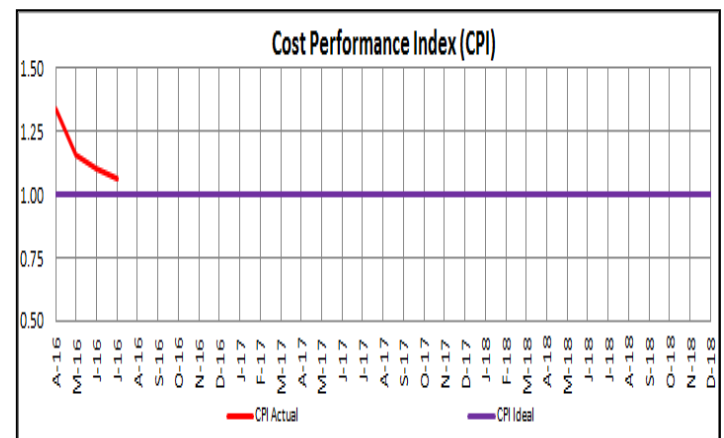
## Final Design Schedule Performance

The cumulative Schedule Performance Index (SPI) trends at 0.75 through July 2016, which means that cumulative work accomplished is less than work planned. Currently Civil Final Design is behind schedule due to delayed decision making with local jurisdictions at station locations.



## Final Design Cost Performance

\$3.9M of the total contract amount, 5.7%, has been spent through July 2016. The Civil Final Design percent complete is 6%, with an earned value of \$4.2M. The cumulative Cost Performance Index (CPI) through July is 1.07 indicating that expenditures are less than the earned value.



Final Design Performance	Previous Period	Current Period	Cumulative To-date
Amount Invoiced	\$2,515,991	\$1,476,339	\$3,992,330
% Spent	3.5%	2.1%	5.6%
Earned Value	\$2,769,332	\$1,484,306	\$4,253,638
% Complete	3.9%	2.1%	6.0%
<b>SPI</b>	<b>0.84</b>	<b>0.63</b>	<b>0.75</b>
<b>CPI</b>	<b>1.10</b>	<b>1.01</b>	<b>1.07</b>

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The project, when completed, will enable 24/7 HOV access on I-90 between Seattle, Mercer Island and Bellevue.

**Scope:** The I-90 Two-Way Transit and HOV Operations (Stage 3) project will provide approximately four miles of the HOV lanes in each direction of the outer roadway between 80<sup>th</sup> 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, the installation of screening on the shared-use pathway on the I-90 floating bridge. Following completion of this project, the center roadway will be closed to allow for the construction of East Link Extension.

**Budget:** \$225.6 Million  
**Phase:** Construction  
**Construction Start:** January 2015  
**Construction Completes:** June 2017

**Major Contracts**

	Scope	Agreement/Contract Amount
WSDOT	Final Design	\$ 20,942,000
WSDOT	CM Services	\$ 16,358,000
IMCO	Construction	\$ 122,021,000

## Key Project Activities

- *Work outside the tunnels* – Continue dowel bar retrofit work, Island Crest Way vault base course placement, pedestrian railing, bridge anchor repair, tie rebar for barrier water quality vault.
- *Mercer Island Tunnel (MIT)* – Build conduit rack, conduit installation, breakers, change out of exhaust fan adjustable-speed drive; install racks, boxes, layout for CCTV/VMS/cabinets/signs/Infrared systems; eastbound exhaust hand railing and angle drain valve upgrades, westbound supply plenum upgrades, MIT dual zone proportioner testing.
- *Mount Baker Ridge Tunnel (MBRT)* – Conduit installation, install grounding electrode conductors, install egress sliding door, ControlNet cabling & terminations, X-ray for anchors, install feeder racks/feeder wires in East tunnels, exhaust duct port adjustments, install conduit for carbon monoxide system, generator installation, set generator mufflers.
- *SCADA* – Existing panel retrofit design, control strategy sessions/design, CC panel production, MBRT EF panel production.
- *Simplex* – True Site installation at Dayton TMC, testing new software.

## Closely Monitored Issues

- *Schedule Update:* IMCO is requesting for Owner Controlled Float.
- Progress of issue resolution by joint technical task force (Implemented after the last executive meeting).
- Material lead times for fan wiring and controls.
- SCADA/SIMPLEX implementation progress.
- Pricing on ICW vault and Bi-directional antenna change orders.
- Increased involvement of the Disputes Review Board.
- Additional technical effort and upcoming staffing plan for consultants.

## Project Cost Summary

Total Project Costs expended this period is \$5.15M. The following tables summarize the cost information for the I-90 Two-way Transit and HOV Operations (Stage 3) project. Tables in millions.

Project Elements by Phase	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
Administration	\$3.6	\$3.6	\$1.5	\$1.5	\$3.6	\$0.0
Preliminary Engineering	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5	\$0.0
Final Design	\$22.1	\$22.1	\$18.6	\$17.9	\$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	\$166.3	\$98.8	\$198.3	\$0.0
<b>Total</b>	<b>\$225.6</b>	<b>\$225.6</b>	<b>\$188.0</b>	<b>\$119.8</b>	<b>\$225.6</b>	<b>\$0.0</b>

## Cost Summary by SCC

Project Elements by SCC	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
40 Sitework & Special Conditions	\$180.6	\$180.6	\$166.3	\$98.8	\$180.6	\$0.0
80 Professional Services	\$26.3	\$26.3	\$21.6	\$21.0	\$26.3	\$0.0
90 Unallocated Contingency	\$18.7	\$18.7	\$0.0	\$0.0	\$18.7	\$0.0
<b>Project Total (SCC 10-90)</b>	<b>\$225.6</b>	<b>\$225.6</b>	<b>\$188.0</b>	<b>\$119.8</b>	<b>\$225.6</b>	<b>\$0.0</b>

## Cost Contingency Management

All unallocated contingencies are budgeted and controlled by Sound Transit. Allocated Contingencies include \$7.7M in WSDOT-controlled construction contingencies that are part of the ST-WSDOT Task Order. WSDOT reports the monthly status of any change orders that will be drawn upon the WSDOT-controlled contingency, as well as any pending changes.

In the table, the Current Status Remaining allocated contingency amount is based on adding the combined WSDOT-controlled construction contingency & the total ST-controlled remaining allocated contingencies; the unallocated total is solely the remaining ST unallocated contingency amount. These amounts are then compared to the current remaining authorized budget to develop the Percent of Work Remaining figures. (*Table below*).

Contingency Status	Baseline		Current	
	Amount	% of Total	Amount	% of Work Remaining
Design Allowance	\$0.0	0.0%	\$0.0	0.0%
Allocated Contingency	\$17.0	7.5%	\$15.7	14.8%
Unallocated Contingency	\$18.7	8.3%	\$18.5	17.4%
<b>Total</b>	<b>\$35.7</b>	<b>15.8%</b>	<b>\$34.2</b>	<b>32.2%</b>

*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 WSDOT-controlled contingency & ST-controlled Contingency.*

## Project Schedule

WSDOT's Prime Contractor submitted a revised baseline schedule to more accurately reflect the progress methodology used by the Contractor; the revised baseline was accepted. An update to this schedule was submitted for July period and is under review by WSDOT. Current Project Milestones are indicated below, and will be revised in future reports as accepted:

Contract	Start of Final Tunnel Commissioning Period		Final Tunnel Commissioning Complete		Substantial Completion		Commence Final Pavement Marking		Physical Completion & Center Roadway Turnover	
	Baseline	Forecast / Actual	Baseline	Forecast / Actual	Baseline	Forecast / Actual	Baseline	Forecast / Actual	Baseline	Forecast / Actual
I-90 Two-Way Transit & HOV Operations Stage 3	12/6/2016	11/17/2016	2/16/2017	2/16/2017	2/20/2017	2/20/2017	5/20/2017	5/20/2017	5/31/2017	5/31/2017

Changes from previous update are indicated in **RED**

Sound Transit is evaluating the potential impact to E130 schedule, and coordinating with WSDOT for mitigation.

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Map of East Link Extension Alignment.

## Scope

<b>Limits:</b>	Downtown Seattle to Mercer Island, Bellevue and the Overlake area of Redmond.
<b>Alignment:</b>	East Link extends light rail 14 miles to East King County from Downtown Seattle serving Mercer Island via I-90, Bellevue and the Overlake area of Redmond, with ten new light rail stations. The alignment configuration includes at-grade, elevated, bridges, new and retrofitted tunnels.
<b>Stations:</b>	Judkins Park (formerly Rainier), Mercer Island, South Bellevue, East Main, Bellevue Downtown, Wilburton (formerly Hospital), Spring District/120th, Bel-Red/130th, Overlake Village and Redmond Technology Center (RTC).
<b>Systems:</b>	Signals, traction power, and communications (SCADA).
<b>Budget:</b>	\$3.677 Billion Baseline Budget (Year of Expenditure Dollars)
<b>Phase:</b>	Construction
<b>Construction Starts:</b>	2016
<b>Service:</b>	June 2023

## Key Project Activities

### Seattle to South Bellevue

- The East Link Construction Service Agreement with the City of Seattle has been passed by the ST Board on July 28, 2016.
- *Floating Bridge and Fixed Structures:* 90% Design is under review.
- Shoreline Permit for Mercer Island has been issued and appeal period ended without any appeals.
- All 23 IRT issues have received FHWA concurrence and are closed.
- Presented closure options for the International District Station conversion.
- Began development of the traffic management plan during construction with WSDOT.

### South Bellevue to Redmond

- Met with the City of Redmond on outreach plans and formats for E360 design/construction activities.
- Met with Metro to coordinate on transit reliability improvements at Overlake Transit Center.

### South Bellevue to Redmond *(continued)*

- E320: Work to finalize the I-90 Air Space Lease (ASL) and Temporary Construction Air Space Lease (TCAL) continued.
- E330: Design of the proposed tunneling approach modification (3 Drift) continued.
- E335: ST and 3rd Parties began reviewing 100% submittal for 120th Station and City Hall Plaza.
- E340: Continued working with Bellevue to finalize MOU-related revisions in the vicinity of 130th Station.
- E360: NTP for the E360 contracts was effective July 13. The Temporary Construction Air Space Lease (TCAL) was signed by WSDOT. Sweeper site agreement was executed.

## 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 figures in both tables are shown in millions. The Estimated Final Cost (EFC) for this project is \$3,677.2M in year of expenditure dollars. Approximately \$9.6M was incurred this period.

### Cost Summary by Phase

Project Phase	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
Administration	\$186.2	\$186.2	\$48.0	\$47.6	\$186.2	\$0.0
Preliminary Engineering	\$55.9	\$55.9	\$54.5	\$54.4	\$55.9	\$0.0
Final Design	\$283.0	\$283.0	\$224.4	\$179.7	\$283.0	\$0.0
Construction Services	\$257.5	\$257.5	\$116.4	\$13.9	\$257.5	\$0.0
3rd Party Agreements	\$52.2	\$52.2	\$26.8	\$7.4	\$52.2	\$0.0
Construction	\$2,544.3	\$2,544.3	\$372.2	\$33.1	\$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	\$156.3	\$152.3	\$298.2	\$0.0
<b>Total</b>	<b>\$3,677.2</b>	<b>\$3,677.2</b>	<b>\$998.6</b>	<b>\$488.4</b>	<b>\$3,677.2</b>	<b>\$0.0</b>

### Cost Summary by SCC

SCC Element	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 Guideway & Track	\$744.6	\$744.6	\$173.9	\$13.2	\$727.3	\$17.4
20 Stations	\$397.7	\$397.7	\$73.7	\$0.0	\$431.4	(\$33.7)
30 Support Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$808.5	\$808.5	\$97.2	\$19.8	\$795.8	\$12.7
50 Systems	\$353.8	\$353.8	\$6.2	\$0.1	\$352.6	\$1.2
<b>Construction Subtotal (10 - 50)</b>	<b>\$2,304.6</b>	<b>\$2,304.6</b>	<b>\$351.0</b>	<b>\$33.1</b>	<b>\$2,307.1</b>	<b>(\$2.4)</b>
60 Row, Land	\$288.5	\$288.5	\$156.3	\$152.4	\$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	\$900.3	\$491.3	\$302.9	\$897.8	\$2.4
90 Unallocated Contingency	\$182.9	\$181.0	\$0.0	\$0.0	\$181.0	\$0.0
<b>Total (10 - 90)</b>	<b>\$3,677.2</b>	<b>\$3,677.2</b>	<b>\$998.6</b>	<b>\$488.4</b>	<b>\$3,677.2</b>	<b>\$0.0</b>

## Risk and Contingency Management

### Contingency Status

Sound Transit has completed a draft Risk and Contingency Management Plan (RCMP) for East Link, and is currently addressing review comments from the Project Management Oversight Consultant (PMOC). The project's baseline budget, which was approved by the Sound Transit Board in April 2015, contained a total of \$795.9M contingency. This period, total contingency decreased by a net \$13.1M, to a new total amount of \$779.2M. The contingency balance remained higher than the anticipated draw down.

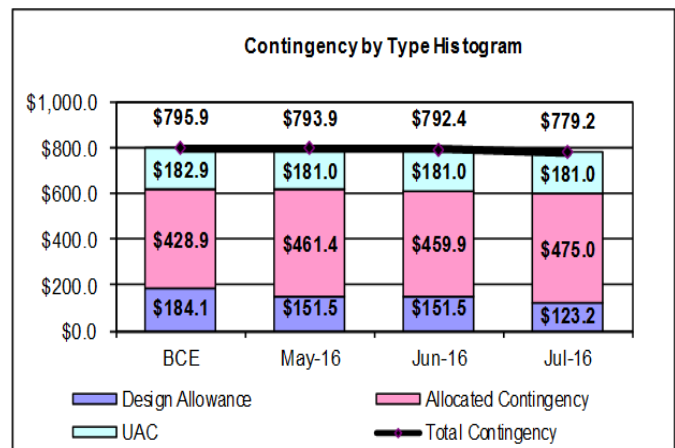
**Design Allowance** is used to account for scope that could not be quantified at the time of the cost estimate. The total amount of design allowance in the baseline cost estimate was \$184.1M. Design allowance had been drawn down in the prior periods to offset the increase in the base cost estimate as more design details are available for cost estimating. This period, the balance was reduced by \$28M, to a new balance of \$123.2M, upon the selection and award of the E360 contract. However, some Design Allowance became a part of the new base cost estimate while approximately \$15.2M was reclassified as Allocated Contingency. In the next coming periods, as the designs continue to be progressed to 100% level and the engineer's cost estimates are prepared, design allowance is expected to be reduced.

**Allocated Contingency** is used to address risks, complexity and unforeseen conditions during the execution of work, including procurement (market risk). This period, the total amount of allocated contingency increased by a net \$15.1M. This was due to the reclassification of \$15.2M from E360 Design Allowance, which was slightly offset by the execution of a change orders on the E330 contract in the amount of \$0.1M for Provisional Sum to deal with unidentified utility conflicts. Total allocated contingency balance is now \$475.0M.

**Unallocated Contingency** is used to address general project-wide cost risks and uncertainties. The total amount of unallocated contingency UAC in the baseline cost estimate is \$182.9M. UAC had been drawn down to \$181.0M in the Fall of 2015, but has not been changed since then.

Contingency Status	BCE		Current Status	
	Amount	% of Total Budget	Remaining Amount	% of Work Remaining
Design Allowance	\$184.1	5.0%	\$123.2	3.9%
Allocated Contingency	\$428.9	11.7%	\$475.0	14.9%
Unallocated Contingency	\$182.9	5.0%	\$181.0	5.7%
<b>Total:</b>	<b>\$795.9</b>	<b>21.6%</b>	<b>\$779.2</b>	<b>24.4%</b>

Dollar figures on this page are displayed in millions.



### 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. 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.

Sound Transit wrapped up the formal 2nd QTR 2016 Risks Review this period, and began the preparation of the quarterly risk report. Workshops were also attended by the PMOC. Sound Transit continued to involve construction contractors who are already under contracts (E130, E330 and E335 in its risks management program).

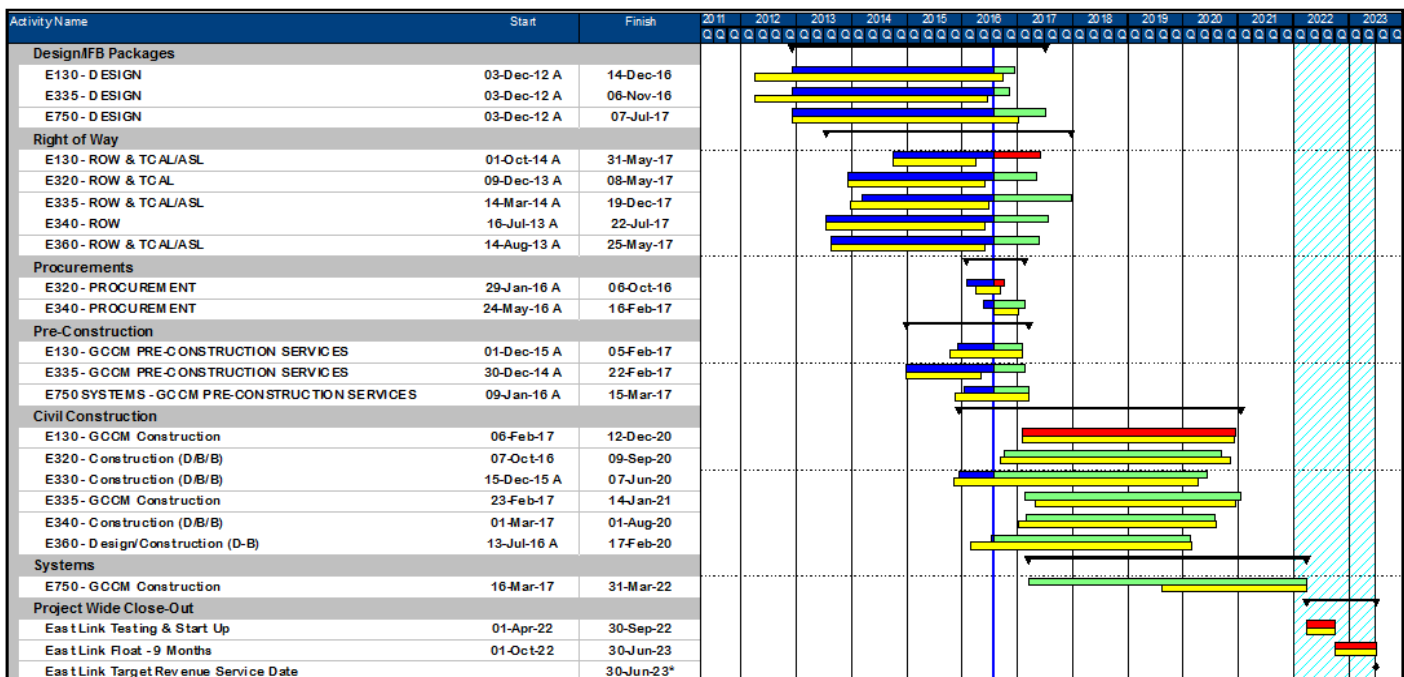
## Project Schedule

The East Link schedule finalized a thorough team review to ensure accuracy as we approach the construction phase of the project.

Revenue Service is forecasted for June 30, 2023.

East Link contract procurements continue:

- E335 GC/CM (Downtown Bellevue to Spring District) awarded 1st QTR 2015
- E130 GC/CM (I-90 Heavy Civil) and I-90 CMC awarded 4th QTR 2015
- E330 (Downtown Bellevue Tunnel) awarded 4th QTR 2015
- E750 GC/CM (East Link Systems) awarded 1st QTR 2016
- E360 D/B (SR520 to Overlake Transit Center) awarded 2nd QTR 2016
- Systems CMC currently in procurement, & scheduled to be awarded 3rd QTR 2016
- E320 (South Bellevue) to be awarded 3rd QTR 2016
- E340 (Bel-Red) scheduled to advertise 3rd QTR 2016



\*Note: This schedule represents East Link Schedule Progress. EL Baseline Schedule is represented by lower bar (yellow).

## Critical Path Analysis

The critical path continues to run through completion of E130 design and MACC negotiations, which then drives E130 NTP for construction. Issuance of the Dean Street TCAL is on the near critical path with less than a month of float before becoming the critical driver for E130 NTP for construction. And, although the I-90 TCAL will not be activated before June 2017, the E130 PDA (to be signed with I-90 TCAL) needs to be signed prior to NTP, making I-90 TCAL near critical.



E330 FTB placed in Trench 2 PSE duct bank

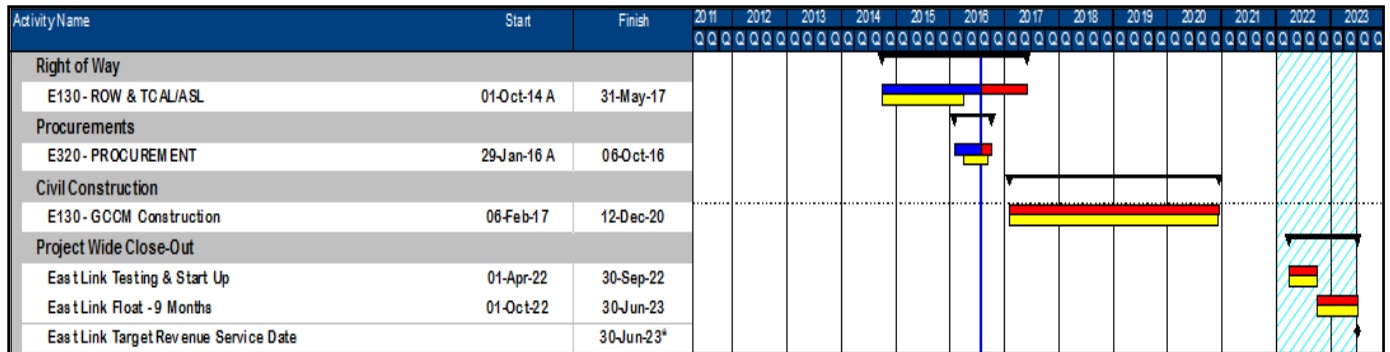


# Link Light Rail East Link Extension



## Critical Path Analysis, continued

The East Link critical path schedule is shown below. ASL coordination with WSDOT is recognized as a high priority.



## 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 will result in owner and tenant residential and commercial relocations. The East Link Extension included the advance acquisition of approximately one mile of an existing railroad parcel (“Bellevue Mile”) that the Sound Transit Board approved in June 2011. The right-of-way program status for this period is summarized in the following table. Market value trends in both residential and commercial properties are exhibiting strong upward pressure. Appraisals are being adjusted to reflect this increasing trend in the market. 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.

East Link Extension Property Acquisition Status								
Line Section	Board Approved	Offers Made/In Negotiations	Signed Agreements	Possession and Use	Admin Settlement	Closings to date	Relocations Required	Parcels Vacated
Seattle to S. Bellevue	2	1	0	0	0	0	0	0
S. Bellevue to RTC	237	207	3	12	19	124	227	178
Bellevue Mile	1	1	1	0	0	1	0	0
<b>Total</b>	<b>240</b>	<b>209</b>	<b>4</b>	<b>12</b>	<b>19</b>	<b>125</b>	<b>227</b>	<b>178</b>

### Seattle to S. Bellevue

*E130 IDS Rail Connection & IDS & I-90 Upgrades* - Air Space Lease discussions with WSDOT continue.

### S. Bellevue to RTC parcels

*E320 S. Bellevue*– One parcel signed and 2 admin settlement parcels. Air Space Lease discussions with WSDOT continue.

*E330 Downtown Bellevue* – One admin settlement parcel and one parcel signed.

*E335*– One offer signed and 6 admin settlement parcels.

*E340 Bel-Red* - One parcel granted P&U; 10 admin settlement parcels; two parcels closed and one required location became inactive; two parcels vacated.

*E360 SR 520 to OTC*– One parcel granted P&U. Air Space Lease discussions with WSDOT continue.

