

# Progress Report

## Link Light Rail Program

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Angle Lake Station nearing completion

June | 2016



## 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 \$1.89B.

**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 \$41.8M.

**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 Satellite Facility:** Sound Transit is reviewing and evaluating current and future light rail storage and maintenance requirements to support the development, design, and construction of a future light rail operations and maintenance facility for proposed system expansion.

**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.

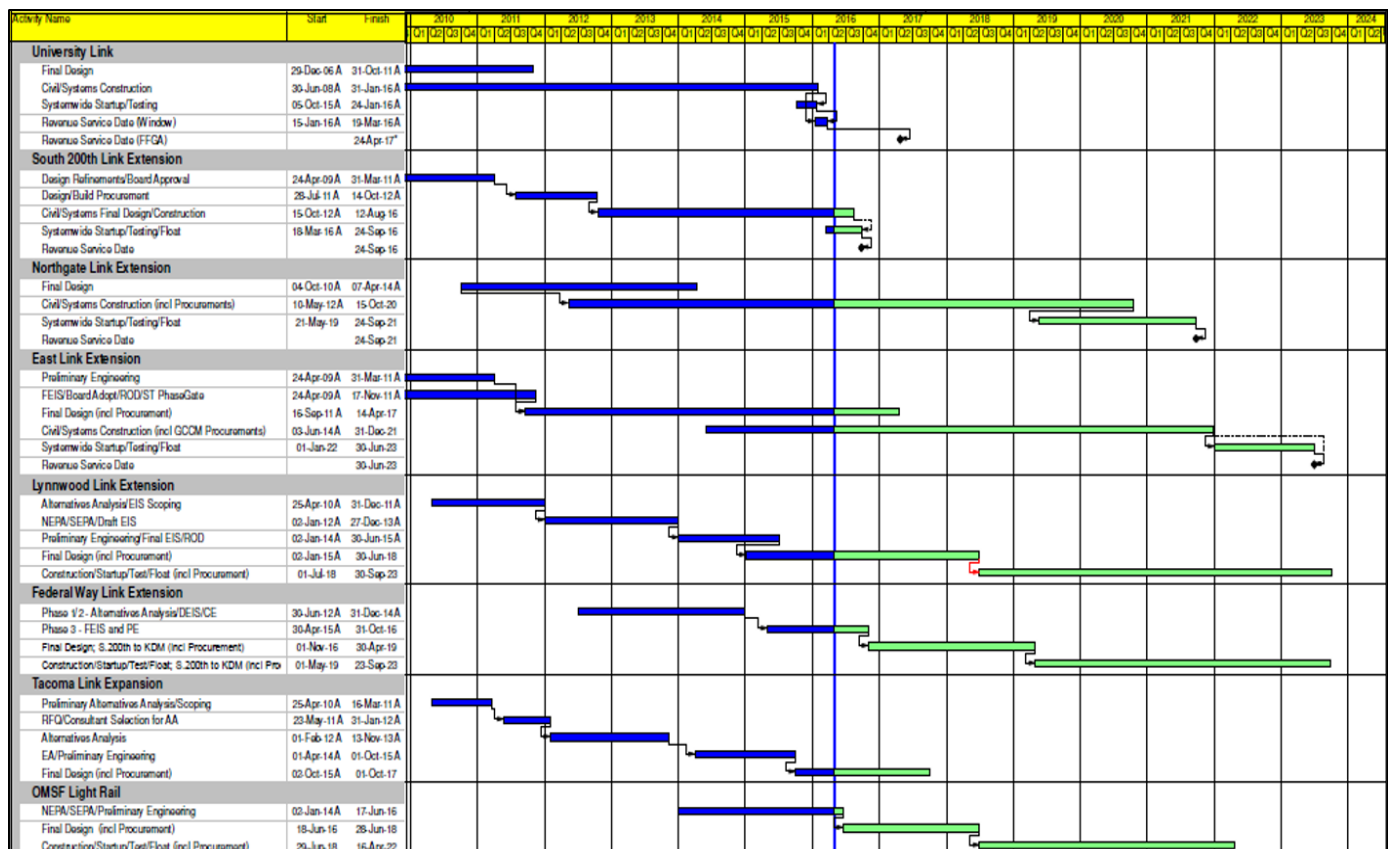
## Program Budget

Project	Adopted Budget	Committed to Date	Incurred to Date	Forecast to Complete	Estimated Final Cost	Adopted Budget vs. EFC
University Link	\$1,756.0	\$1,505.9	\$1,492.1	\$49.7	\$1,555.5	\$200.5
Northgate Link Extension	\$1,899.8	\$880.6	\$694.4	\$1,019.1	\$1,899.8	\$0
Lynnwood Link Extension	\$487.9	\$142.8	\$58.1	\$345.0	\$487.9	\$0
East Link Extension	\$3,677.2	\$767.0	\$478.9	\$2,910.1	\$3,677.1	\$0
South 200th Link Extension	\$383.2	\$325.9	\$304.4	\$17.4	\$343.2	\$40.0
Federal Way Extension	\$48.8	\$36.2	\$29.1	\$12.5	\$48.8	\$0
Tacoma Link Extension	\$33.0	\$10.2	\$8.0	\$22.8	\$33.0	\$0
Link O & M Satellite Facility	\$133.6	\$35.2	\$32.8	\$98.4	\$133.6	\$0
ST2 LRV Expansion	\$733.0	\$4.9	\$1.6	\$728.2	\$733.0	\$0
Downtown Redmond Link Ext.	\$28.6	\$0.0	\$0.0	\$28.6	\$28.6	\$0
<b>Total Link</b>	<b>\$9,181.1</b>	<b>\$3,708.7</b>	<b>\$3,099.4</b>	<b>\$5,231.9</b>	<b>\$8,940.6</b>	<b>\$240.5</b>

Table in millions.

## Program Schedule

Schedules for active projects are summarized below.