## Construction Safety

Data/ Measure	July 2016	Year to Date	Project to Date
Recordable Injury/Illness Cases	0	0	0
Days Away From Work Cases	0	0	0
Total Days Away From Work	0	0	0
Restricted or Modified Work Cases	0	0	0
Total Days Restricted or Modified Work	0	0	0
First Aid Cases	1	2	2
Reported Near Mishaps	1	6	6
Average Number of Employees on Worksite	48	-	-
<b>Total # of Hours (GC &amp; Subs)</b>	<b>8,269</b>	<b>17,278</b>	<b>17,278</b>
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	0.00	0.00	0.00
DART Rate	0.00	0.00	0.00
<i>Recordable National Average</i>	<i>3.60</i>	<i>3.60</i>	<i>3.60</i>
<i>DART National Average</i>	<i>2.00</i>	<i>2.00</i>	<i>2.00</i>
<i>Recordable WA State Average</i>	<i>7.20</i>	<i>7.20</i>	<i>7.20</i>
<i>DART WA State Average</i>	<i>3.30</i>	<i>3.30</i>	<i>3.30</i>

## Quality Assurance Activities

### Activities

- None to report.

### Issues

- None to report.

### Summary

Description	July 2016	Notes
No. of Audits Planned	0	None
No. of Audits Completed	0	None
Reports in Progress	2	E750/N830 90% Design Submittal Audit & E335 100% Design Submittal
No. of Audits Postponed	0	None

## Community Outreach

- Sent email to the Downtown Stakeholder list with an update on the progress of work done at the north tunnel portal.
- Published on website and emailed construction alert to south Bellevue with information regarding PSE's pavement restoration work on Bellevue Way that impacted the eastbound I-90 off-ramps.
- Provided updates to Skyline Tower and City Center Plaza regarding the reopening of the southbound lane on 110th Avenue.
- Provided a construction update for the Marriott building representatives in downtown Bellevue.

## Sound Transit Board Actions

Board Action	Description	Date
	<i>None to report.</i>	

## Environmental

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



# Link Light Rail East Link Extension Final Design - S. Bellevue to RTC



## Final Design Scope

Final Design for the East Link Extension includes three major design contracts: two for civil improvements and one for systems improvements. This contract is for civil and architectural design services from South Bellevue to the Redmond Technology Center (RTC). The contract was awarded to H-J-H Final Design Partners, a joint venture of HNTB Corporation, Jacobs Engineering Group, Inc., and Hatch Mott MacDonald.

The scope of H-J-H services includes detailed designs of the corridor, preparation of comprehensive construction contract documents, permitting support, surveying, geotechnical investigations, right-of-way planning, third party coordination, systems coordination, cost estimating, scheduling, sustainability report, bid support, Preliminary Hazards Analysis, and community outreach.

The design is grouped into five Contract Packages: (1) E320 South Bellevue; (2) E330 Downtown Bellevue Tunnel; (3) E335 Downtown Bellevue to Spring District; (4) E340 Bel-Red, and (5) E360 SR-520 to Redmond Technology Center.



Map of South Bellevue to Redmond Technology Center.

## Final Design Key Activities

### E320 So. Bellevue

- Design of the E320 contract package is complete.
- Continued Bid Support Services.

### E330 Downtown Bellevue Tunnel

- Design of the E330 contract package is complete.
- Continued Design Services During Construction.

### E335 Downtown Bellevue to Spring District

- Completed QA of IFB package drawings and technical specifications, 120<sup>th</sup> Station 100% documents, and Bellevue City Hall Plaza progress submittal documents.
- Continued with multi-discipline design coordination for of the City Hall Plaza, as well as the 120th Station and vicinity, and participated in the weekly Task Force meetings with the City of Bellevue and Wright Runstad.
- Coordinated with King County Metro on the placement of future rapid ride's sidewalk and conduits.

### E340 Bel-Red

- Coordinating with the City of Bellevue on the city's construction of the Mid-lakes pump station.
- Completed revised MOT IFB drawings to reflect a one-way MOT scheme.
- Continued coordination with private utilities to issue utility task orders.
- Continued to support the permit application process.

### E360 SR 520 to Redmond Technology Center

- Commenced Design Support for the E360 Design/Build Contract.

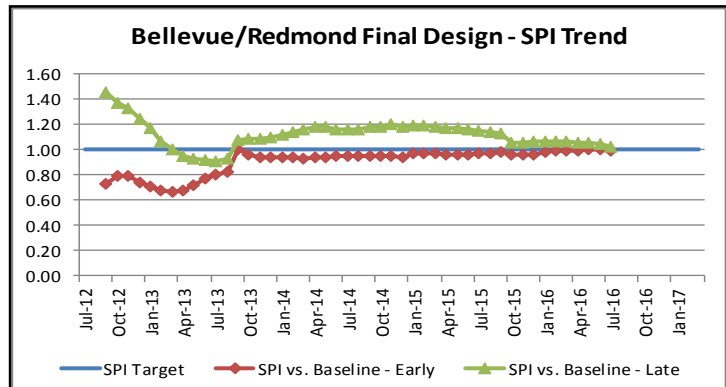
## Final Design Schedule

The table below shows the design submittal dates for each of the contract.

Contract Packages	60% Submittal		90% Submittal		100% Submittal		IFB Submittal	
	Baseline*	Forecast/ Actual	Baseline*	Forecast/ Actual	Baseline*	Forecast/ Actual	Baseline*	Forecast/ Actual
E320 So. Bellevue	12/6/2013	12/6/2013	9/19/2014	9/19/2014	4/3/2015	4/3/2015	1/25/2016	1/25/2016
E330 Downtown Bellevue Tunnel	11/18/2013	11/18/2013	6/2/2014	6/2/2014	10/20/2014	10/20/2014	5/11/2015 6/15/2015 (2 <sup>nd</sup> IFB)	5/11/2015 6/15/2015 (2 <sup>nd</sup> IFB)
E335 Downtown Bellevue to Spring District	12/20/2013	12/20/2013	10/19/2015	10/19/2015	3/8/2016	3/8/2016	6/13/2016 (9/6/2016 - 120 <sup>th</sup> Sta.)	7/15/2016 (9/6/2016 - 120 <sup>th</sup> Sta.)
E340 Bel-Red	7/15/2013	7/15/2013	4/04/2014	7/21/2014	12/8/2014	12/8/2014	5/23/2016	4/11/2016
	Draft RFP Submittal		Final RFP Submittal		*Baseline schedule dates revised to reflect final contract packaging and construction delivery methods.			
	Baseline*	Forecast/ Actual	Baseline*	Forecast/ Actual				
E360 SR-520 to RTC	2/18/2014	2/18/2014	8/14/2015	8/14/2015				

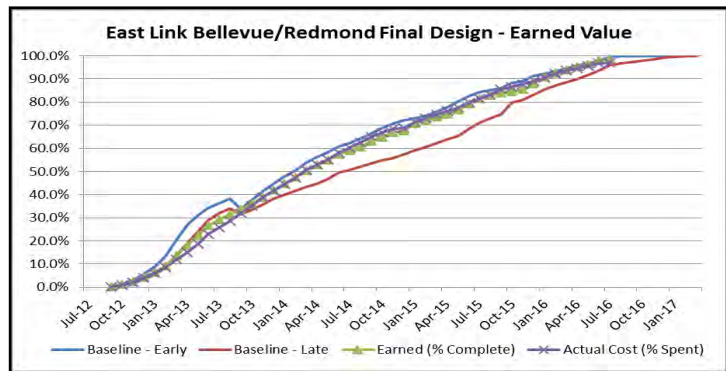
## Final Design Schedule Performance

Excluding Other Direct Expenses (ODCs), Profits and DSDC, the Schedule Performance Index (SPI) reported this period is at 1.0 when measuring against the Early Schedule Baseline, and 1.03 when measuring against the Late Schedule Baseline.

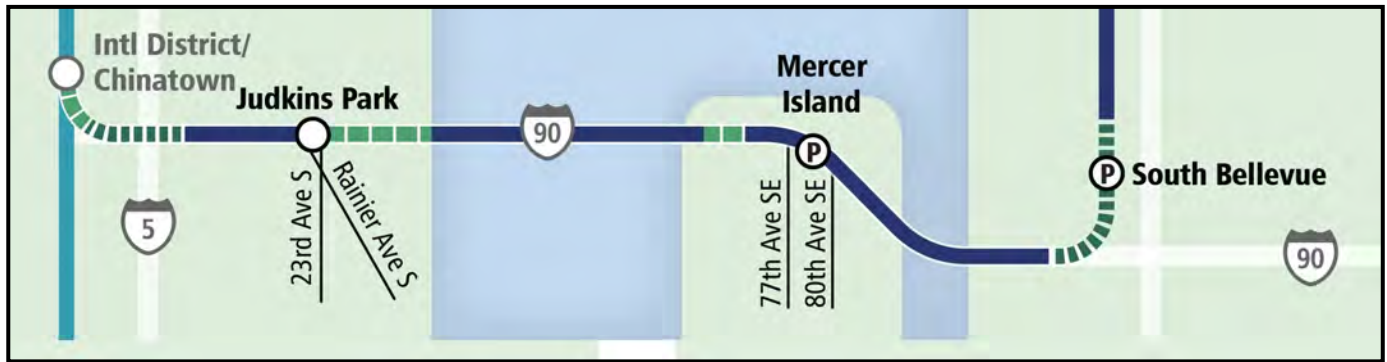


## Final Design Cost Performance

Labor cost (for Phase 2 Final Design) to-date is \$83.9M, or 97.7% of the budget. Progress earned through the same period is approximately 99% or \$85.1M of Earned Value. This yields a cumulative Cost Performance Index (CPI) of 1.01, which indicates approximately on-budget cost efficiency of the current contract budget, including executed change orders. Change orders continued to be negotiated and executed to address several design and specifications changes. However, Estimate At Completion (EAC) is within the approved budget by Sound Transit Board.



Performance	Previous Period	Current Period	Cumulative To Date
Labor Amt. Invoiced	\$83,673,437	\$316,216	\$83,989,653
% Spent	97.3%	0.4%	97.7%
Earned Value	\$84,941,135	\$200,902	\$85,142,037
% Complete	98.8%	0.2%	99.0%
<b>CPI</b>	<b>1.02</b>	<b>0.64</b>	<b>1.01</b>



Map of International District Station to South Bellevue.

## Final Design Scope

Final Design for the East Link Extension is delivered by three major design contracts: two for civil improvements and one for systems improvements. This Contract is for the civil and architectural design services from International District Station (IDS) to South Bellevue. The contract was awarded to Parsons Brinkerhoff, Inc. (PB).

The scope of the services includes detailed design of the corridor, preparation of comprehensive construction contract documents, permitting support, surveying, geotechnical investigation, right-of-way planning, third party coordination, systems coordination, cost estimating, scheduling, sustainability report, bid support, preliminary hazards analysis, and community outreach support.

The project in this segment has been aggregated into one Contract Package: E130 Rail Connection and Upgrades at IDS; seismic Retrofits of WSDOT Structures; and I-90 Civil/Architectural, which also includes the two at-grade stations, and Electrical/Mechanical Upgrades to existing Tunnels.

## Final Design Key Activities

### Design (Civil, Systems, Architecture, Art)

- *Floating Bridge*: 90% design under review.
- *Fixed Structures*: 90% design under review.
- *Stations*: Mercer Island and Judkins Park Stations 90% design under review.

### Third Party, Agreements, & Permits

- The East Link Construction Service Agreement with the City of Seattle has been passed by the ST Board on July 28.
- Sound Transit's building permit application with Mercer Island was determined to be complete and the Station is vested under the 2012 IBC.
- All 23 IRT issues have received both WSDOT and FHWA concurrence and are closed.
- Shoreline Permit for Mercer Island has been issued. Appeal period ended with no appeal.
- Sound Transit met with FHWA and WSDOT to confirm the process for environmental re-evaluation for project refinements within the I-90 corridor

### Construction & Construction Management

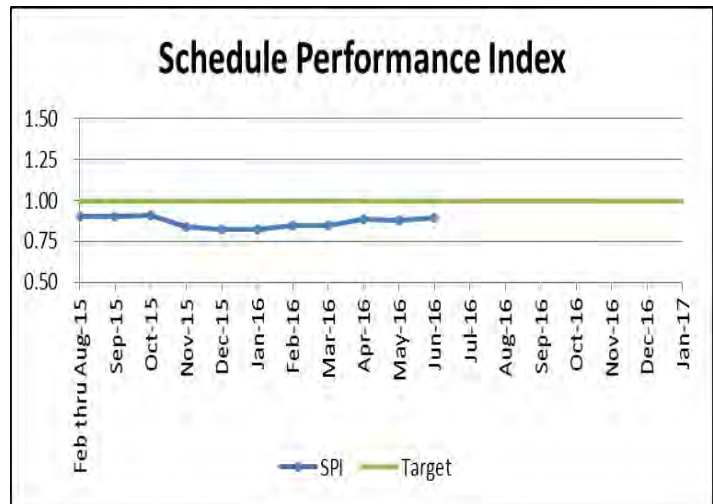
- The draft coordination plan between Sound Transit and King County Metro for the International District Station conversion is under review.
- Continued 90% constructability reviews and estimating. Estimating focused towards negotiated support services.
- Continued work on the floating bridge track attachments mock-up including installation of plinths with epoxy grout.
- Met with Urban Visions to discuss construction coordination between their development and E130 construction in the SODO area.
- Three Value Engineering (VE) ideas have been submitted to ST executives for approval.

### Final Design Schedule

Contract Packages	60% Submittal		90% Submittal		100% Submittal	
	Baseline	Actual	Baseline	Forecast/ Actual	Baseline	Forecast/ Actual
E130 – Rail connection & IDS upgrades; Seismic retrofits; and I-90 Civil/Arch./Elect. & Mech. Upgrades	4/4/2014	7/11/2014	6/16/2016	7/1/2016	12/14/2016	8/15/2016

### Final Design Schedule Performance

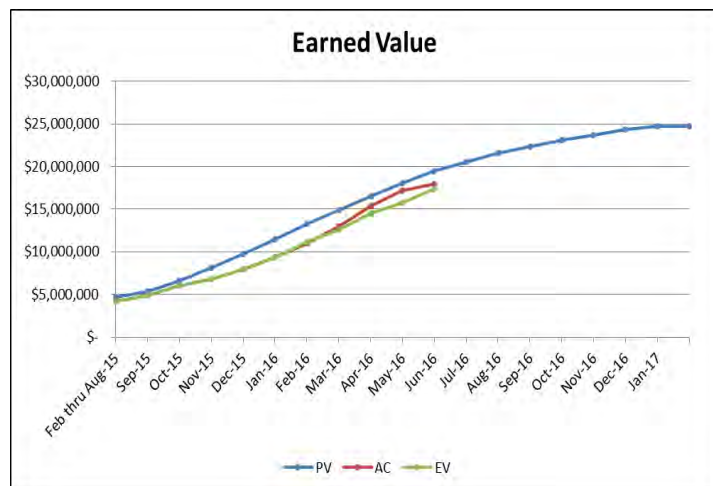
Excluding Other Direct Expenses (ODCs) and Profits, the Schedule Performance Index (SPI) reported this period is 0.90 when measuring against the Phase 2 Early Schedule Baseline, indicating the project continues to trend behind schedule but continues to stabilize. The schedule performance may be due to later than anticipated integration of the E130 GC/CM and CMC teams, and the later than anticipated delivery of the complete 90% plans. As the consultant realigns staff to perform remaining design tasks, the SPI is anticipated to approach 1.00 in the near future.



### Final Design Cost Performance

Reporting is for Phase 2 Direct Labor & Overhead performance only, measured against the Phase 2 Cost to Complete, and includes cost and budget performance from September 2015 through end of Final Design. The current IEAC (for the Phase 2 work only) is \$20.7M; current CPI is 0.97, up from 0.92 the previous month, indicating the project is trending over budget but is recovering. The over budget trend may be due to additional work efforts to complete the 90% plans, and efforts to produce the complete Pricing Set. It is anticipated the CPI will continue to trend near 1.00 for the duration of final design.

Since the negotiated Cost to Complete change order was executed, an additional \$544,621 in change orders have been executed; of this amount, \$37,887 is from ST's portion of the shared contingency. Including professional fee, invoiced to-date through April 2016 for total Labor and Other Direct Costs for Final Design is \$45.1M, or 83.2% of the current authorized budget of \$54.2M. Cost performance will be closely monitored to ensure project completion in a cost-effective and successful manner.



Performance (DL+OH only)	Previous Period	Current Period	Cumulative To Date
Amount Invoiced	\$17,194,767	\$779,242	\$17,974,009
% Spent	83.4%	3.8%	87.1%
Earned Value	\$15,796,281	\$2,355,586	\$17,418,573
% Complete	66.2%	11.4%	77.6%
CPI	0.92	3.02	0.97



## Final Design Scope

Final Design for the East Link Extension is delivered by three major design contracts: two for civil improvements and one for systems improvements. This contract is for the systems design services for the entire alignment. The contract was awarded to LTK Engineering Services, Inc. The scope of the services include detailed design of the corridor, preparation of comprehensive construction contract documents, 3rd party coordination, cost estimating, scheduling, and bid support.

## Final Design Key Activities

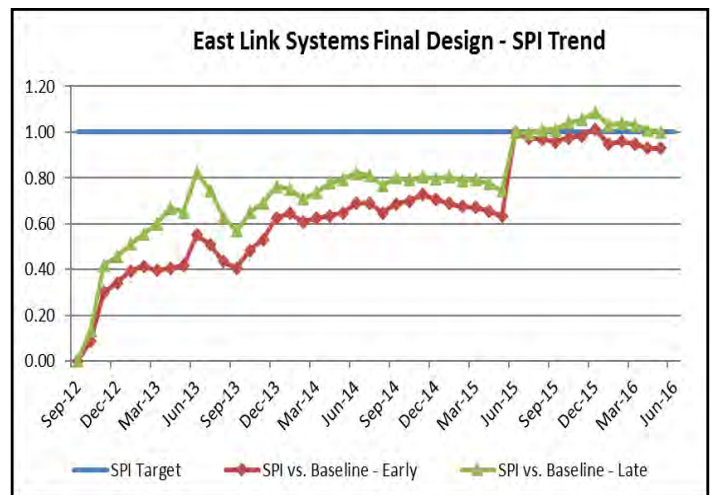
- Completed Systems elements within the E130 90% submittal to ST.
- Provided PB with floating bridge finite element analysis update.
- Entered QC phase for the 100% N830/E750 design.

## Final Design Schedule

	60% Submittal		90% Submittal		100% Submittal		IFB Submittal	
	Baseline	Actual	Baseline	Actual	Baseline	Forecast/ Actual	Baseline	Forecast/ Actual
E750– LRT Systems	10/24/2014	10/24/2014 Actual	2/1/2016	1/29/2016 Actual	9/6/2016	9/6/2016	3/1/2017	3/1/2017

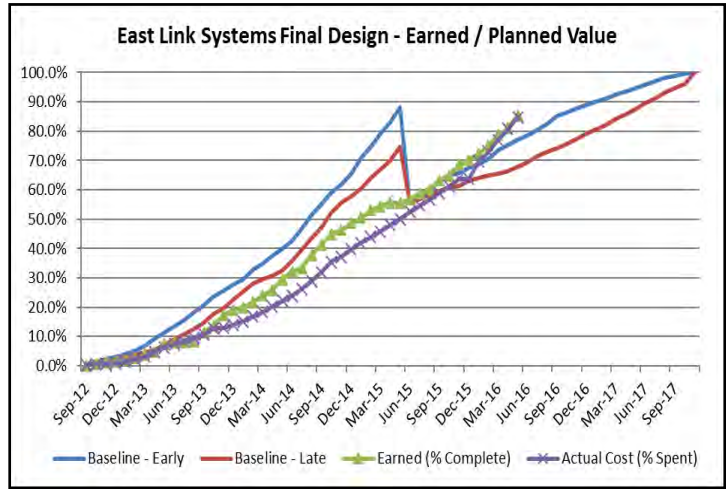
## Final Design Schedule Performance

The project is 85.3% complete resulting in an Earned Value of \$15M. The project has an early SPI of 0.95 and a late SPI of 1.04 which indicates that the contract is on schedule.



## Final Design Cost Performance

The project has spent approximately 84.7% of the budget resulting in CPI of 1.01. The current Estimate at Completion (EAC) is expected to be less than the current budget of \$17.9M.



Performance	Previous Period	Current Period	Cumulative To Date
Labor Amt. Invoiced	\$14,234,724	\$695,607	\$14,930,331
% Spent	80.0%	4.7%	84.7%
Earned Value	\$14,295,873	\$737,538	\$15,033,411
% Complete	81.1%	4.2%	85.3%
<b>CPI</b>	<b>1.1</b>	<b>1.1</b>	<b>1.1</b>



## 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: Continued work on the testing/mock-up of track and plinths attachment on the floating bridge.*

**E160 Track Bridge System** – Fabrication, delivery and install eight track bridges that will span over fixed structures and the floating bridge. [Furnish and Install]

*Status: Prototype Design, Fabrication, and testing complete*

**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: In procurement*

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

*Status: See following pages.*

**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: Began procurement of subcontract packages.*

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

*Status: Advertise 3rd QTR 2016*

**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: NTP issued on July 13, 2016.*

**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: Pre-construction contract awarded and NTP issued. GC/CM reviewing design documents, and coordinating with designers.*

## Contract E330 – Downtown Bellevue Tunnel

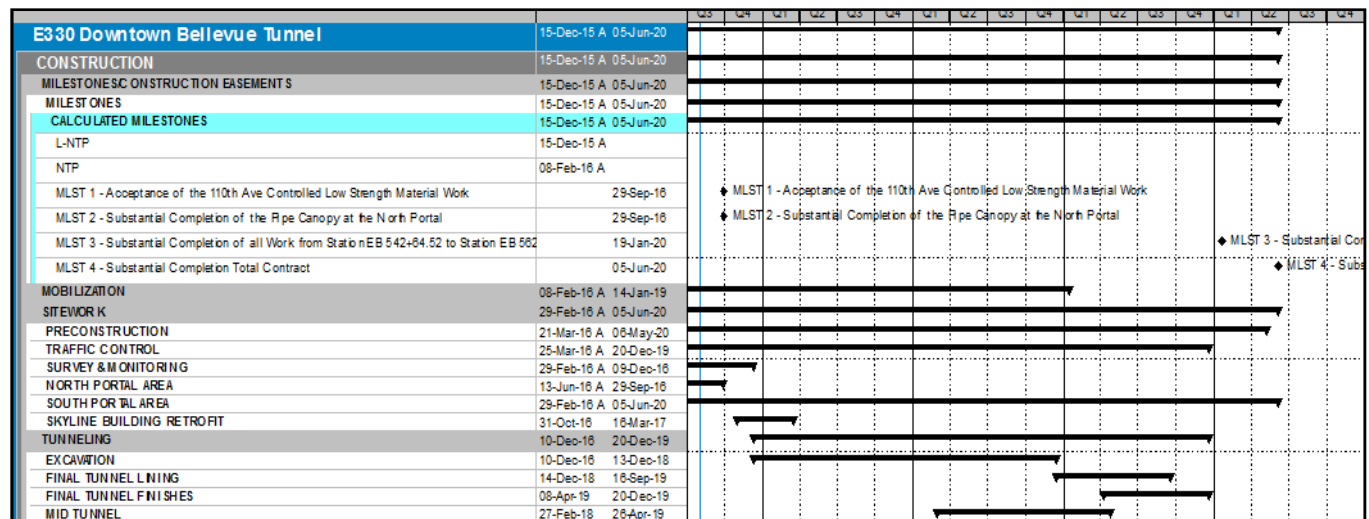
### Current Progress

**South Portal:** Continued drilling the sound wall shafts around the south end of the south portal, and commenced installation of the sound wall panels along the north wall concurrently with the sanitary sewer and storm drain installation.

**North Portal:** Completed installation of the first phase, trenches 1,2, & 6 of the Controlled Low Strength Material (CLSM) scope of work; paved SB 110th and shifted the traffic to phase 2 and continued working on trenches 3, 4, & 5; also installed electrical conduit and placed 2/3 of the storm drains and catch basins.

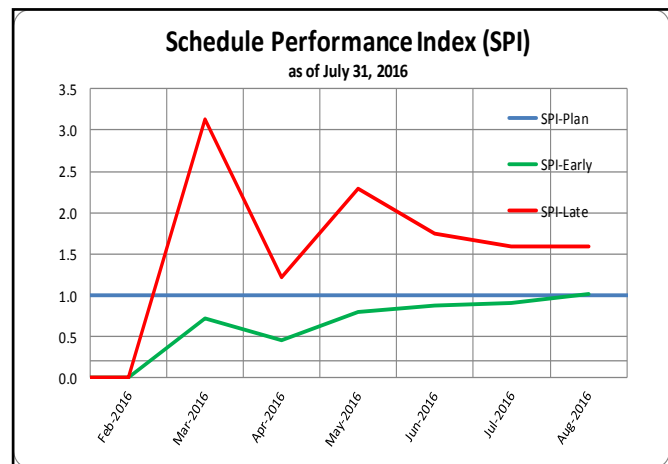
### Schedule Summary

The critical path for this contract continues to follow the South Portal excavation through the tunnel excavation and the completion of the South Portal structure. The decision to use CLSM in lieu of the grouted pipe canopy at the North Portal allowed for a resequencing of work which removes the need for an interim interface with E335, providing some schedule relief. The Contractor is currently modeling a change in excavation method for the southern 60% of the tunnel which, if approved, could realize up to three months of additional schedule savings.



### Schedule Performance Index

This period, the SPI early (1.01) trends to the original base plan and the SPI late (1.58) is holding its trend on completion ahead of the baselined schedule. The index indicates that the contractor continues trending in the positive direction and slightly ahead of the original base plan. This trend was supported by the fact that CLSM activities was completed ahead of the baseline schedule at the North Portal, and the fact that at the South Portal the sound wall installation happened concurrent with the installation of the sanitary sewer and storm drain. This expedited work quicker than scheduled in the baseline and allowed the contractor to commence the restoration at the Hammerhead Area.



## Next Period's Activities

- Continue drilling shafts and installing the construction site sound wall and gates around the south portal site.
- Continue installation of the Controlled Low-Strength Material (CLSM) Phase II work.
- Layout Piezometers, Inclometers and Extensometers throughout the site.

## Closely Monitored Issues

- Alternate SEM excavation sequence proposed by the contractor decision continues to be pending, awaiting additional modeling results.
- Obtaining Right-of-Entry agreements and temporary construction easements for properties along alignment.
- ST continues to review the Contractor's request for waiver of the wet stand pipe requirement during tunnel excavation.

## Cost Summary

Present Financial Status	Amount
<b>E330 Contractor- HDR</b>	
Original Contract Value	\$121,446,551
Change Order Value	\$695,221
Current Contract Value	\$122,141,772
Total Actual Cost (Incurred to date)	\$14,311,687
Financial Percent Complete:	11.7%
Physical Percent Complete:	11.7%
Authorized Contingency	\$12,244,655
Contingency Drawdown	\$695,221
Contingency Index	2.09



South Portal looking NW –installation of sound wall parcels.

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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 configuration heading south of the existing SeaTac/Airport Station, east of Air Cargo Road across South 188th Street, and continuing south along the east side of 28th Avenue South to the elevated Angle Lake Station located at South 200th Street. A passenger pickup/drop-off area, bus transfer, plaza, and a minimum 700-space structured park and ride facility will be located at Angle Lake Station. Up to 400 additional spaces may be developed for interim parking while Angle Lake Station is the interim southern terminus of the Link system. Guideway/Station and Parking Garage/Plaza are being delivered under a Design Build contract.
- Station:** Angle Lake Station is located at South 200th Street.
- Systems:** Signals, track electrification, and SCADA communications
- Budget:** \$383.2 Million
- Service:** September 2016
- Phase:** Construction



Map of S. 200th Link Extension.

## Key Project Activities

- *Design Build Guideway and Station (S440):* OCS Testing for static and dynamic signals, and rail ride quality are complete. L&I inspection failed for Station elevator, additional work underway. Need to reconcile various cost issues (existing crack street panels, 54-inch storm repairs, and fee-in-lieu agreement) with the City of SeaTac. City has offered to partially reimburse.
- *Design Build Parking Garage (S445):* Construction continues with garage structure: façade and elevator installation, site restoration and plaza area. The last elevator shipment delayed to mid -August.
- *Military Road/South 200th (S446):* WSDOT awarded construction contract. Procurement of materials will take 4-6wks, therefore construction to begin August 3rd. Work to be managed by WSDOT and is not necessary to complete prior to the start of revenue service.

- *Roadway Improvements (S447):* Construction nearing completion end of August; culvert activity and traffic signals.

## Closely Monitored Issues

- *S445 DB Parking Garage:* Concern of late delivery and installation of elevator resulting in late L&I inspection in mid-September.
- *The project has no more remaining float.* Due to activities associated with the late elevator cab manufacturing, delivery and subsequent installation in the S445 contract have also concurrently extended that contract necessitating the use of project float. Mitigation for the elevator unavailability at Revenue Service is underway.

## 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 approved by ST Board in December 2015. 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	Current Adopted Budget	Commitment to Date	Incurred to Date	Est. Final Cost (EFC)	Adopted Budget vs. EFC
Administration	\$16.1	\$16.8	\$14.2	\$14.1	\$16.8	\$0.0
Preliminary Engineering	\$5.9	\$5.7	\$5.7	\$5.7	\$5.7	\$0.0
Final Design	\$20.0	\$9.9	\$8.7	\$8.7	\$8.8	\$1.1
Construction Services	\$15.1	\$17.3	\$15.0	\$14.8	\$16.9	\$0.4
3rd Party Agreements	\$6.9	\$7.1	\$5.7	\$3.7	\$5.9	\$1.2
Construction	\$275.7	\$282.9	\$234.3	\$222.5	\$245.5	\$37.4
Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$43.5	\$43.5	\$42.9	\$38.0	\$43.5	\$0.0
<b>Capital Total</b>	<b>\$383.2</b>	<b>\$383.2</b>	<b>\$326.5</b>	<b>\$307.5</b>	<b>\$343.2</b>	<b>\$40.0</b>
Finance Cost	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>Project Total</b>	<b>\$383.2</b>	<b>\$383.2</b>	<b>\$326.5</b>	<b>\$307.5</b>	<b>\$343.2</b>	<b>\$40.0</b>

The overall project Estimated Final Cost (EFC) for this period reflects \$343M, a savings projection of \$40M. This period incurred cost increased by approximately \$3.1M, of this \$2.1M was for construction activities. S440 Guideway & Station Design Build contract was \$0.6M, S445 Parking Garage Design Build contract was \$1.0M, and S447 was \$0.5M. Construction services were \$0.5M and the remaining expenditures for \$0.3M were related to administrative charges.

The EFC grouped by SCC is also reflecting \$343M, a savings projection of \$40M. The work remaining can be achieved under the adopted budget.

### Cost Summary by SCC

Project Elements by SCC	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Est. Final Cost (EFC)	Adopted Budget vs. EFC
10 Guideway & Track Elements	\$144.8	\$133.0	\$98.6	\$99.1	\$108.0	\$25.0
20 Stations	\$46.4	\$51.3	\$39.4	\$38.7	\$40.3	\$11.0
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	\$56.5	\$45.4	\$57.5	-\$2.2
50 Systems	\$30.8	\$19.9	\$19.4	\$19.1	\$19.4	\$0.5
<b>Construction Subtotal (SCC 10-50)</b>	<b>\$256.6</b>	<b>\$259.6</b>	<b>\$213.8</b>	<b>\$202.3</b>	<b>\$225.3</b>	<b>\$34.3</b>
60 Row, Land, Existing Improvements	\$43.5	\$43.5	\$42.9	\$38.0	\$43.5	\$0.0
70 Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
80 Professional Services	\$64.1	\$72.1	\$69.8	\$67.2	\$68.6	\$3.5
90 Unallocated Contingency	\$19.0	\$8.0	\$0.0	\$0.0	\$5.8	\$2.2
<b>Project Total (SCC 10-90)</b>	<b>\$383.2</b>	<b>\$383.2</b>	<b>\$326.5</b>	<b>\$307.5</b>	<b>\$343.2</b>	<b>\$40.0</b>
100 Finance Cost	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>Project Total (SCC 10-90)</b>	<b>\$383.2</b>	<b>\$383.2</b>	<b>\$326.5</b>	<b>\$307.5</b>	<b>\$343.2</b>	<b>\$40.0</b>



## Cost Contingency Management

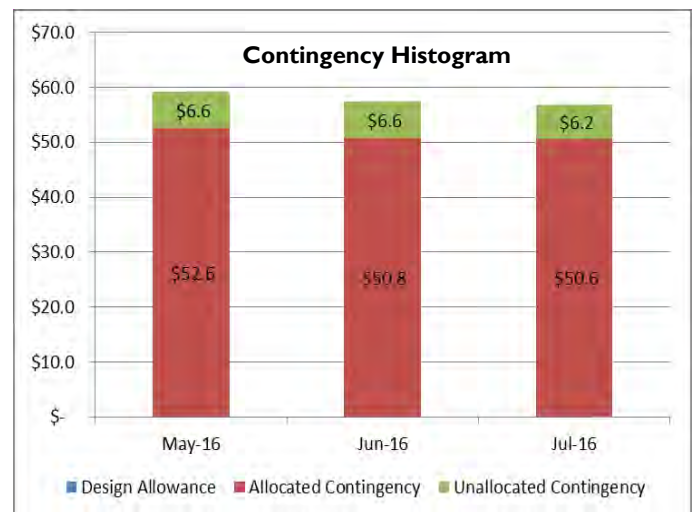
The overall project contingency balance as of this period is \$56.8M.

**Design Allowance (DA):** After baselining the project the design allowance of \$26.7M was added to the base estimate for the design build work package. There will be no future reporting of DA.

**Allocated Contingency (AC):** This period the AC shows a current balance of \$50.6M, a decrease of \$0.6M from the previous period. The reduction was primarily due to construction phase: change orders for S440 (\$37K) and S445 (\$63.3K), and Fare Collection (\$119.2K). Other charges were due to administration commitments of \$0.4M.

**Unallocated Contingency (UAC):** This period the UAC balance is \$6.2M, which reflects a reduction of \$0.4M due to additional contingency required for the Parking Garage contract (S445). August Board approval is pending.

Contingency Status	Baseline		Current	
	Amount	% of Total	Amount	% of Work Remaining
Design Allowance	\$26.7	7.0%	\$ -	0.0%
Allocated Contingency	\$29.8	8.0%	\$50.6	141.1%
Unallocated Contingency	\$19.0	5.0%	\$ 6.2	17.3%
<b>Total</b>	<b>\$75.5</b>	<b>20.0%</b>	<b>\$56.8</b>	<b>158.7%</b>



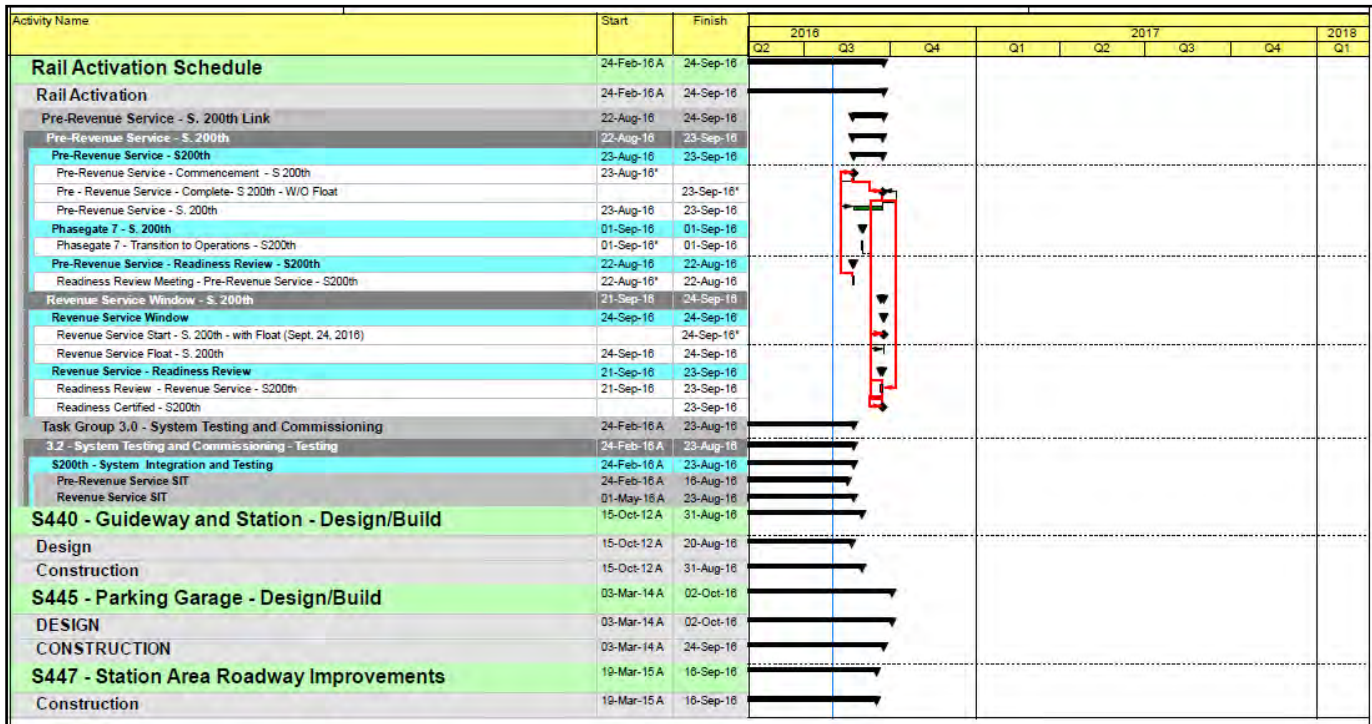
## Risk Management

The South 200th Link Extension Risk Management Plan (RMP) established a risk management and oversight process for assessing and monitoring risks to determine how risks have been reduced or mitigated. RMP captures scope growth, schedule delay, and cost growth risks that could arise during any phase of the project and potentially affect parts of the project scope. On a quarterly basis, the South 200th Link Extension team reviews and updates risk to reflect conditions. Below is a list of the top five major risk review items:

- CONSTRUCTION: Delays due to L&I inspection of elevators. (S440/S445).
- CONSTRUCTION: Radio frequency testing of façade may require additional system infrastructure (S445).
- CONSTRUCTION: Security communication interface for PET (S440/S447).
- CONSTRUCTION: Theft of equipment and security on project site. (S440).
- RAIL ACTIVATION: Rail Activation coordination needs improvement. (S440)

## Project Schedule

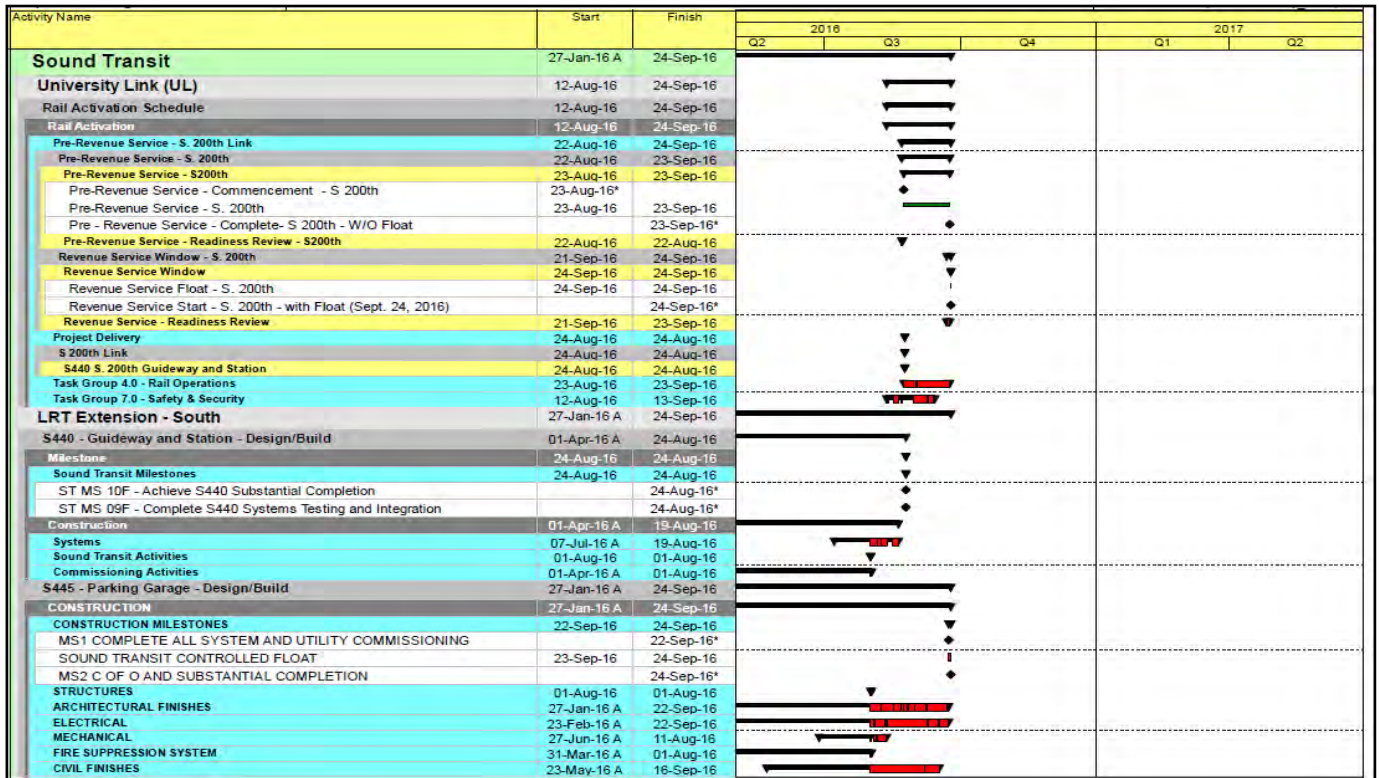
System Integration Testing is nearing completion and punchlist work is well underway at the station and guideway. Pre Revenue Service is expected next period. S445 DB Parking Garage Design/Builder is working on architectural and mechanical and electrical finishes. The S. 200th Master Schedule has been tied to the Rail Activation Schedule. The S. 200th Link Extension anticipated service launch is September 2016. (See Project Schedule Summary below).



## Critical Path Analysis

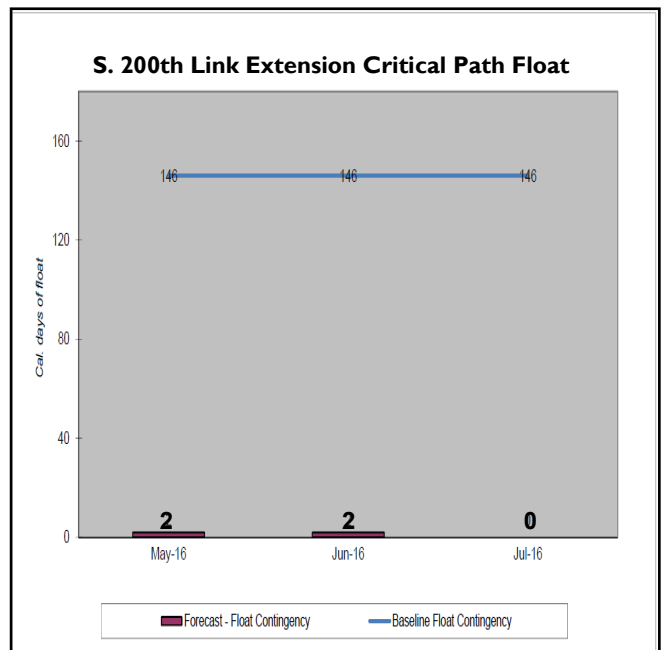
The critical path this period runs through system integration testing and safety certification. S445 critical path is the elevator installation and stairs. All elevator equipment is expected to be delivered and installed prior to Revenue Service at this time. (See graphic on following page.)

## Critical Path Analysis, continued



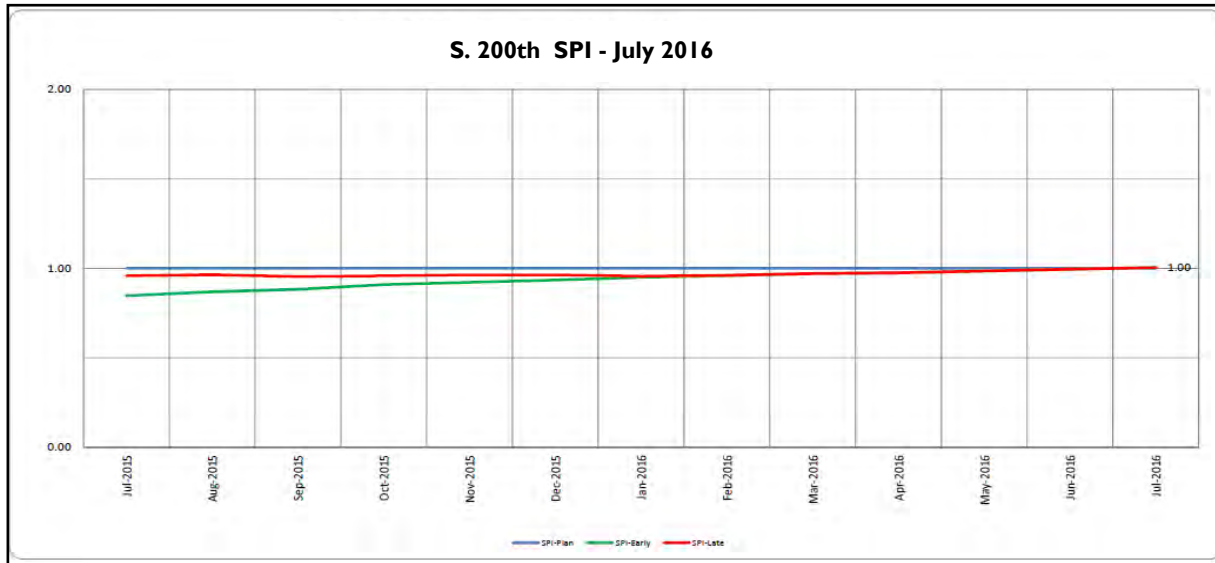
## Critical Path Float

The baseline float contingency for S. 200th Link Extension was 146 days. As of this period, there is no more remaining float per the Rail Activation schedule. This reduction in float is attributable to activities in the S440 contract associated with certain civil deliverables and with OCS and Communication equipment installation as well as commissioning and system-wide testing activities. EIC availability has also been a factor in delaying commissioning and System Integration activities. In addition, activities associated with the late elevator cab manufacturing, delivery and subsequent installation in the S445 contract have also concurrently extended that contract necessitating the use of project float. Mitigation for the elevator unavailability at Revenue Service is underway.



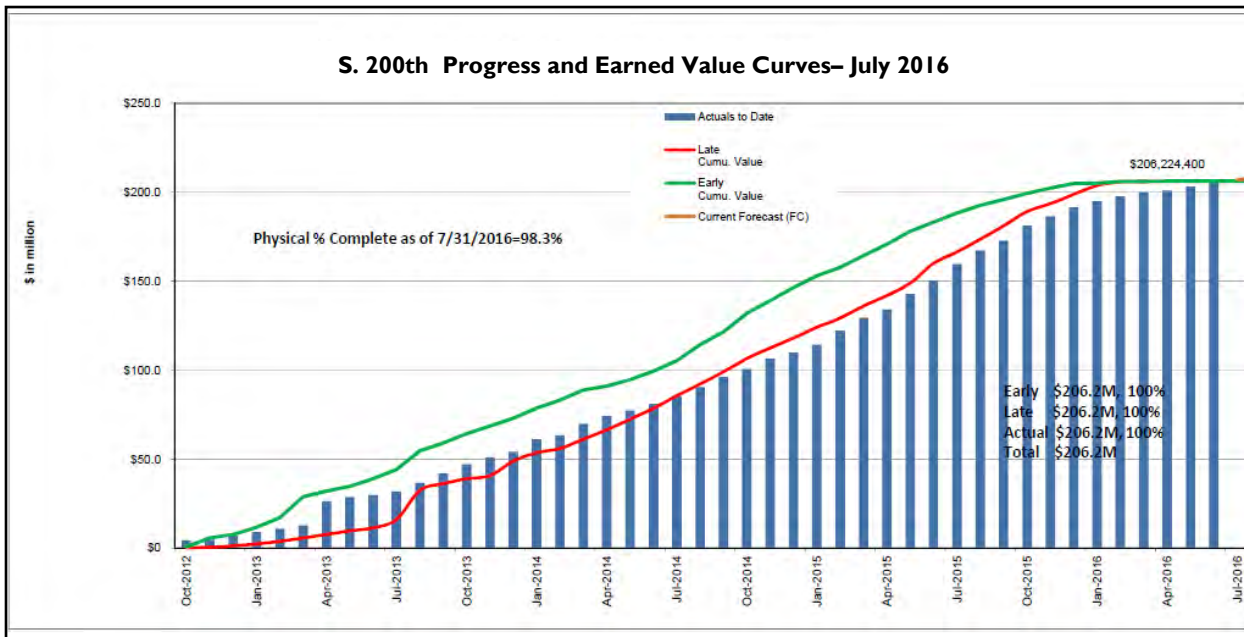
## Schedule Performance Index

The Schedule Performance Index (SPI) for S.200th has risen slightly this period to 1.00 as work focuses on system integration testing. Punchlist work is now underway for the station and guideway. S445 final elevator deliveries are expected next period. (See details on individual contract sections.) Progress will continue to be monitored closely.



## Cost Progress Analysis

Overall S. 200th physical % complete is at 98.3%. Graphic below is a representation of the progress of major construction contracts cost compared to the early/late projections. S440 will be the main driver for performance levels for S. 200th Link Extension.





## Right-of-Way

The South 200th Link Extension (S440) will extend from the SeaTac Airport Station along an elevated guideway to a station combined with a park and ride garage at South 200th Street. The South 200th Link Extension involved the acquisition of a range of property interests, including fee acquisitions, permanent and temporary easements, and both business and residential relocations. S447 covers road and utility improvements necessary as a result of the increased traffic that is anticipated with the new station. S447 initially covered 28 parcels of which 10 were previously certified for S440. Six (6) parcels that had ST acquisitions on S440 will also have acquisitions on S447. The right-of-way program is summarized below. *There are no more updates for South 200th Link ROW activities.*

Line Section	Total Parcels Certi- fied*	Offers Made	Signed Agree- ments	Admin. Settle- ments	Posses- sion and Use	Closings to date	Baseline Relocations Required	Relocations Completed
S440	64	59	0	0	0	56	8	8
S445	1	1	0	0	0	1	0	0
S447	27	16	0	0	0	16	0	0
<b>Total</b>	<b>92</b>	<b>76</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>73</b>	<b>8</b>	<b>8</b>

Note: \*Seven of these parcels are in two different contracts and three parcels are in the S440 contract twice. These 10 parcels are counted twice as they have 2 different milestones.

## Construction Safety

Safety Statistics for the reporting period and year-to-date are summarized in the table below.

Data/Measure	July 2016	Year to Date	Project to Date
Recordable Injury/Illness Cases	0	4	17
Days Away From Work Cases	0	1	3
Total Days Away From Work	0	6	20
Restricted or Modified Work Cases	0	1	9
Total Days Restricted or Modified Work	0	51	471
First Aid Cases	0	3	36
Reported Near Mishaps	1	5	25
Average Number of Employees on Worksite	120	-	-
<b>Total # of Hours (GC &amp; Subs)</b>	<b>18,743</b>	<b>198,544</b>	<b>1,059,308</b>
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	0.00	4.03	3.21
DART Rate	0.00	2.01	2.27
<i>Recordable National Average</i>	<i>3.60</i>	<i>3.60</i>	<i>3.60</i>
<i>DART National Average</i>	<i>2.00</i>	<i>2.00</i>	<i>2.00</i>
<i>Recordable WA State Average</i>	<i>7.20</i>	<i>7.20</i>	<i>7.20</i>
<i>DART WA State Average</i>	<i>3.30</i>	<i>3.30</i>	<i>3.30</i>

## Quality Assurance Activities

### Activities

- None to report.

### Issues

- None to report.

### Summary

Description	July 2016	Notes
No. of Audits Planned	0	None
No. of Audits Completed	0	None
Reports in Progress	0	None
No. of Audits Postponed	0	None



## Community Outreach

- Met with City of SeaTac regarding Angle Lake Station opening.
- Met with the Highline School District Director of Transportation Services regarding road closure impacts on their services (no impacts currently).
- Continued weekly check-in with directly impacted businesses during road closure of S200th.
- Continued working on TCE close-outs with property owners on S. 200th Link project.

## Sound Transit Board Actions

Board Actions	Description	Date
	<i>None to report.</i>	

## Contract Packages

The South 200<sup>th</sup> Link Extension consists of two major contract packages, both by Design Build methods, and two minor contracts. Below is a brief scope description of each package.

- **S440 Design Build Guideway and Station** - This contract involves the design and construction of an elevated guideway (1.6 miles) and station, site work, civil /roadwork, and systems. See S440 contract page for detailed information on the following page.
- **S445 Design Build – Parking Garage and Plaza** – This contract involves the design and construction of a parking garage (700 space structure), passenger pick-up and drop-off lot, plaza area, retail space and surface parking. See S445 contract page for details.
- **S446 Military Road & South 200<sup>th</sup> Street Improvements** – This contract package consists of construction of roadway and traffic signals work.
- **S447 Station Area Roadways & Surface Parking**- This contract package consists of station area roadway, surface parking, and non-motorized Improvements (sidewalks, traffic signals, pedestrian/bicycle connection, roadwork).

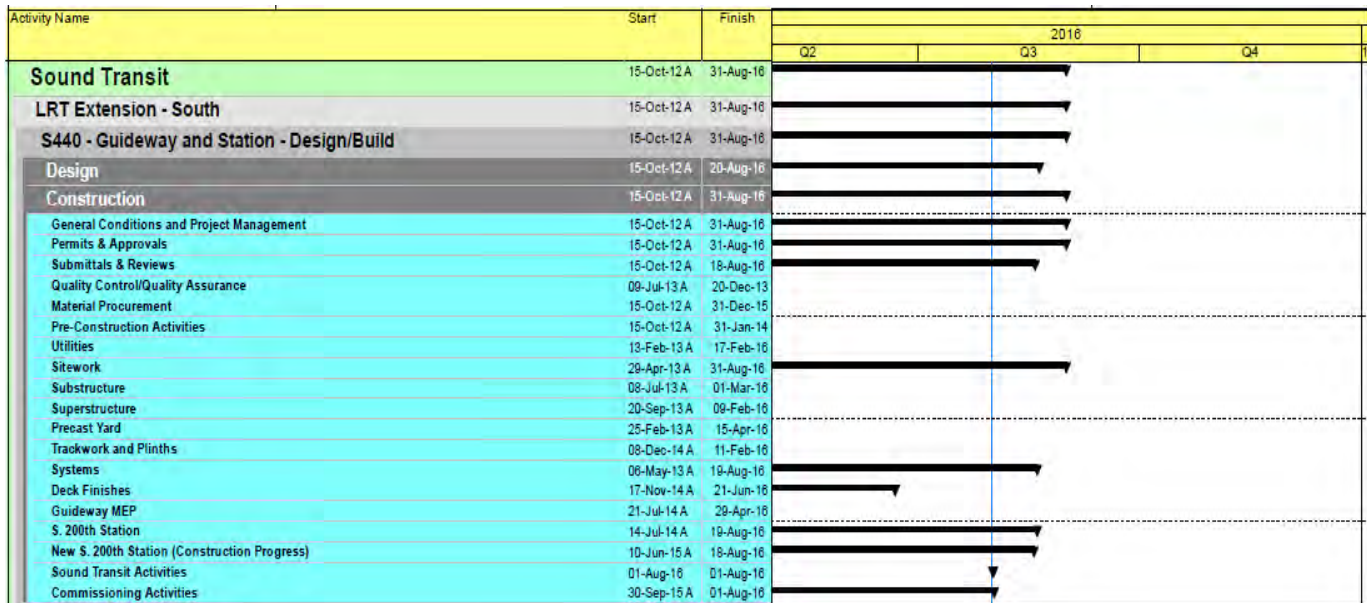
## S440 Contract—Design -Build (Guideway and Station)

### Current Progress

System Integration Testing has commenced. OCS was energized at the last period. Allowing the commencement of Dynamic System Integration Testing. Overall the progress of this contract represents 99% physical completion as compared to 98% time to date.

### Schedule/Critical Path

The schedule update for this period is currently under review. Milestone #7 (Systems Commissioning) which is reporting 115 days of negative float. Milestone #9 (System Integration Testing) is reporting 63 days of negative float. Milestone #10 (Substantial Completion) is reporting 63 days of negative float. The critical path this period runs system integration testing and communications activities. Schedule coordination with the System Integration Testing Plan is expected to continue.



### Schedule Performance Index

SPI data is no longer applicable in this stage of the project.

## Key Activities

### Current Period

- *Angle Lake Station/Plaza activities:* Escalator and elevator L&I inspection occurred and re-inspection is required; Fire control system passed inspection; BMS system work continues; continued punchlist work including City permit items. TVMs & ORCA readers (north & south) are installed. Light level testing accepted. The “Art Cloud” light level adjustments ongoing.
- *Guideway activities:* Continued various punchlist activities and walkthroughs inside and on top of guideway.
- *Systems/testing/commissioning:* LRV testing for ROW clearance, live wire interface and ride quality completed. Access control, ETEL, Audio/PA, CCTV, ETS transfer switch testing ongoing. Signal static testing completed. Dynamic LRV testing continues.
- Continued landscape restoration along 28th Ave S and is nearing completion.
- Port of Seattle site restoration is done and roadway punchlist continues. Installation of irrigation system completed.

### Next Period

- Turnover guideway to ST Operations.
- Finalizing station work.
- Continue various site work.
- Continue other miscellaneous work: punchlist work, landscaping and restoration continues.
- Continue Signals/Train Control and commissioning activities.

## Closely Monitored Issues

- Completion of Training and O&M Manuals.

## Cost Summary

Present Financial Status	Amount
<b>S440 Contractor—PCL Civil Contractors, Inc.</b>	
Original Contract Value	\$169,000,000
Change Order Value	\$4,726,580
Current Contract Value	\$173,726,580
Total Actual Cost (Amount Billed)	\$171,784,611
Financial Percent Complete:	99%
Physical Percent Complete:	99%
Authorized Contingency	\$13,520,000
Contingency Drawdown	\$4,726,580
Contingency Index*	2.8



TVM installation at the Angle Lake Station.

## S445 Contract—Design -Build Parking Garage

### Current Progress

At S445, delays to elevator equipment procurement continue to impact the completion date for this project. Production will be watched closely. Overall progress of this contract: construction is 95% physical completion and against 94% duration complete. Milestone Revisions have been included in the update this period but do not represent the completion dates in the update. Liquidated Damages are now being applied to this contract.

### Schedule/Critical Path

The critical path this period runs through elevator fabrication and elevator installation. Milestone #2 Substantial Completion, is reporting 127 days of negative float with 2 days of owner controlled float intact. Delays persist in procurement of elevator and near critical stair installation. It is expected that schedule delays will continue regarding elevator fabrication and installation.

Activity Name	Start	Finish	2016			
			Q2	Q3	Q4	2017
<b>S 200th Link Extension</b>	04-Aug-14 A	24-Sep-16	[Gantt bar]			
<b>S445 - Parking Garage - Design/Build</b>	04-Aug-14 A	24-Sep-16	[Gantt bar]			
<b>DESIGN</b>	04-Aug-14 A	22-Sep-16	[Gantt bar]			
<b>DESIGN MILESTONES</b>	04-Aug-14 A	22-Sep-16	[Gantt bar]			
CONSTRUCTION DESIGN SUPPORT	04-Aug-14 A	22-Sep-16	[Gantt bar]			
<b>CONSTRUCTION</b>	27-Jan-16 A	24-Sep-16	[Gantt bar]			
<b>CONSTRUCTION MILESTONES</b>	22-Sep-16	24-Sep-16	[Gantt bar]			
MS1 COMPLETE ALL SYSTEM AND UTILITY COMMISSIONING		22-Sep-16*	[Gantt bar]			
SOUND TRANSIT CONTROLLED FLOAT	23-Sep-16	24-Sep-16	[Gantt bar]			
MS2 C OF O AND SUBSTANTIAL COMPLETION		24-Sep-16*	[Gantt bar]			
<b>STRUCTURES</b>	01-Aug-16	01-Aug-16	[Gantt bar]			
<b>ARCHITECTURAL FINISHES</b>	27-Jan-16 A	22-Sep-16	[Gantt bar]			
<b>ELECTRICAL</b>	23-Feb-16 A	22-Sep-16	[Gantt bar]			
<b>MECHANICAL</b>	27-Jun-16 A	11-Aug-16	[Gantt bar]			
<b>FIRE SUPPRESSION SYSTEM</b>	31-Mar-16 A	01-Aug-16	[Gantt bar]			
<b>CIVIL FINISHES</b>	23-May-16 A	16-Sep-16	[Gantt bar]			

### Schedule Performance Index

At this stage of the project, SPI data is no longer applicable.

## Key Activities

### Current Period

- Continued design and construction interface coordination meetings with S440 DB Contractor, and continue construction coordination with S447 contractor.
- Completed installation work on Fire Alarm systems devices with the exception of the elevator devices.
- Continued installation of facade support, facade planks and plaza pavers.
- Continued PSE and TPSS screen fence and gate installation.
- Continued structural framing of plaza canopy and work on stairs.
- Continued installation of security system, Telecom, and PV panels and equipment.
- Continued landscaping work.
- Continued elevator installation activities in shaft and machine room.

### Next Period

- Complete façade support installation, structural framing of plaza canopy and landscaping work.
- Continue installation of security system, Telecom, and PV panels and equipment.
- Continue installation of plaza pavers.
- Continue elevator installation.
- Continue elevator installation activities in shaft and machine room.
- Begin installation of security gates.

## Closely Monitored Issues

- The fabrication, delivery and installation of the elevator as well as the façade installation remain on the critical path. The first two shipments of the elevator core arrived on 6/30/2016. Final shipment is scheduled for August 2016.
- Assessment of liquidated damages has begun for each day the Contractor fails to achieve the currently approve contract milestones.

## Cost Summary

Present Financial Status	Amount
<b>S445 Contractor—Harbor Pacific/Graham</b>	
Original Contract Value	\$29,978,000
Change Order Value	\$2,054,061
Current Contract Value	\$32,032,061
Total Actual Cost (Amount Billed)	\$29,668,983
Financial Percent Complete:	93%
Physical Percent Complete:	95%
Authorized Contingency	\$2,398,240
Contingency Drawdown	\$2,054,061
Contingency Index*	1.1



Façade installation ongoing at the garage.



## S447 Contract – Station Area Roadway Improvements and Surface Parking

### Current Progress

S447 Contractor continues to mitigate for continued constructability issues. Overall this contract is 97% physical completion and 93% duration complete as milestone revisions continue. Milestone revisions have been adjusted last period per change order but delays continued this period.

### Schedule/Critical Path

The July schedule has been submitted. Substantial completion is now forecast for September 14th, 2016 as design revisions to work on S. 200th continue. Efforts to complete S. 200th work is underway.

Activity Name	Start	Finish	2016		
			Q2	Q3	Q4
<b>S 200th Link Extension</b>	19-Mar-15 A	16-Sep-16	[Gantt Bar]		
<b>S447 - Station Area Roadway Improvements</b>	19-Mar-15 A	16-Sep-16	[Gantt Bar]		
<b>Construction</b>	19-Mar-15 A	16-Sep-16	[Gantt Bar]		
<b>S447 Construction</b>	19-Mar-15 A	16-Sep-16	[Gantt Bar]		
Contract Time	19-Mar-15 A	16-Sep-16	[Gantt Bar]		
S447 South 200th St. Link Extension - Construction	19-Mar-15 A	16-Sep-16	[Gantt Bar]		
S447 South 200th St. Link Extension - Construction	19-Mar-15 A	12-Aug-16	[Gantt Bar]		
Sound Transit Controlled Float		14-Sep-16	[Milestone Diamond]		
Substantial Completion		14-Sep-16	[Milestone Diamond]		
Final Acceptance		16-Sep-16	[Milestone Diamond]		
<b>Project Management</b>	19-Mar-15 A	31-Dec-15 A	[Gantt Bar]		
Mobilization	19-Mar-15 A	30-Apr-15 A	[Gantt Bar]		
S447 Submittals	01-Apr-15 A	28-Jul-16 A	[Gantt Bar]		
S. 204th	01-May-15 A	15-Jun-15 A	[Gantt Bar]		
28th Ave South	01-May-15 A	06-Jul-16 A	[Gantt Bar]		
Angle Lake Parking	25-Jun-15 A	06-May-16 A	[Gantt Bar]		
200th St (South Side) East of 26th	19-Aug-15 A	20-Jun-16 A	[Gantt Bar]		
200th St (North Side) East of 26th	22-Jul-15 A	12-Aug-16	[Gantt Bar]		
Project Electrical (East of 26th)	14-Aug-15 A	09-Aug-16	[Gantt Bar]		
All Work West of 26th	26-Jun-15 A	14-Sep-16	[Gantt Bar]		
Project Closeout	14-Sep-16	16-Sep-16	[Gantt Bar]		

### Schedule Performance Index

At this stage in the project, SPI data is no longer applicable.



## Key Activities

### Current Period

- Continue weekly construction progress meetings.
- Continue coordination meetings with S440 and S445 Contractors.
- Install soldier piles for wall 2.
- Continue culvert installation at Des Moines Creek on S200th; excavation for foundations and drilled shafts complete. Install shoring for shaft caps.
- Install luminaire poles on 28th Ave S.
- Continue traffic signals S200th & 28<sup>th</sup>.
- Parking lot striped.

### Next Period

- Complete roadwork, sidewalk, and wall work.
- Complete signals and luminaire work on roadway.

## Closely Monitored Issues

- Culvert work schedule slippage due to differing site August 24.

## Cost Summary

Present Financial Status	Amount
S447 Contractor – Johansen Excavating, Inc	
Original Contract Value	\$8,426,400
Change Order Value	\$2,642,640
Current Contract Value	\$11,069,040
Total Actual Cost (Amount Billed)	\$9,716,702
Financial Percent Complete:	87.8%
Physical Percent Complete:	88%
Authorized Contingency	\$2,642,640
Contingency Drawdown	\$2,642,640
Contingency Index*	1



Demolition of curbs and gutter at S. 200th St. corner.

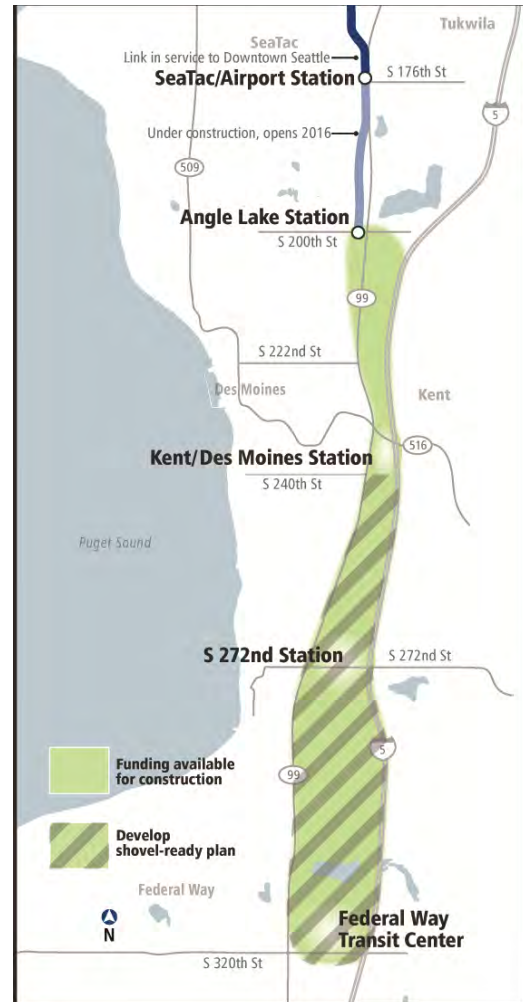
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## Scope

The Federal Way Link Extension includes alternatives analysis, environmental work and conceptual engineering for an extension of Link Light Rail from S. 200<sup>th</sup> St. in SeaTac to the Federal Way Transit Center. Preliminary engineering will be performed for the segment from S. 200<sup>th</sup> St. to Kent/Des Moines (in the vicinity of Highline College) and to the Federal Way Transit Center.

## Key Project Activities/Issues

- Completed Phase 1 work (Alternatives Analysis) in Sept. 2013.
- DEIS alternatives identified by the Board in Sept. 2013.
- Executed Phase 2 contract amendment with HDR for Conceptual Engineering and Draft EIS work in October 2013.
- Published Draft EIS on April 2015. Comment period ended May 26, 2015.
- Board identified a Preferred Alternative and approved Phase 3 contract amendment on July 23, 2015.
- Executed Phase 3 contract amendment with HDR for Final EIS and Preliminary Engineering on July 24, 2015.
- ST Board approved contract amendment in February 2016 to extend Preliminary Engineering from Kent/Des Moines to the Federal Way Transit Center.



Map of Federal Way Link Extension.

## Project Cost Summary

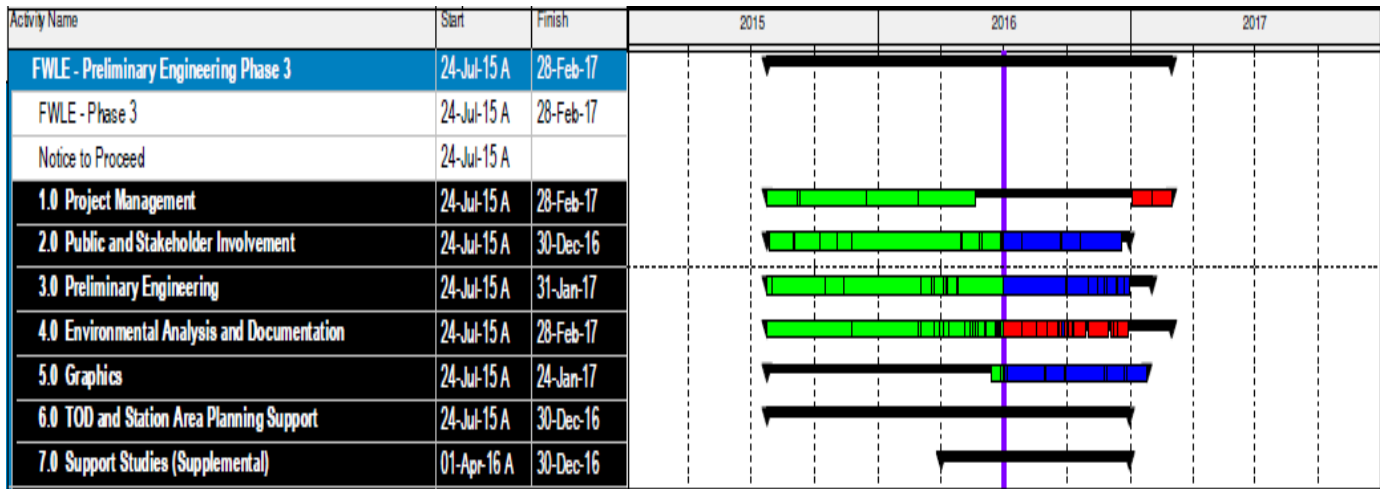
In July 2015, the Sound Transit Board identified the preferred alternative and station locations and approved the Federal Way Link Extension Phase 3 (PE and Final EIS) contract amendment.

The Federal Way Link Extension is currently funded through the completion of preliminary engineering (PE) and environmental documentation, with the exception of the segment from Kent/Des Moines to Federal Way, which is only funded through environmental documentation. Table (below) figures in millions.

Phase	Adopted Budget	Commitment to Date	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Budget Versus EFC
Administration	\$9.4	\$4.4	\$4.5	\$5.0	\$9.4	\$0.0
Preliminary Engineering	\$33.3	\$30.7	\$24.7	\$2.7	\$33.3	\$0.0
Third Parties	\$2.4	\$1.1	\$0.3	\$1.4	\$2.4	\$0.0
Right of Way	\$3.6	\$1.0	\$0.6	\$2.6	\$3.6	\$0.0
<b>Total</b>	<b>\$48.8</b>	<b>\$37.2</b>	<b>\$30.1</b>	<b>\$11.6</b>	<b>\$48.8</b>	<b>\$0.0</b>

## Project Schedule

The Final EIS and Preliminary Engineering was extended to February 2017.



## 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
	None to report.	

## Community Outreach

- Continued meeting with property owners regarding potential impacts of the project.

## Environmental

- None to report.

## Phase 3 Preliminary Engineering (PE)

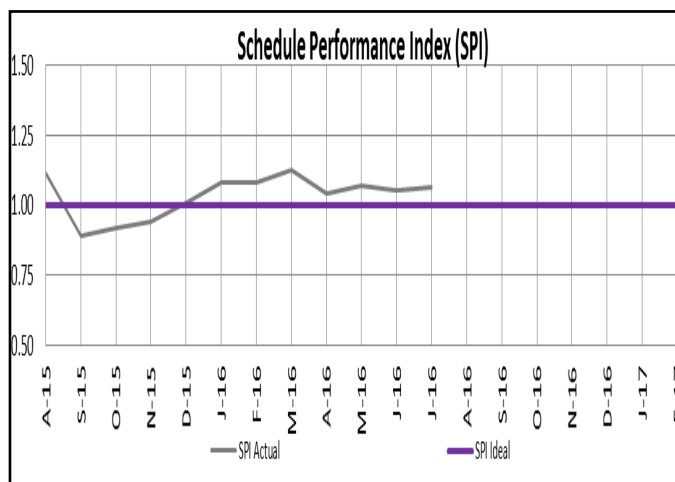
In July 2015, Sound Transit executed an amendment to the professional services agreement with HDR Engineering, Inc. for Phase 3 professional services, including completion of a Final Environmental Impact Statement (FEIS) using the preferred alternative and the other alternatives in the Draft EIS, preliminary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

- Continued engineering activities including preparation of Pre-Final PE submittal and associated third party design coordination.
- Continued development of the Final EIS. Current activities include review of administrative drafts by FTA.
- Continued coordination with potentially affected property owners including neighborhood briefings and one-on-one meetings.
- Initiated discussion of term sheets with affected jurisdictions to address code/permitting requirements and design review process for next phase of project development.

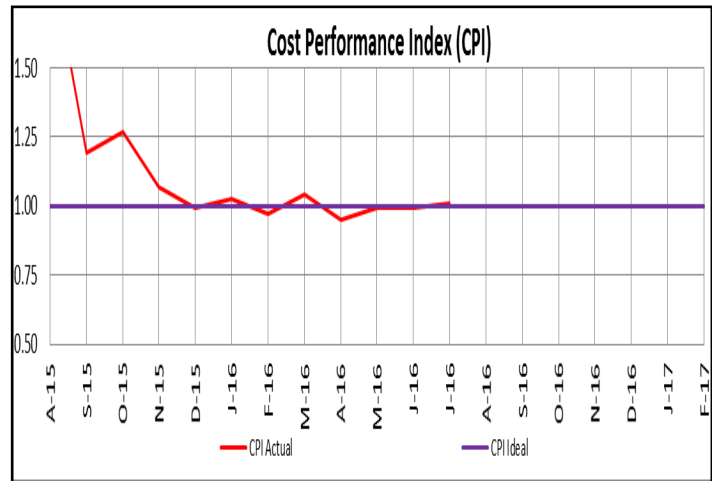
### Phase 3 Schedule Performance

The cumulative Schedule Performance Index (SPI) is 1.06 through July 2016, indicating the overall amount of work accomplished is more than planned. Review of the Consultant’s draft Phase 3 schedule indicates that completion of the FEIS document is currently on the critical path.



## Phase 3 Cost Performance

\$24.3M of the total contract amount, approximately 81%, has been spent through July 2016. Phase 3 expenditures totaled \$12.5M, approximately 68% of the Phase 3 contract total. The Phase 3 percent complete reported at 68%, with an earned value of \$12.5M. The cumulative Cost Performance Index (CPI) is 1.01, indicating costs are on track with work accomplished. Based on the current trend, the Phase 3 cost is expected to be on budget.



Phase 3 Performance	Previous Period	Current Period	Cumulative To Date
Amount Invoiced	\$11,377,473	\$1,108,285	\$12,485,758
% Spent	62%	6%	68%
Earned Value	\$11,319,748	\$1,256,468	\$12,576,216
% Complete	62%	6%	68%
<b>SPI</b>	<b>1.06</b>	<b>1.15</b>	<b>1.06</b>
<b>CPI</b>	<b>0.99</b>	<b>1.13</b>	<b>1.01</b>



# Link Light Rail Tacoma Link Extension

## Scope

**Limits:** City of Tacoma

**Alignment:** 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 1st Street, Division Avenue, and Martin Luther King Jr. Way.

**Stations:** Relocated Theater District Station, Stadium Way & 4th St, Stadium District, MLK Jr. Way and Division, MLK Jr. Way and 6TH Ave, MLK Jr. Way and S. 11th St., and MLK Jr. Way and S. 19th St.

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

**Budget:** \$33.02 Million Phase Gate 4 budget; excludes Construction (Year of Expenditure Dollars)

**Phase:** Final Design

**Const. Starts:** 2018



Map of Tacoma Link Extension.

## Key Project Activities

### Final Design

- Executed the contract for the Final Design consultant.

### Pre-Construction Services

- Continue procuring CMC contract in 3rd QTR 2016.

### Third Parties

- Advancing formal agreements with City of Tacoma and utility providers.

### Right of Way

- Continued early right of way property acquisition activities as they relate to the expansion of the Operations and Maintenance.

## Project Cost Summary

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	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
Administration	\$10.6	\$2.4	\$2.4	\$10.6	\$0.0
Preliminary Engineering	\$5.9	\$5.6	\$5.6	\$5.9	\$0.0
Final Design	\$10.8	\$0.0	\$0.0	\$10.8	\$0.0
Construction Services	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
3rd Party Agreements	\$0.5	\$0.0	\$0.0	\$0.5	\$0.0
Construction	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Vehicles	\$2.0	\$2.0	\$0.0	\$2.0	\$0.0
ROW	\$3.2	\$0.2	\$0.1	\$3.2	\$0.0
<b>Total</b>	<b>\$33.0</b>	<b>\$10.2</b>	<b>\$8.2</b>	<b>\$33.0</b>	<b>(\$0.0)</b>

### Cost Summary by SCC

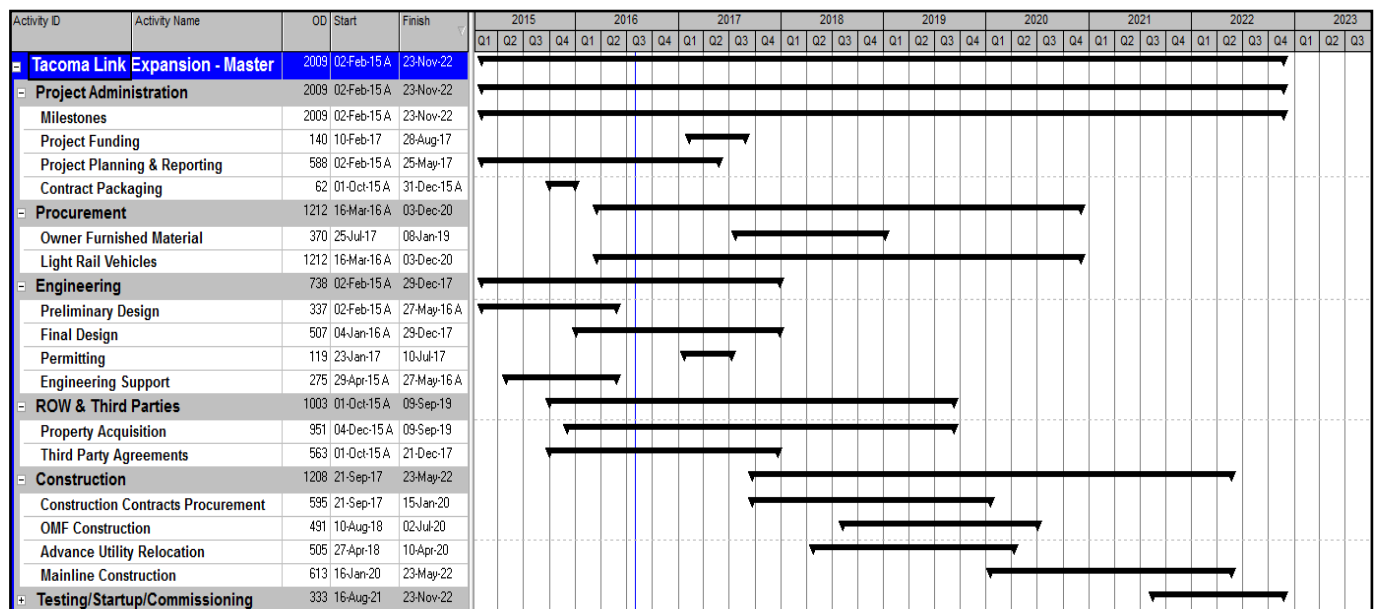
Project Elements by SCC	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 Guideway & Track	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
20 Stations	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
30 Support Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
50 Systems	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>Construction Subtotal (10 - 50)</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>
60 Row, Land	\$3.2	\$0.2	\$0.1	\$3.2	\$0.0
70 Vehicles (non-revenue)	\$2.0	\$2.0	\$0.0	\$2.0	\$0.0
80 Professional Services	\$27.8	\$8.0	\$8.0	\$27.8	\$0.0
90 Unallocated Contingency	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>Total (10 - 90)</b>	<b>\$33.0</b>	<b>\$10.2</b>	<b>\$8.2</b>	<b>\$33.0</b>	<b>(\$0.0)</b>

## Risk Management

The Tacoma Link Risk and Contingency Management Plan (RCMP) will be 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 Tacoma Link Quarterly Risk Review Meeting is targeted for December 2016.

## Project Schedule

NTP for the Final Design is scheduled for the end of August 2016. ST is also working to finalize the Work Order with the City of Tacoma for support of the project as well as amending the Right of Use Agreement. The geotechnical was received and is now being reviewed. ROW is currently working on the acquisition of the property for the new OMF, and developing a schedule for a permanent easement for the TPSS at the MLK Way Police Station.



## Sound Transit Board Actions

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

Motion Number	Description	Date
M2016-77	Execute a contract with HDR Engineering, Inc. to provide Civil and Systems final design services for the Tacoma Link Expansion in the amount of \$7,593,758, with a 5% contingency for a total authorized contract amount not to exceed \$7,973,446.0	Jul 28

## Community Outreach

- Hosted public meetings with regards to platform locations. Met with Stadium Business District to discuss final platform location.
- Emailed notification of workshops to the Tacoma Link distribution list.

## Environmental

- None to report.

## Phase 3 Preliminary Engineering

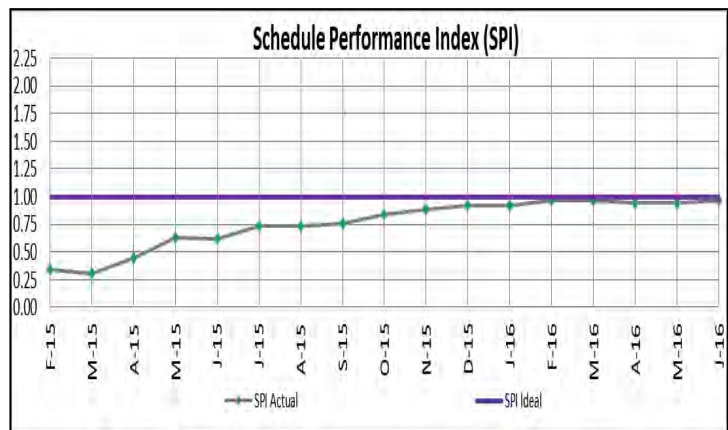
In February 2015 Sound Transit executed an amendment to the professional services agreement with CH2M Hill, Inc. for Phase 3 professional services, including preliminary engineering and environmental work.

### Phase 3 Key Activities

- Updated design criteria and various preliminary engineering technical memos.
- Continued station Refinement public outreach efforts.

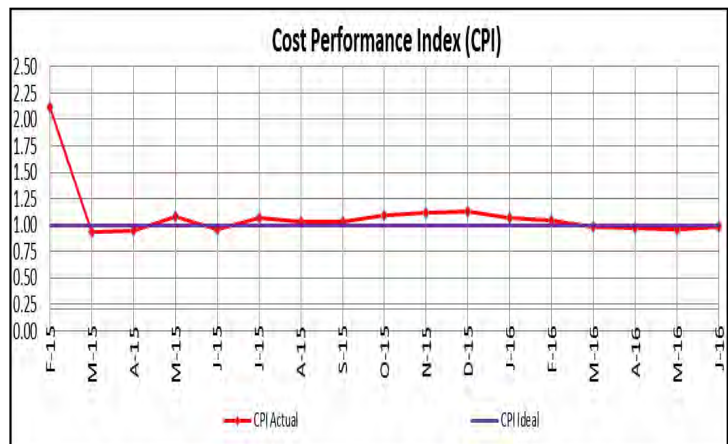
### Phase 3 Schedule Performance

The cumulative Schedule Performance Index (SPI) for the Phase 3 contract is 0.96 through June, indicating overall the work performed to date is close to the amount originally planned. Consistent with the original Phase 3 schedule, planned values for the project ended in September. A change order was executed to the contract and a revised cash flow was established with this months reporting. The Phase 3 work is nearly finished (98% complete overall), and the overall SPI will trend toward a value of 1.00 upon completion.



### Phase 3 Cost Performance

\$5.35M of the total contract amount, approximately 98%, has been spent through June. Phase 3 contract expenditures through July totaled \$2.5 M, approximately 97% of the Phase 3 contract total. The Phase 3 contract percent complete reported at the end of June is 95%, with an earned value of \$2.4 M. The cumulative Cost Performance Index (CPI) through June is .99, indicating costs are slightly higher than the budget planned for work accomplished. The monthly CPI for June was significantly high at 4.37, driven by expenditures to complete work related to Station Platform Refinements and DAHP coordination. Our independent Estimate at Completion indicates that the consultant will finish the current Phase 3 scope of work over budget. A recent EAC from the consultant confirmed that the project is still on track to complete within the current budget.



Phase 3 Performance	Previous period	Current Period	Cumulative To-Date
Amount Invoiced	\$2,436,278	\$33,266	\$2,468,545
% Spent	96%	1%	97%
Earned Value	\$2,325,398	\$99,262	\$2,424,660
% Complete	93%	2%	95%
<b>SPI</b>	<b>0.94</b>	<b>2.68</b>	<b>0.96</b>
<b>CPI</b>	<b>0.95</b>	<b>4.37</b>	<b>0.99</b>



## Project Summary

**Scope:** The Link Operations and Maintenance Facility: East (OMFE) 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 Million (Baselined July 2016)

**Schedule:** Project completion December 2020

**Phase:** Proceed to Construction

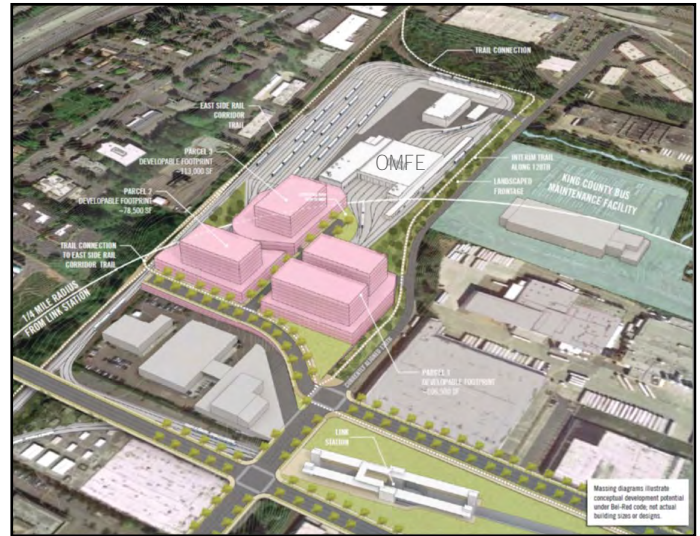


Illustration of OMFE site

## Key Activities

- Weekly technical meetings are being conducted by the Consultant team to develop the Project Requirements.
- Consultant continued work on procurement RFP documents (final version). Reviews with ST, Bellevue and King County continues.
- Selected three top-ranked Design-Build teams to receive the RFP.
- Environmental permit work underway for applications.
- DBPM RFQ document was issued mid-June and SOQ were received in July.
- Meetings with Bellevue regarding TOD continue – Implementation Agreement approved by ST Board and Bellevue Council.
- Met with City of Bellevue to discuss permit process and early permits.
- Project baseline and Phase Gate 5 & 6 materials approved at Capital Committee and ST Board.

## Closely Monitored Issues

- Property acquisition activities continue, however there are challenges with initial appraisals, affecting schedule slippage and potentially cause availability of some properties into 2018.

## Project Cost Summary

In July 2016, the Sound Transit Board authorized the project to be baselined (Gate 5) and advance to construction (Gate 6). This increased the Adopted Capital Budget for the OMFE from \$133.6M to \$449.2M. The OMFE 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	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
Administration	\$17.6	\$17.6	\$17.6	\$1.8	\$17.6	\$0.0
Preliminary Engineering	\$9.5	\$9.5	\$9.5	\$8.9	\$9.5	\$0.0
Final Design	\$0.4	\$0.4	\$0.4	\$0.0	\$0.4	\$0.0
Construction Services	\$19.3	\$19.3	\$19.3	\$0.0	\$19.3	\$0.0
3rd Party Agreements	\$3.1	\$3.1	\$3.1	\$0.0	\$3.1	\$0.0
Construction	\$264.8	\$264.8	\$264.8	\$0.0	\$264.8	\$0.0
ROW	\$134.5	\$134.5	\$134.5	\$24.7	\$134.5	\$0.0
<b>Total</b>	<b>\$449.2</b>	<b>\$449.2</b>	<b>\$449.2</b>	<b>\$35.4</b>	<b>\$449.2</b>	<b>\$0.0</b>

The Estimated Final Cost (EFC) for the project as of this reporting period is \$449.2M, which is equal to the current project budget. This period, approximately \$0.4M was incurred, of which \$0.3M was for PE services. The remaining expenditures were for right-of-way, staff and other direct charges.

The Estimated Final Cost (EFC) reflects the current adopted budget values due to project baselined this period. ROW and Professional Services categories are active at this stage of the project.

### Cost Summary by SCC

Project Elements by Phase	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 Guideway & Track Elements	\$37.9	\$37.9	\$0.0	\$0.0	\$37.9	\$0.0
20 Stations	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
30 Support Facilities: Yards, Shops	\$104.8	\$104.8	\$0.0	\$0.0	\$104.8	\$0.0
40 Sitework & Special Conditions	\$43.6	\$43.6	\$0.0	\$0.0	\$43.6	\$0.0
50 Systems	\$43.0	\$43.0	\$0.0	\$0.0	\$43.0	\$0.0
<b>Construction Subtotal (SCC 10-50)</b>	<b>\$229.3</b>	<b>\$229.3</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$229.3</b>	<b>\$0.0</b>
60 Row, Land, Improvements	\$134.5	\$134.5	\$24.7	\$23.3	\$134.5	\$0.0
70 Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
80 Professional Services	\$71.6	\$71.6	\$10.7	\$9.9	\$71.6	\$0.0
90 Unallocated Contingency	\$13.8	\$13.8	\$0.0	\$0.0	\$13.8	\$0.0
<b>Project Total (SCC 10-90)</b>	<b>\$449.2</b>	<b>\$449.2</b>	<b>\$35.4</b>	<b>\$33.2</b>	<b>\$449.2</b>	<b>(\$0.0)</b>



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## Cost Contingency Management

This period the project was baselined and established a Total Contingency of \$93.2M which is 99.5% of project work remaining. Detailed information is provided below.

*Design Allowance (DA)* – The baseline DA of \$25.3M was established this period.

*Allocated Contingency (AC)* – The baseline AC amount of \$54.1M was established this period.

*Unallocated Contingency (UAC)* – The baseline UAC amount of \$13.8M was established this period.

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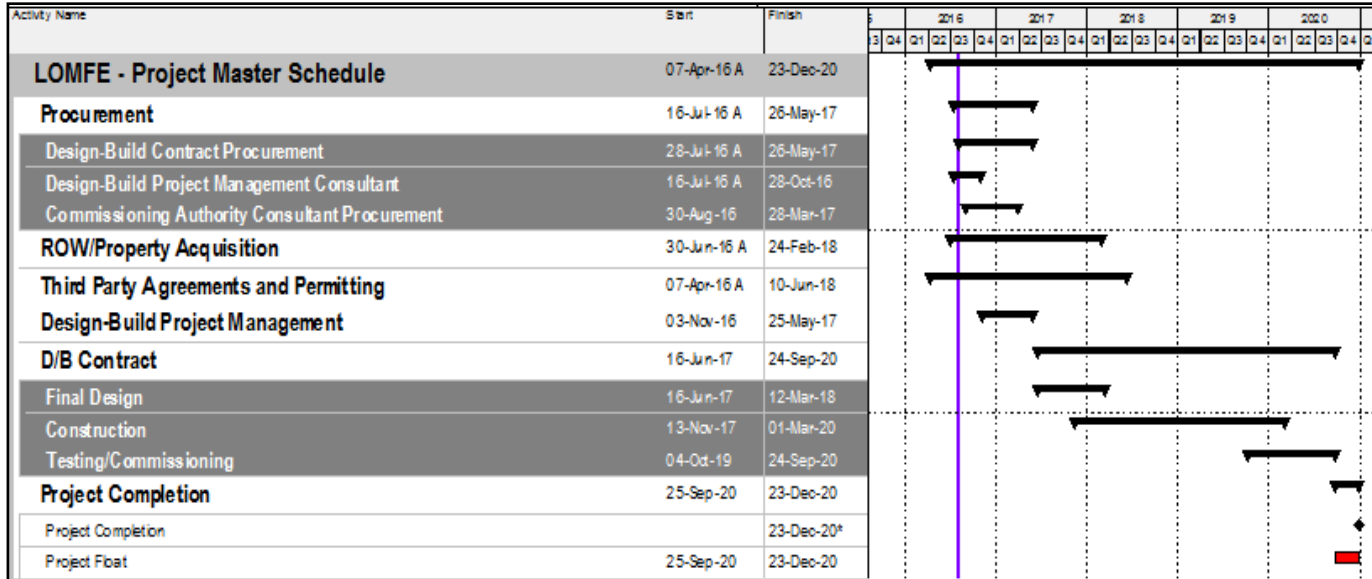
## Risk Management

The Project has a Risk Register and is actively managing risks. The following are the top five risks:

- Volatility in property values around the Bel-Red area.
- City of Bellevue requesting additional site improvements not included in the agreements.
- Authorities Having Jurisdiction not fully communicating all of their requirements to Sound Transit.
- Changes in storm water facility estimate assumptions by DB contractor.
- Designing and procuring special track-work.

## Project Schedule

The project schedule is presented below. The OMFE project was baselined in July. The RFP for the design build contractor is expected to be issued in August 2016. Property acquisitions are on schedule to be completed in late 2017 or early 2018, in time for construction to start as planned.



## Critical Path Analysis

The project critical path this period is the procurement for the Design-Build contractor. The current conceptual construction plan shows a critical path through the foundation design and subsequently the construction of the LRV storage yard.

### Sound Transit Board Actions

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

Motion Number	Description	Date
R2016-18	Resolution (1) Adopting the Operations and Maintenance Satellite Facility baseline scope, schedule and budget by (1) establishing December 2020 as the project completion milestone, (B) establishing a baseline budget of \$449,220,000 for the project, and © decreasing the Adopted 2016 Annual Budget from \$49,853,439 to \$26,052,866; (2) approving passage through Gates 5 and 6; (3) approving Link Operations & Maintenance Facility: East as the facility name.	Jul 28
M2016-72	Execute up to four stipend agreements with contractors selected to submit proposals for a design-build contract for the Operations & Maintenance Satellite Facility for a total authorized amount not to exceed \$2,000,000, contingent upon Board approval of Resolution NO. 2016-18 adopting the Project's baseline scope, schedule, and budget.	Jul 14
M2016-73	Execute an Implementation Agreement with the City of Bellevue regarding the Link O&M Satellite Facility.	Jul 28

### Environmental

- None to report.

### Community Outreach

- None to report.

## Phase 2 Preliminary Engineering and FEIS

Sound Transit executed a professional services agreement with Huitt-Zollars, Inc. for civil engineering and architectural design services and issued NTP for Phase 2, Preliminary Engineering and FEIS for the Link Operations and Maintenance Facility: East (OMFE) in September 2014.

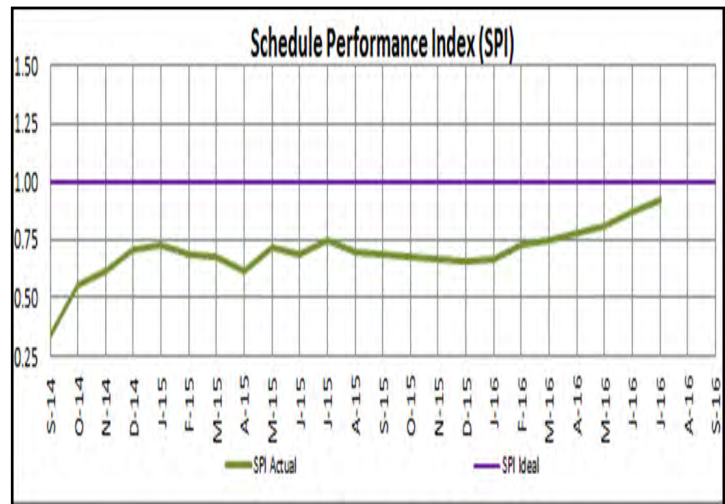
### Phase 2 Key Activities

- TOD market study and development essentially complete.
- Consultant continued work on the procurement documents – under final ST review
- Additional geotechnical borings completed in the field. Lab work analysis continues.
- Drafting agreement with King County regarding mainline sewer replacement - continues
- Met with PSE regarding service substation arrangement and PSE reconfiguration timing.
- Project costs have been updated through Memo building upon the July 2015 PE estimate.
- Program documents being developed for all OMFE spaces and equipment working closely with Operations and Facilities.
- ST facilities staff reviewing program requirements.
- ST Board adopted baseline scope, schedule and budget in July 2016.

### Phase 2 Schedule Performance

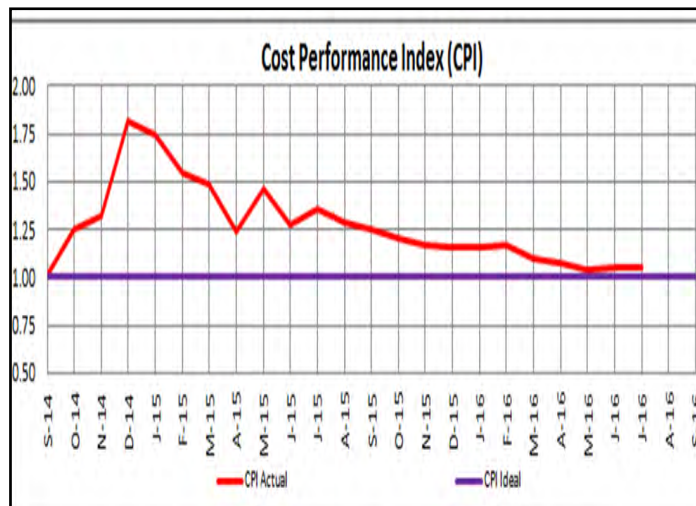
The cumulative Schedule Performance Index (SPI) trends at 0.92 through July 2016, which means that cumulative work accomplished is less than work planned.

Change Order 008 incorporated Phase 2A of the project on February 2016. The remaining Phase 2 scope has been re-negotiated to reflect the recent Design Build Project Delivery decision. The consultant has been directed to focus efforts on delivering Design Build bridging documents to help inform the procurement of the final design build team starting February 2016 as Phase 2A.



### Phase 2 Cost Performance

\$4.6M of the total Phase 2 contract amount, approximately 87%, was spent through July 2016. The Phase 2 percent complete is 92%, with an earned value of \$4.9M. The cumulative Cost Performance Index (CPI) is 1.06, meaning that expenditures are less than the earned value.



Phase 2 Performance	Previous Period	Current Period	Cumulative To Date
Amount Invoiced	\$4,377,352	\$259,407 *	\$4,636,759
% Spent	82%	5%	87%
Earned Value	\$4,601,152	\$292,541	\$4,893,693
% Complete	86%	6%	92%
<b>SPI</b>	<b>0.86</b>	<b>18.04</b>	<b>0.92</b>
<b>CPI</b>	<b>1.05</b>	<b>1.13</b>	<b>1.06</b>

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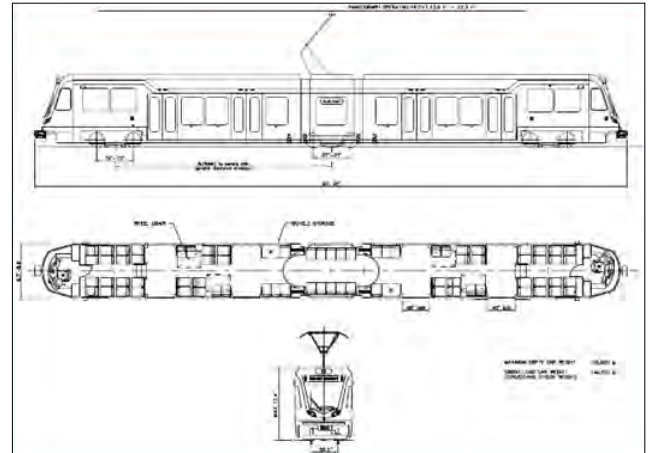


## Project Summary

**Scope:** Design, manufacturing, assembly, inspection, testing and delivery of 122 low floor light rail vehicles for service requirements of Northgate, East Link and Lynnwood Link Extensions.

**Budget:** \$733 Million (Baseline September 2015)

**Schedule:** Project completion 3rd QTR 2024



## Key Activities

- Notice of Intent to Award contract was issued to Siemens at the end of July. The Buy America audit is currently being conducted on their proposal; project is on schedule to meet target NTP date of October 10, 2016.

## Project Cost Summary

The ST2 LRV Fleet Expansion 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. (*Totals may not equal column sums due to rounding of line entries.*)

### Cost Summary by Phase

Project Phase	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget Vs. EFC
Administration	\$4.7	\$4.7	\$0.1	\$0.1	\$4.7	\$0.0
Construction Services	\$14.1	\$14.1	\$4.8	\$1.5	\$14.1	\$0.0
Vehicles	\$714.2	\$714.2	\$0.0	\$0.0	\$714.2	\$0.0
<b>Total</b>	<b>\$733.0</b>	<b>\$733.0</b>	<b>\$4.9</b>	<b>\$1.6</b>	<b>\$733.0</b>	<b>\$0.0</b>

### Cost Summary by SCC

SCC Element	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget 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	\$696.7	\$696.7	\$4.8	\$1.5	\$696.7	\$0.0
80 Professional Services	\$4.5	\$4.5	\$0.1	\$0.1	\$4.5	\$0.0
90 Contingency	\$31.7	\$31.7	\$0.0	\$0.0	\$31.7	\$0.0
Capital Total (SCC 10-90)	<b>\$733.0</b>	<b>\$733.0</b>	<b>\$4.9</b>	<b>\$1.6</b>	<b>\$733.0</b>	<b>\$0.0</b>

## Cost Contingency Management

### Contingency Status

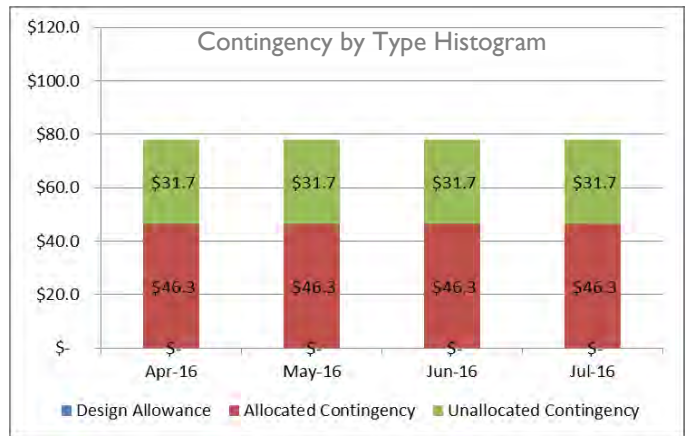
The project's baseline budget, which was approved by the Sound Transit Board in September 2015 and includes a total of \$78.0M of Total Contingency. Overall contingency is currently 10.7% of remaining work.

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

*Allocated Contingency* – The project baseline contains \$46.3M of allocated contingency. There was no change in allocated contingency this period.

*Unallocated Contingency* – The project baseline contains \$31.7M of unallocated contingency. There was no change in unallocated contingency this period.

Contingency Status	Baseline		Current	
	Amount	% of Total	Amount	% of Work Remaining
Design Allowance	\$ -	0.0%	\$ -	0.0%
Allocated Contingency	\$ 46.3	6.4%	\$ 46.3	6.3%
Unallocated Contingency	\$ 31.7	4.3%	\$ 31.7	4.3%
<b>Total</b>	<b>\$ 78.0</b>	<b>10.7%</b>	<b>\$ 78.0</b>	<b>10.7%</b>



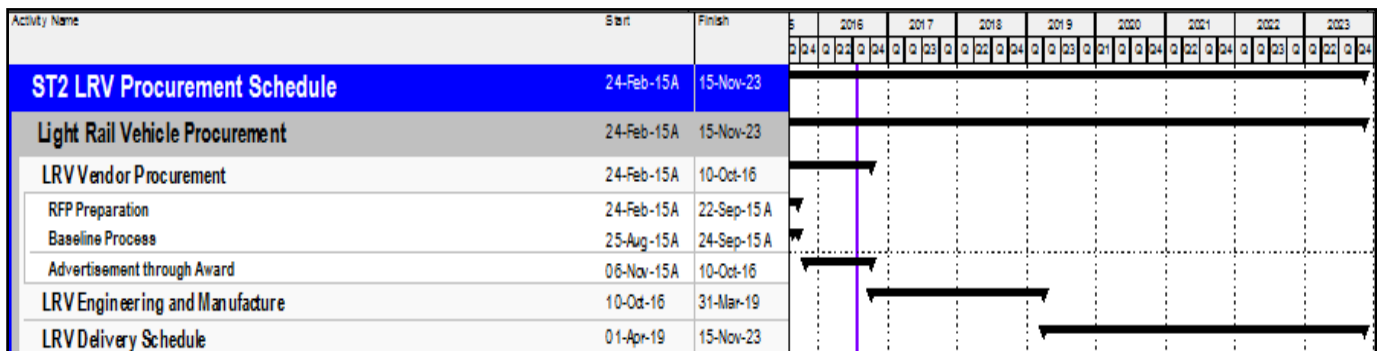
## Risk Management

The ST2 LRV Expansion project currently has 24 active risks that are being monitored. The top five risks are as follows:

- Buy America Requirements
- Sub-Supplier Performance Issues
- Commissioning Requirements
- Bid Selection Issues
- Availabilities of Spare Parts

## Project Schedule

The ST2 LRV Expansion project schedule is shown below.



## Project Staffing – Link Light Rail Program – June 2016

Staffing variance reported in the following section is relative to the April 2016 Agency Staffing Plan (Version 6). During this period, the following positions were filled to support the Link capital program:

Position	Project Assignment	Planned Hire Date
Construction Manager	Northgate Link Extension	October 2015
Real Property Coordinator	Real Property	2016 Attrition*
Sr. Real Property Agent	East Link Extension	March 2016
Principal Construction Manager	Lynnwood Link Extension	Reassignment

\*Attrition resulting from internal promotion.

Recruiting is on-going for the following design, engineering and construction management staff.

Position	Project Assignment	Planned Hire Date
Construction Manager	Systems	April 2014
Architect	East Link Extension	2014 Attrition
Sr. Project Manager	O&M Facility: East	2015 Reclass.
Sr. Structural Engineer	Link	2016 Attrition*
Deputy Director	Civil & Structural Engineering	2016 Attrition*
Sr. Civil Engineer	East Link Extension	2016 Attrition*
Project Control Specialist	East Link Extension	2016 Attrition*
Community Outreach Specialist	East Link Extension	2016 Attrition*
Community Outreach Specialist	South Corridor	2016 Attrition
Property Management Specialist	Real Property	2016 Attrition
Document Control Coordinator	Federal Way Link Extension	2016 Attrition
Sr. Design Technology Specialist	Civil and Structural Engineering	2016 Attrition
Deputy Director	Systems Engin. and Integration	2016 Attrition
Sr. Systems Engineer	LRV Procurement and Testing	2016 Attrition
Director	Architecture and Art	2016 Attrition
Civil Engineer	Right-of-Way	2016 Attrition
Deputy Director	Real Property	2016 Attrition
Deputy Project Director	Lynnwood Link	January 2016
Principal Construction Manager	Northgate Link Extension	2016 Reassignment
Construction Manager	Federal Way Link Extension	March 2016
Assistant Permit Administrator	Fed. Way/Lynnwood Link Extensions	April 2016
Deputy Executive Director	Project Management	April 2016
Construction Manager	East Link Extension	June 2016

\*Attrition resulting from internal promotion.

## Project Staffing – Link Light Rail Program continued

There were 606.3 (108% 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 June. Staffing for the each of the Link Extensions with the exception of the Lynnwood and the Tacoma Link Extensions was above plan.

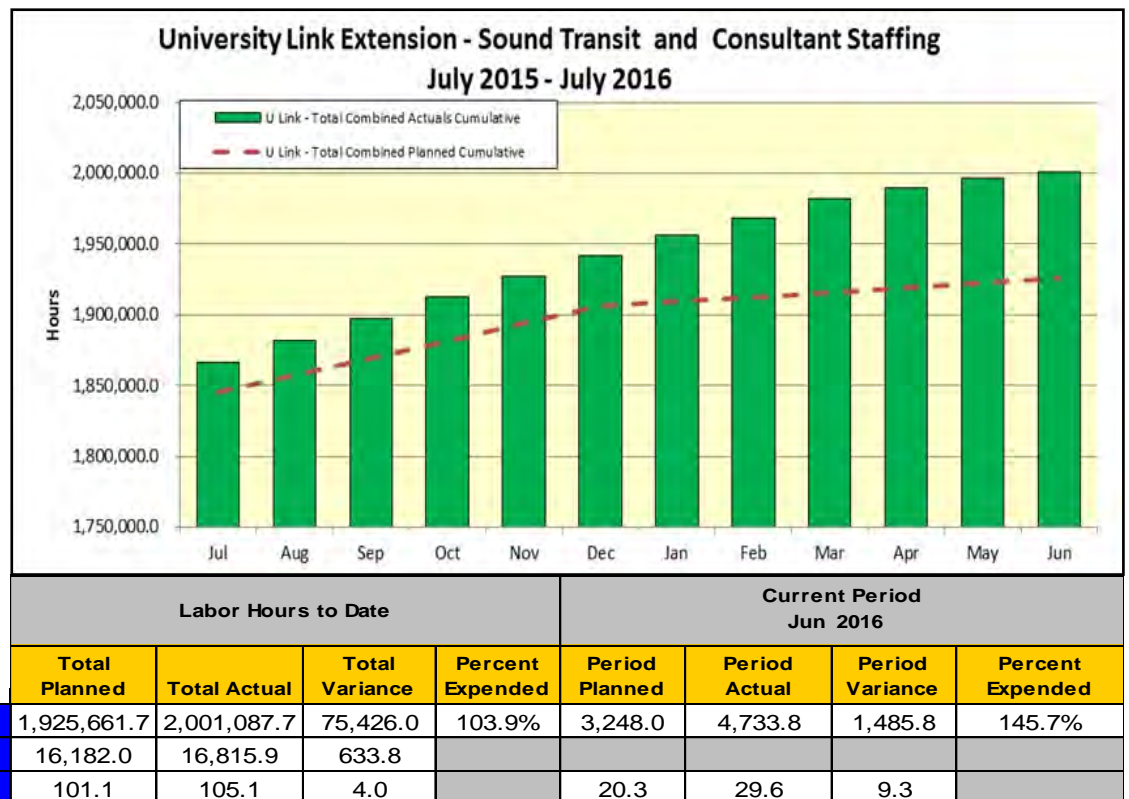
During plan development it was assumed that final design for Lynnwood would begin in 4th QTR 2015 and for the Tacoma Link Extension, 1st QTR 2016; final design the Lynnwood Link Extension began in May. The design of the Tacoma Link Extension will begin in 3rd QTR 2016. Staffing variance to plan for the month and year to date summary by project follows.

Project	June 2016 - Staffing Plan Variance Summary								Total (YTD)			
	Consultant Staff				Sound Transit Staff							
	FTE		Variance		FTE		Variance		FTE		Variance	
	Planned	Actual	FTE	% of Plan	Planned	Actual	FTE	% of Plan	Planned	Actual	FTE	% of Plan
University Link Extension	0.0	10.7	11		20.3	18.9	-1	93%	20.3	64.4	44.1	317%
Northgate Link Extension	73.9	85.5	12	116%	47.7	40.8	-7	85%	121.6	130.0	8.4	107%
South 200th Extension	9.4	24.5	15	261%	17.4	25.7	8	148%	26.8	45.1	18.3	168%
East Link Eextension	132.4	208.4	76	157%	79.7	72.4	-7	91%	212.1	278.3	66.2	131%
Lynnwood Link Extension	115.0	81.1	-34	71%	40.3	30.9	-9	77%	155.3	53.6	-101.8	34%
Tacoma Link Expansion	11.0	2.5	-9	23%	13.0	5.0	-8	38%	24.0	10.1	-13.9	42%
<b>Total</b>	<b>341.7</b>	<b>412.7</b>	<b>71</b>	<b>121%</b>	<b>218.5</b>	<b>193.7</b>	<b>-24.8</b>	<b>89%</b>	<b>560.1</b>	<b>581.5</b>	<b>21.3</b>	<b>104%</b>

## University Link Extension Staffing

### Total Internal and External Staffing – University Link Extension

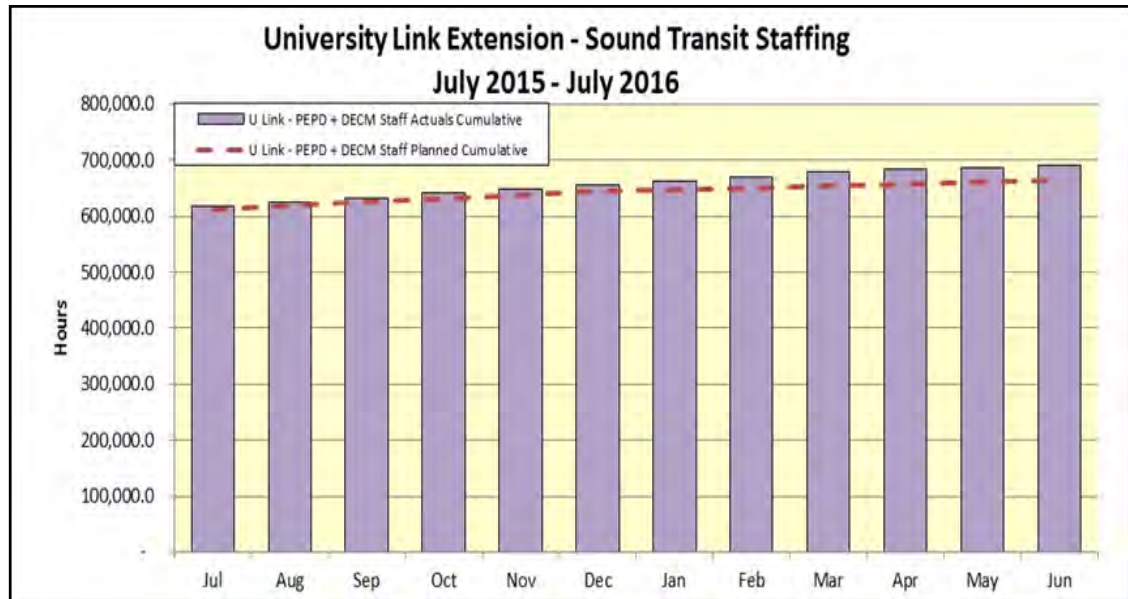
There were 29.6 FTE assigned to the University Link Extension in June including 10.7 consultant and 18.9 internal FTE. As was expected with the wrapping up of operational work arounds, staffing for the month decreased 25% (9.7 FTE) from May. Consultant staffing was well ahead of plan as the 2016 Staffing Plan assumed that all construction and system testing would be completed in late 2015 and did not account for systems testing performed in 2016 and on-going resolution of punch list items. Staffing for the University Link Extension was 146% of plan. Year-to-date staffing (64.4 FTE/mo.) is trending 217% (44.1 FTE/mo.) above plan. Cumulatively, since August 2006, average monthly project staffing is within 4% (4 FTE/mo.) of plan.



## University Link Extension Staffing

### Internal Resource Commitments to University Link Extension

There were 18.9 internal FTE assigned to the University Link Extension in June. Internal staffing was 6.7% (1.4 FTE) below plan and 13% (2.4 FTE) below May staffing. Cumulatively, since August 2006, average monthly internal staffing is within 4% (1.4 FTE/mo.) of plan.



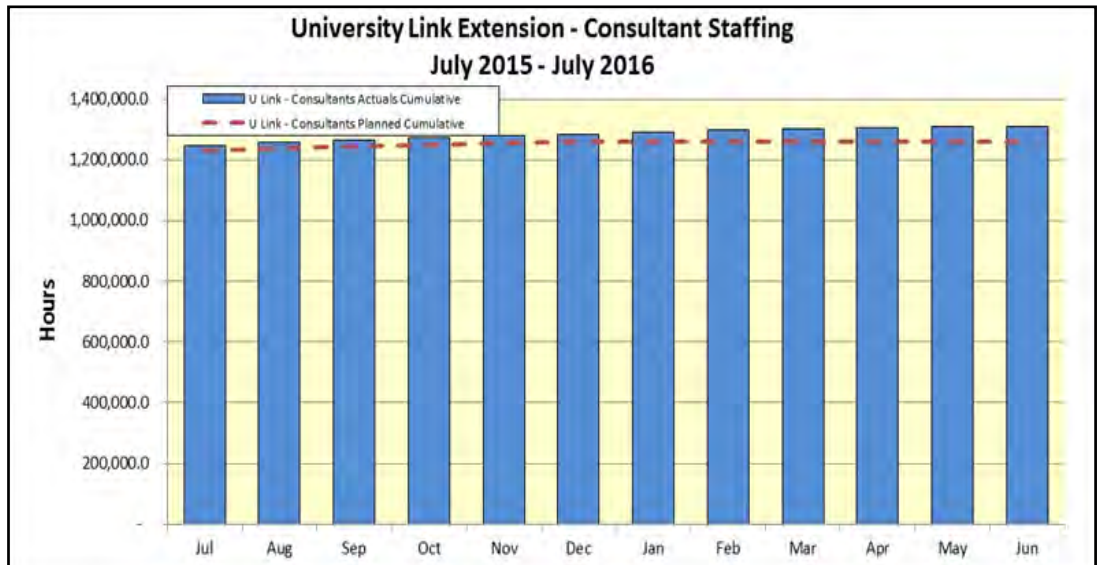
	Labor Hours to Date				Current Period Jun 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	663,891.6	690,052.3	26,160.7	103.9%	3,248.0	3,026.5	-221.5	93.2%
<b>Monthly Average</b>	5,578.9	5,798.8	219.8					
<b>Monthly FTE</b>	34.9	36.2	1.4		20.3	18.9	-1.4	



## University Link Extension Staffing

### Consultant Resource Commitments to University Link Extension

During June 10.7 consultant FTE were assigned to the University Link Extension. The 2016 Staffing Plan did not account for consultant support in 2016 and beyond; June consultant staffing was 40% (7.3 FTE) below May staffing. Cumulatively, since August 2006, average monthly consultant staffing is trending within 4% (2.6 FTE/mo.) of plan.



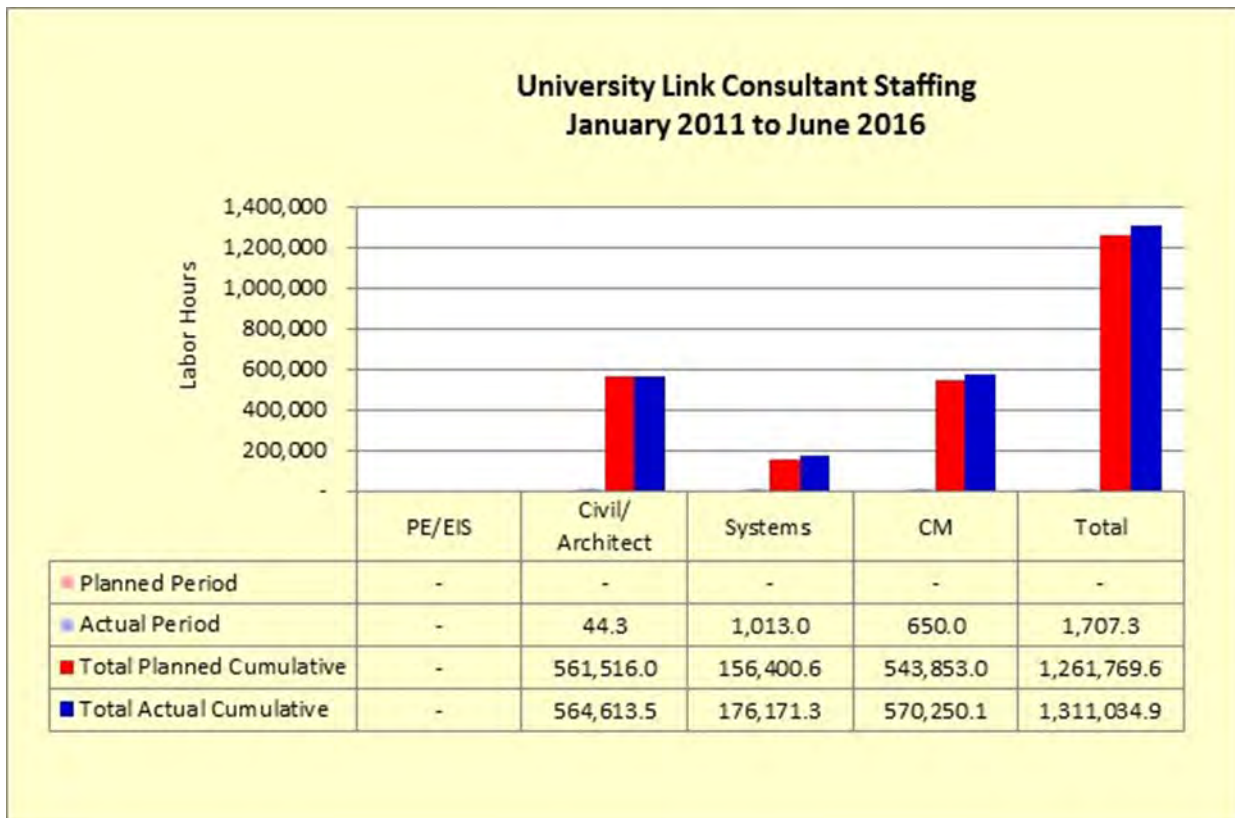
	Labor Hours to Date				Current Period Jun 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	1,261,770.1	1,311,035.4	49,265.4	103.9%	0.0	1,707.3	1,707.3	
<b>Monthly Average</b>	10,603.1	11,017.1	414.0					
<b>Monthly FTE</b>	66.3	68.9	2.6		0.0	10.7	10.7	

## University Link Extension Staffing

### Consultant Resource Commitments to University Link Extension, continued

Consultant utilization by discipline for the University Link Extension since January 2011 is illustrated below.

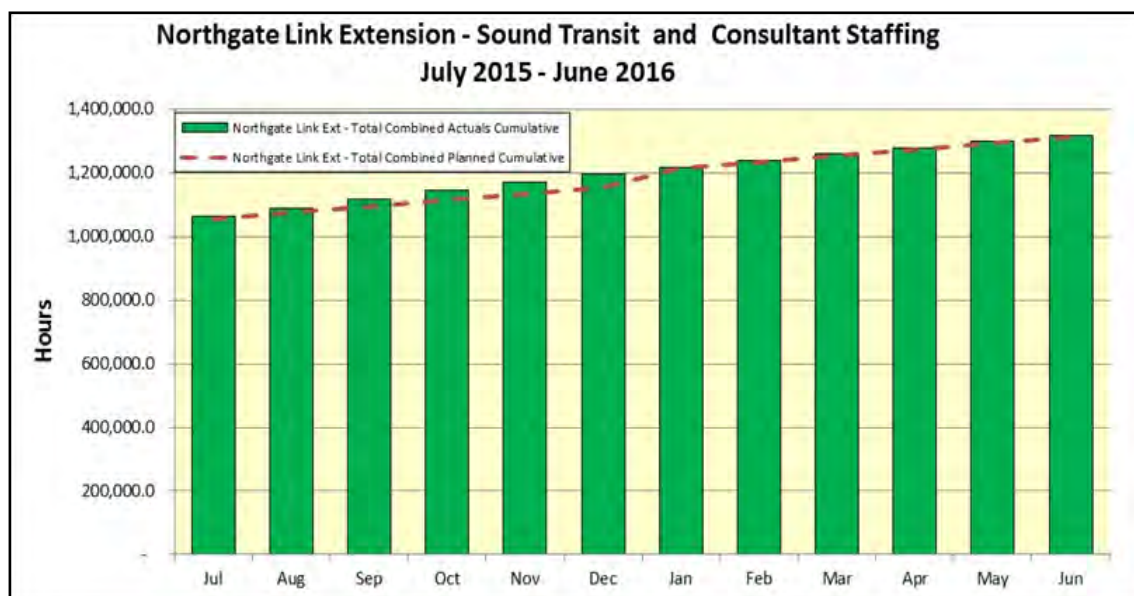
In June, civil engineering consultant staffing (0.3 FTE) for the University Link Extension accounted for approximately 3% of consultant staffing with the remainder providing systems (58% 6.3 FTE) and construction management (38% 4.1 FTE) support. Cumulative staffing since August 2006 for civil and systems consultants are trending 0.55% (0.2 FTE/mo.), and 12.6% (1 FTE/mo.) above plan respectively. Cumulative construction management consultant staffing is trending 4.9% (1.1 FTE/mo.) above plan.



## Northgate Link Extension Staffing

### Total Internal and External Staffing – Northgate Link Extension

During June, 40.8 internal and 85.5 consultant FTE were assigned to the Northgate Link Extension. This is consistent with staffing in May and is 4% (4.6 FTE) above plan; year to date staffing of 130 FTE/mo. is trending 7% (8.4 FTE/mo.) above plan. Cumulatively since January 2011 average monthly staffing is trending with plan.

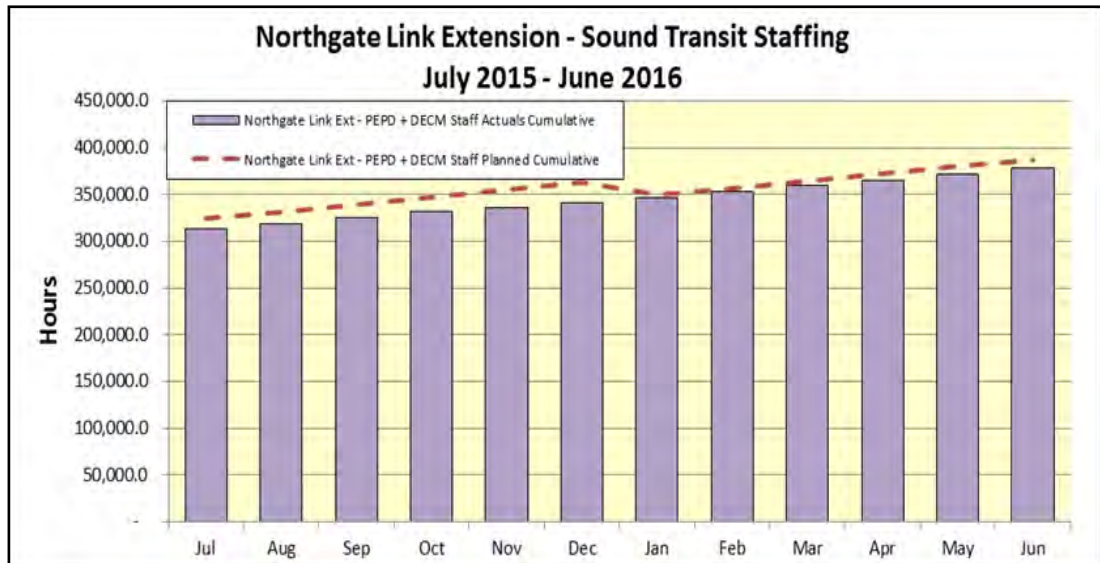


	Labor Hours Jan 2011 - Jun 2016				Current Period Jun 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	1,311,811.9	1,318,552.4	6,740.4	100.5%	19,460.8	20,204.4	743.6	103.8%
<b>Monthly Average</b>	19,875.9	19,978.1	102.1					
<b>Monthly FTE</b>	124.2	124.9	0.6		121.6	126.3	4.6	

## Northgate Link Extension Staffing

### Internal Resource Commitments to Northgate Link Extension

Internal staffing in June (40.8 FTE) increased 5% (1.9 FTE) from May and was 15% (6.9 FTE) below plan. Cumulatively, since January 2011, average monthly internal staffing (35.7 FTE/mo. is trending within 3% of plan.



	Labor Hours Jan 2011 - Jun 2016				Current Period Jun 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	387,237.9	377,558.0	-9,679.9	97.5%	7,636.8	6,525.3	-1,111.5	85.4%
<b>Monthly Average</b>	5,867.2	5,720.6	-146.7					
<b>Monthly FTE</b>	36.7	35.8	-0.9		47.7	40.8	-6.9	

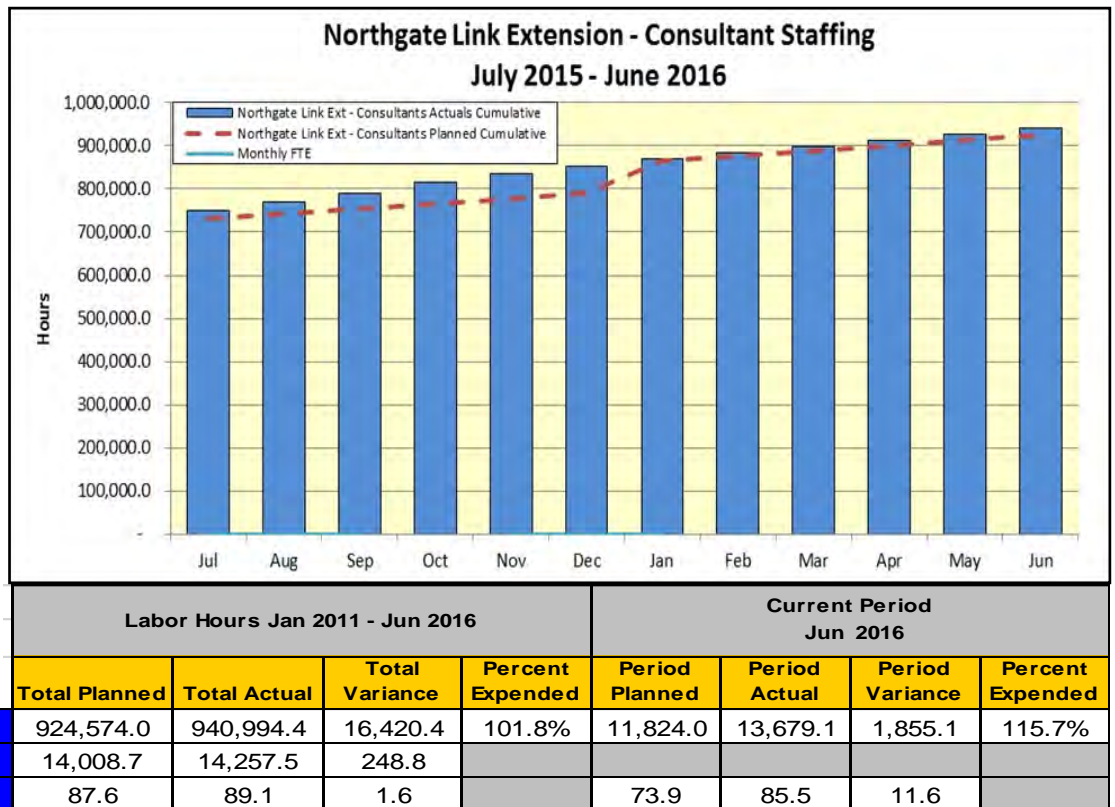
# Link Light Rail Staffing Report



## Northgate Link Extension Staffing

### Consultant Resource Commitments to Northgate Link Extension

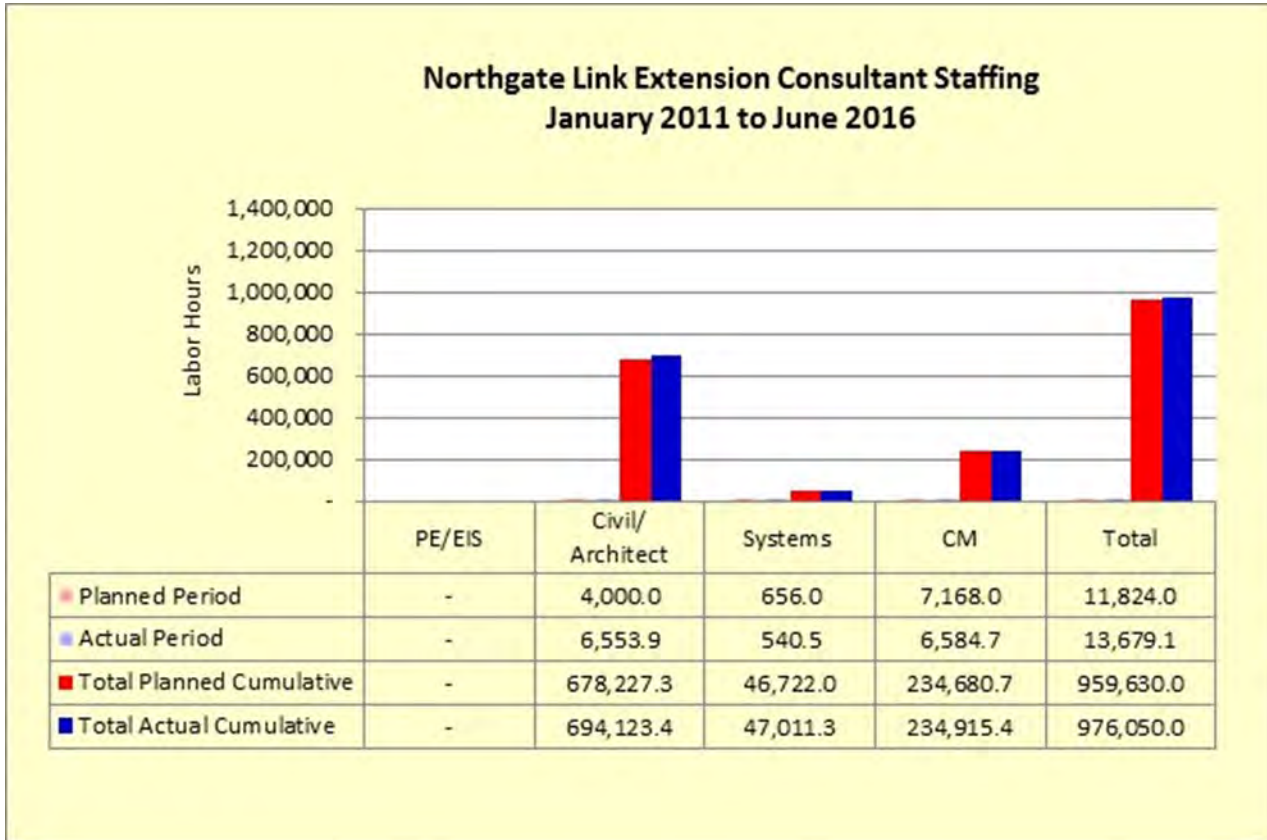
In June 85.5 consultant FTE were assigned to the Northgate Link Extension; consultant staffing was above plan by 16% (11.6 FTE) and was 1% (0.9 FTE) below May staffing. Cumulatively, since January 2011, average monthly consultant utilization (89.1 FTE/mo.) is trending within 2% of plan.





## Northgate Link Extension Staffing

### Consultant Resource Commitments to Northgate Link Extension



Consultant utilization by discipline follows:

- Civil/architecture consultant utilization in June (41 FTE) was 10% (3.8 FTE) above May staffing and was 64% (16 FTE) above plan. Cumulatively since January 2011, average civil engineering/architecture consultant staffing of 65.7 FTE/mo. is trending within 2% of plan.
- Systems consultant utilization (3.4 FTE) was 34% (1.7 FTE) below May and was 18% (0.7 FTE) below plan. Since January 2011, average monthly Systems consultant staffing is trending with plan.
- CM consultant staffing in June (41.2 FTE) was 6.6% (2.9 FTE) below May staffing and was 8% (3.6 FTE) below plan. Cumulatively, since January 2011, average monthly CM consultant staffing (22 FTE/mo.) is trending with plan.



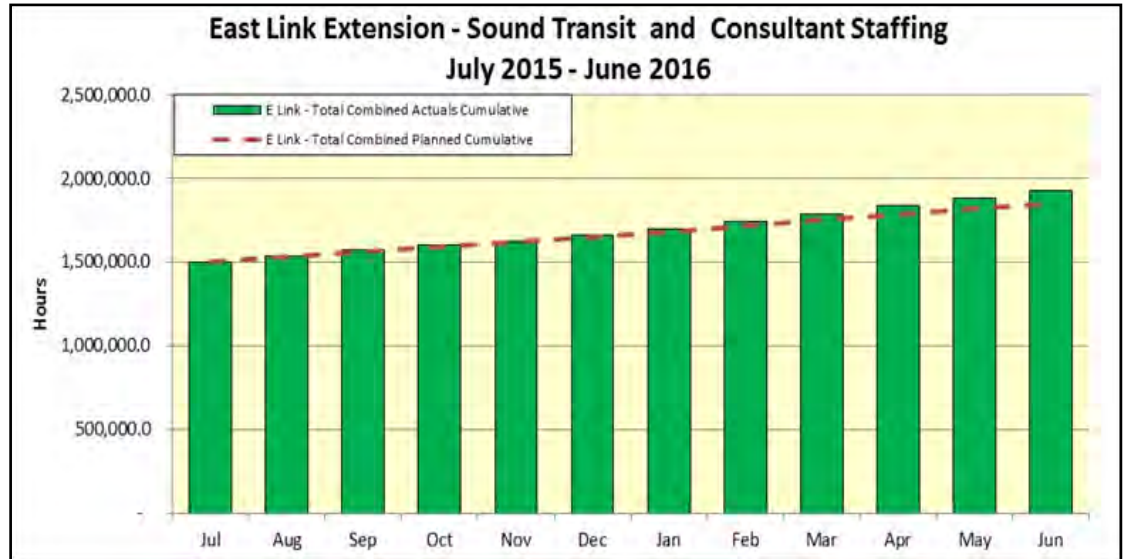
# Link Light Rail Staffing Report



## East Link Extension Staffing

### Total Internal and External Staffing – East ink Extension

Staffing for the East Link Extension in June (280.7 FTE) decreased 1% (3.6 FTE) from May and was 32% (68.6 FTE) above plan. Year-to-date staffing of 278.3 FTE/mo. is 31% (66.2 FTE/mo.) above plan; cumulatively since January 2011, average monthly staffing of 182.8 FTE/mo. is 4.1% (7.2 FTE/mo.) above plan.

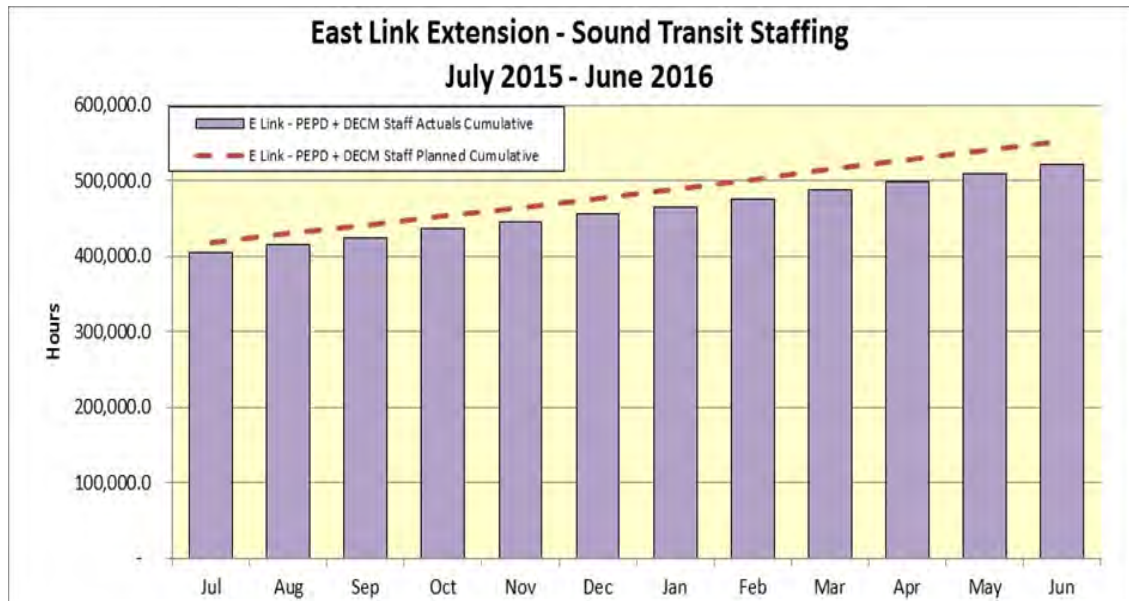


	Labor Hours Jan 2011 - Jun 2016				Current Period Jun 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	1,854,085.1	1,930,344.7	76,259.6	104.1%	33,932.4	44,915.9	10,983.5	132.4%
<b>Monthly Average</b>	28,092.2	29,247.6	1,155.4					
<b>Monthly FTE</b>	175.6	182.8	7.2		212.1	280.7	68.6	

## East Link Extension Staffing

### Internal Resource Commitments to East Link Extension

During June internal staffing for the East Link Extension (72.4 FTE) was 4% (2.9 FTE) above May staffing and was 9% (7.3 FTE) below plan. Cumulatively, since January 2011, average monthly internal staffing 49.3 FTE/mo. is trending 5.8% (3 FTE/mo.) below plan.



	Labor Hours Jan 2011 - Jun 2016				Current Period Jun 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	553,023.0	520,876.7	-32,146.3	94.2%	12,753.6	11,579.2	-1,174.4	90.8%
<b>Monthly Average</b>	8,379.1	7,892.1	-487.1					
<b>Monthly FTE</b>	52.4	49.3	-3.0		79.7	72.4	-7.3	

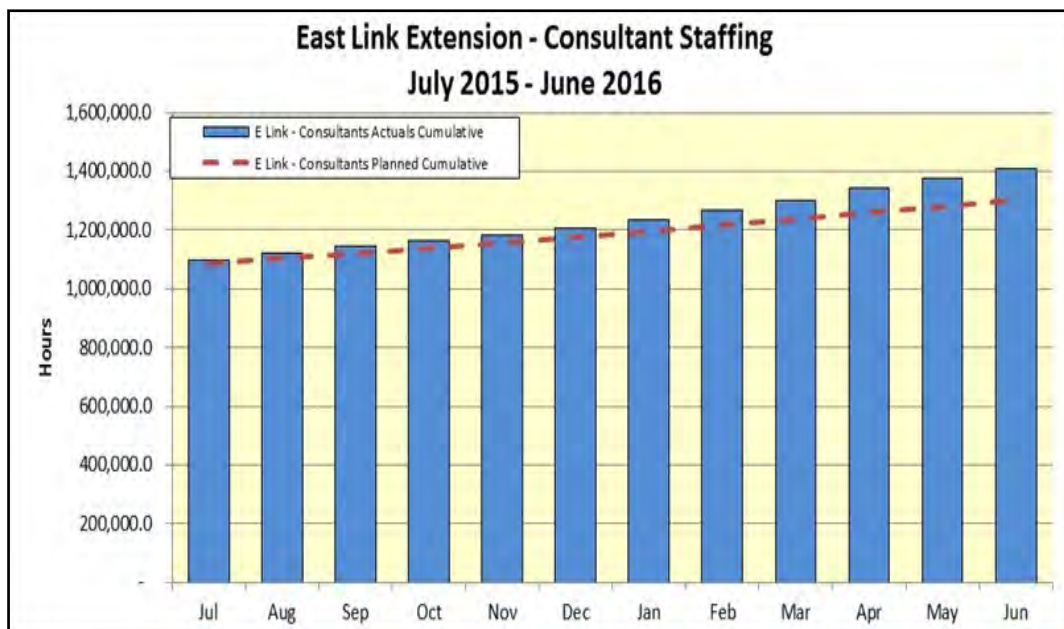
# Link Light Rail Staffing Report



## East Link Extension Staffing

### Consultant Resource Commitments to East Link Extension

There were 208.4 consultant FTE assigned to the East Link Extension during June. Consultant staffing decreased 3% (6.5 FTE) from May and was 57% (76 FTE) above plan. Cumulatively since January 2011, average monthly consultant staffing is trending 8.3% (10.3 FTE/mo.) above plan.

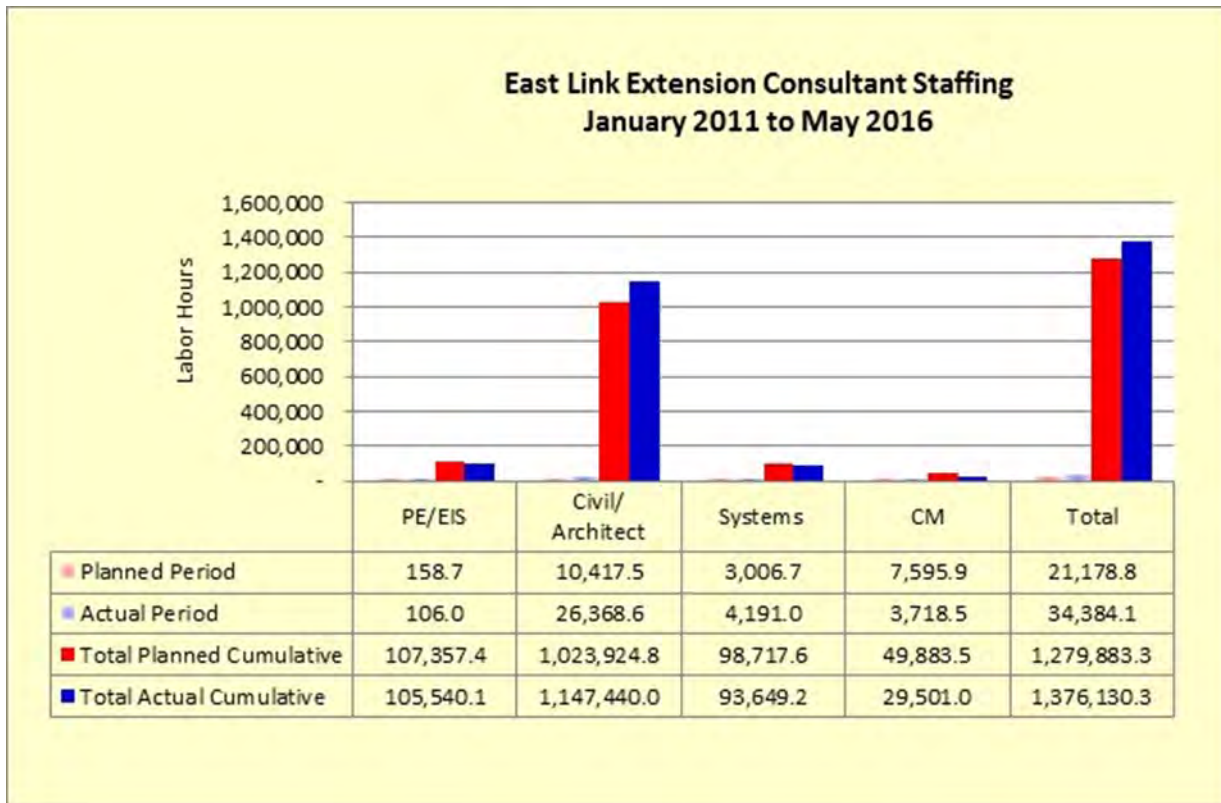


	Labor Hours Jan 2011 - Jun 2016				Current Period Jun 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	1,301,062.1	1,409,468.0	108,405.9	108.3%	21,178.8	33,336.7	12,157.9	157.4%
<b>Monthly Average</b>	19,713.1	21,355.6	1,642.5					
<b>Monthly FTE</b>	123.2	133.5	10.3		132.4	208.4	76.0	

## East Link Staffing

### Consultant Resource Commitments to East Link, continued

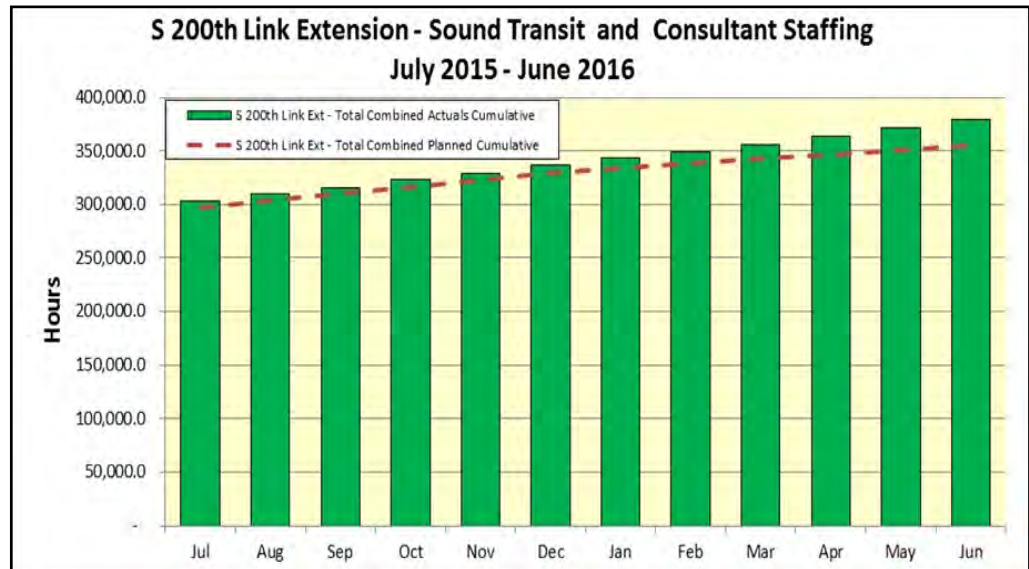
In June, civil engineering consultant staffing (152.1 FTE) was 73% of consultant staffing. Civil engineering consultant staffing was 7.7% (12.7 FTE) below May staffing and 134% (86.9 FTE) above plan. Systems consultant staffing (27.9 FTE) was 48% (9.1 FTE) above plan and was 6.3% (1.7 FTE) above May staffing. There were 0.8 consultant FTE performing Preliminary Engineering (PE) and 27.7 FTE (42% below plan) providing construction management. Construction management consultant staffing increased 19.2% (4.5 FTE) above May staffing.



## S. 200th Link Extension Staffing

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

Staffing for the South 200th Link Extension in May (46.6 FTE) was 74% (19.8 FTE) above plan and 5% (2.5 FTE) below April staffing. Year-to-date staffing is 46 FTE/mo. and is 72% (19.2 FTE/mo.) above plan. Since January 2011, average monthly internal and consultant staffing (35.7 FTE/mo.) is 6% (2 FTE) above plan.

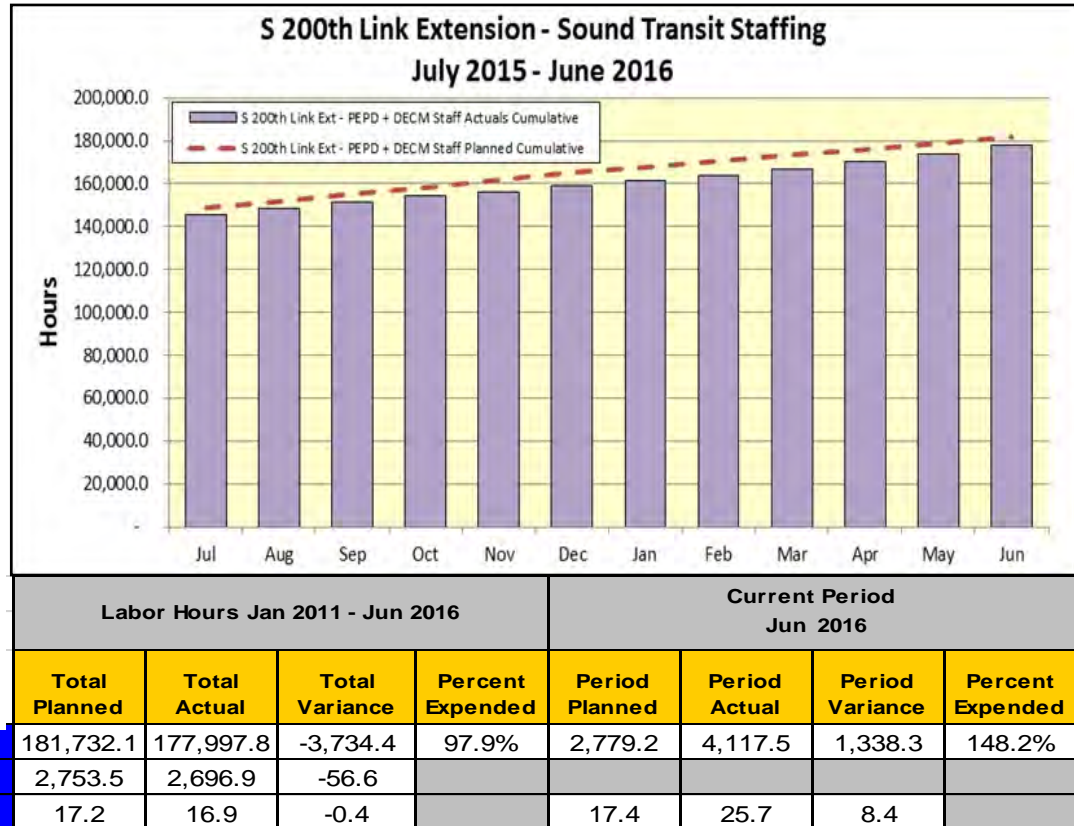


	Labor Hours Jan 2011 - Jun 2016				Current Period Jun 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	355,277.0	379,543.7	24,266.7	106.8%	4,285.9	8,040.8	3,754.9	187.6%
<b>Monthly Average</b>	5,383.0	5,750.7	367.7					
<b>Monthly FTE</b>	33.6	35.9	2.3		26.8	50.3	23.5	

## S. 200th Link Extension Staffing

### Internal Resource Commitments South Link to S.200th Link Extension

Internal staffing in June (25.7 FTE) increased 9% (2.3 FTE) from May and was 48% (8.4 FTE) above plan. Cumulatively, since January 2011, average monthly internal staffing is trending 2.1% (0.4 FTE/mo.) below plan.

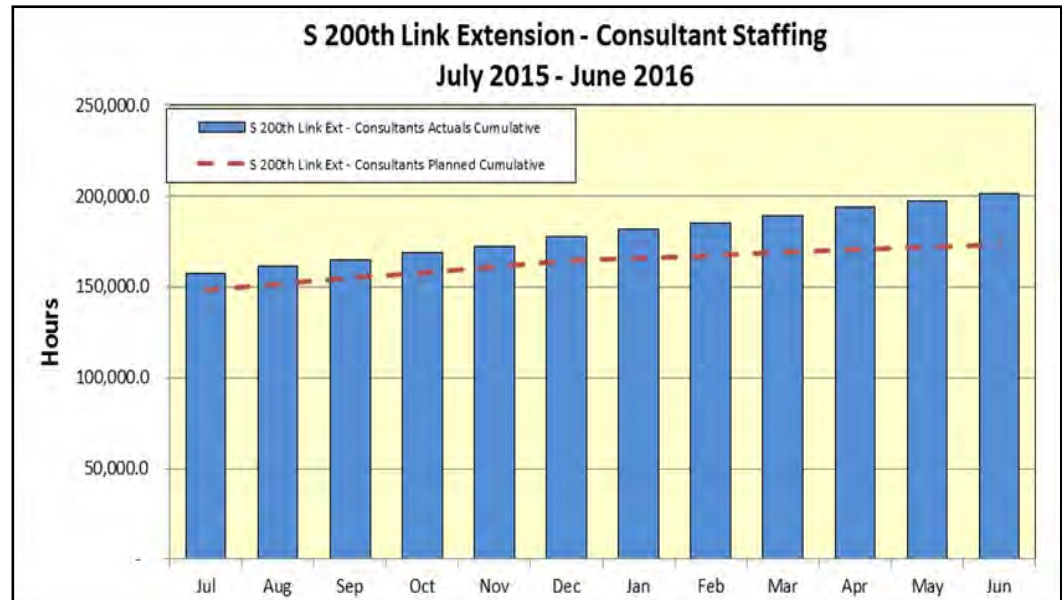




## S. 200th Link Extension Staffing

### Consultant Resource Commitments to S. 200<sup>th</sup> Link Extension

Consultant staffing on the S. 200th Link Extension in June (24.5 FTE) increased 6% (1.4 FTE) from May and was 161% (15.1 FTE) above plan. Cumulatively since January 2011, average consultant staffing is trending 16.1% (2.7 FTE/mo.) above plan.

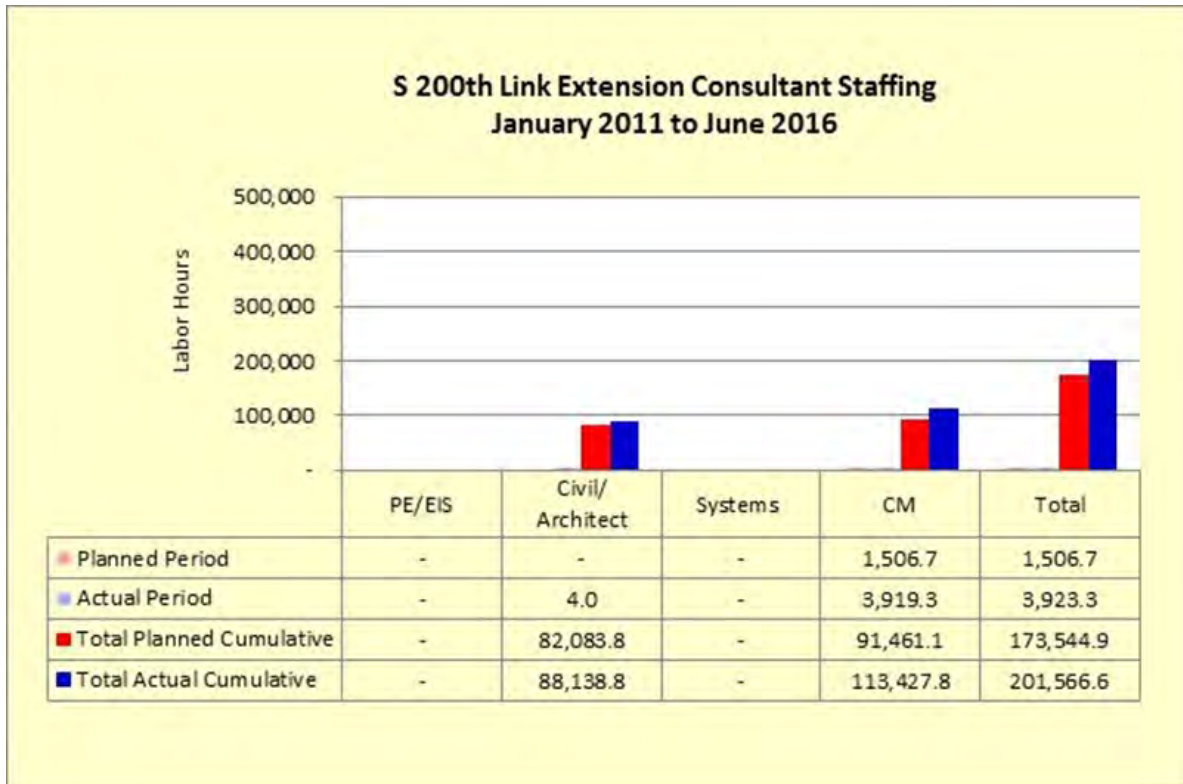


	Labor Hours Jan 2011 - Jun 2016				Current Period Jun 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	173,544.9	201,545.9	28,001.1	116.1%	1,506.7	3,923.3	2,416.6	260.4%
<b>Monthly Average</b>	2,629.5	3,053.7	424.3					
<b>Monthly FTE</b>	16.4	19.1	2.7		9.4	24.5	15.1	

## S. 200th Link Extension Staffing

### Consultant Resource Commitments to S. 200<sup>th</sup> Link Extension

Design/build project management consultants accounted for 100% of consultant staffing in June.



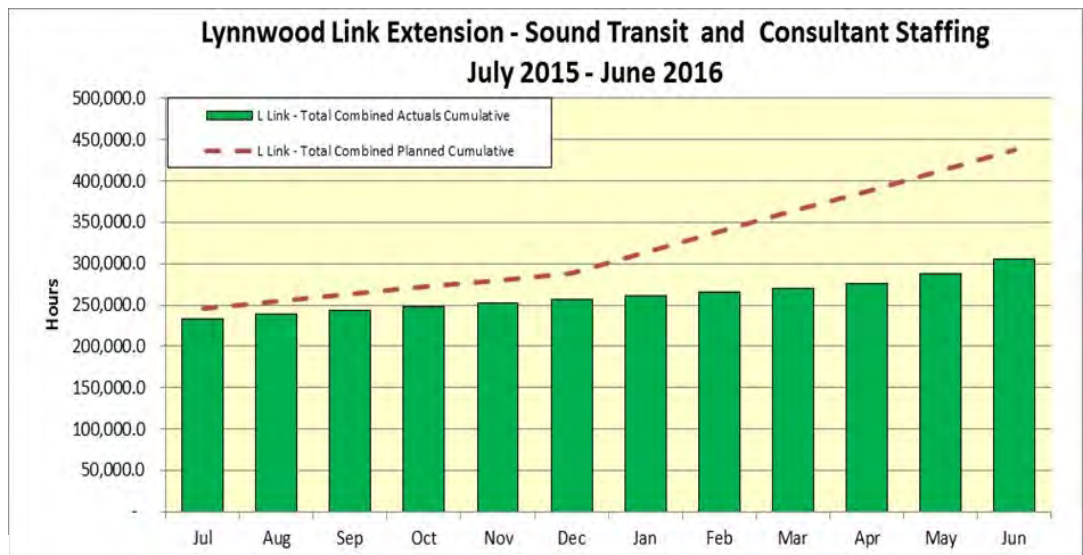
# Link Light Rail Staffing Report



## Lynnwood Link Extension Staffing

### Total Internal and Consultant Staffing – Lynnwood Link Extension

During June, Lynnwood Link Extension staffing was 112 FTE (72% of plan) and included 81.1 consultant FTE (71% of plan) and 30.9 internal FTE (77% of plan). Internal staffing for June was consistent with May staffing; consultant staffing increased 120% (44.2 FTE) in June with the on-boarding of the design and construction management teams. Year-to-date staffing (53.6 FTE/mo) for the Lynnwood Link Extension is 34% of plan.



	Labor Hours Jan 2013 - Jun 2016				Current Period Jun 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	437,897.7	305,239.5	-132,658.2	69.7%	24,849.6	17,919.4	-6,930.2	72.1%
<b>Monthly Average</b>	10,426.1	7,267.6	-3,158.5					
<b>Monthly FTE</b>	65.2	45.4	-19.7		155.3	112.0	-43.3	

Over 94 % of consultant staffing (79.2 FTE) were civil engineering consultants. Additional consultant staffing (1.9 FTE) provided construction management support. Since January 2013, average project staffing for the Lynnwood Link Extension (45.4 FTE/mo.) is 30.3% below plan.

The plan assumed that the final design and construction management consultant teams would be in place by January; the consultant design team began mobilizing in May.

## Tacoma Link Extension

### Total Internal and Consultant Staffing – Tacoma Link Extension

During June there were 7.5 FTE (31% of plan) assigned to the Tacoma Link Expansion including 2.5 consultant FTE (23% of plan) and 5 internal FTE (38% of plan). Year-to-date staffing is 10.1 FTE/mo. (42% of plan). The plan assumed that the final design and construction management consultant team would be in place by January; design will begin in 3Q 2016.

All consultant staff assigned to the project were supporting preliminary engineering.

	Labor Hours Jan 2016				Current Period Jun 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	23,068.8	9,884.9	-13,183.9	42.8%	3,844.8	1,200.9	-2,643.9	31.2%
<b>Monthly Average</b>	3,844.8	1,647.5	-2,197.3					
<b>Monthly FTE</b>	24.0	10.3	-13.7		24.0	7.5	-16.5	

# Link Light Rail Acronyms



## ACRONYMS

AA	Alternative Analysis
APE	Area of Potential Impact
BCE	Baseline Cost Estimate
BCWS	Budgeted Cost of Work
BIM	Building Information Modeling
BNSF	Burlington Northern Santa Fe Railway
CCB	Change Control Board
CDF	Controlled Density Fill
CHS	Capitol Hill Station
CM	Construction Management
CMU	Concrete Masonry Unit
CO	Change Order
CPI	Cost Performance Index
CPM	Critical Path Method
DAHP	Department of Archaeology & History Preservation
DART	Days Away, Restricted or Modified
DB	Design -Build
DECM	Design, Engineering and Construction Management
DEIS	Draft Environmental Impact Statement
DPD	Seattle Department of Planning and Development
DSC	Differing Site Conditions
DSDC	Design Support During Construction
DSTT	Downtown Seattle Transit Tunnel
EFC	Estimated Final Cost
EMI	Electro Magnetic Interference
FD	Final Design
FHWA	Federal Highway Administration
FSEIS	Final Supplemental Environmental Impact Statement
FFGA	Full Funding Grant Agreement
FTA	Federal Transit Administration
FTE	Full Time Employee
GC/CM	General Contractor /Construction Management
HVAC	Heating, Ventilation and Air Conditioning
ICD	Integration Control Document
IRT	Independent Review Team
IWP	Industrial Waste Permit
JA	Jacobs Associates
JARPA	Joint Aquatic Resource Permit Application
KCM	King County Metro
LNTF	Limited Notice to Proceed

ACRONYMS, continued

LRRP	Light Rail Review Panel
LRT	Light Rail Transit
LRV	Light Rail Vehicle
LTK	LTK Engineering Services
MACC	Maximum Allowable Construction Cost
MDA	Major Discharge Authorization
MLK	Martin Luther King, Jr. Way
MOA	Memorandum of Agreement
MOS	Minimum Operable Segment
MOU	Memorandum of Understanding
MPPCV	Major Public Project Construction Variance
MRB	Material Review Board
MTP	Montlake Triangle Project
MUP	Master Use Permit
NB	Northbound
NCR	Notification of Change Report
NCTP	North Corridor Transit Partners
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NTP	Notice to Proceed
OCS	Overhead Catenary System
OMF	Operations and Maintenance Facility
OMSF	Operations and Maintenance Satellite Facility
PE	Preliminary Engineering
PEP	Project Execution Plan
PEPD	Planning, Environment and Project Development
PMOC	Project Management Oversight Consultant
PSST	Pine Street Stub Tunnel
QA	Quality Assurance
QC	Quality Control
QTR	Quarter
RE	Resident Engineer
RFC	Request for Change
RFD	Request for Deviation
RFI	Request for Information
RFP	Request for Proposal
RFQ	Request for Qualifications
RIR	Recordable Injury Rates

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ACRONYMS, continued

RMP	Risk Management Plan
ROD	Record of Decision
ROW	Right of Way
SB	Southbound
SCADA	Supervisory Central and Data Acquisition
SCC	Standard Cost Categories
SCL	Seattle City Light
SDEIS	Supplemental Draft Environmental Impact Statement
SEPA	State Environmental Policy Act
SIP	Street Improvement Permitting
SPI	Schedule Performance Index
SR	State Route
ST	Sound Transit
START	Seattle Tunnel and Rail Team
SWI	Stacy & Witbeck, Inc.
TBM	Tunnel Boring Machine
TCE	Temporary Construction Easement
TE	Traction Electrification
TFK	Traylor Frontier Kemper Joint Venture
TOD	Transit Oriented Development
TVM	Ticket Vending Machine
UAC	Unallocated Contingency
U-Link	University Link project
USFWS	U.S. Fish and Wildlife Service
UW	University Of Washington
UWS	University of Washington Station
VE	Value Engineering
VECP	Value Engineering Cost Proposal
WBS	Work Breakdown Structure
WSDOT	Washington Department of Transportation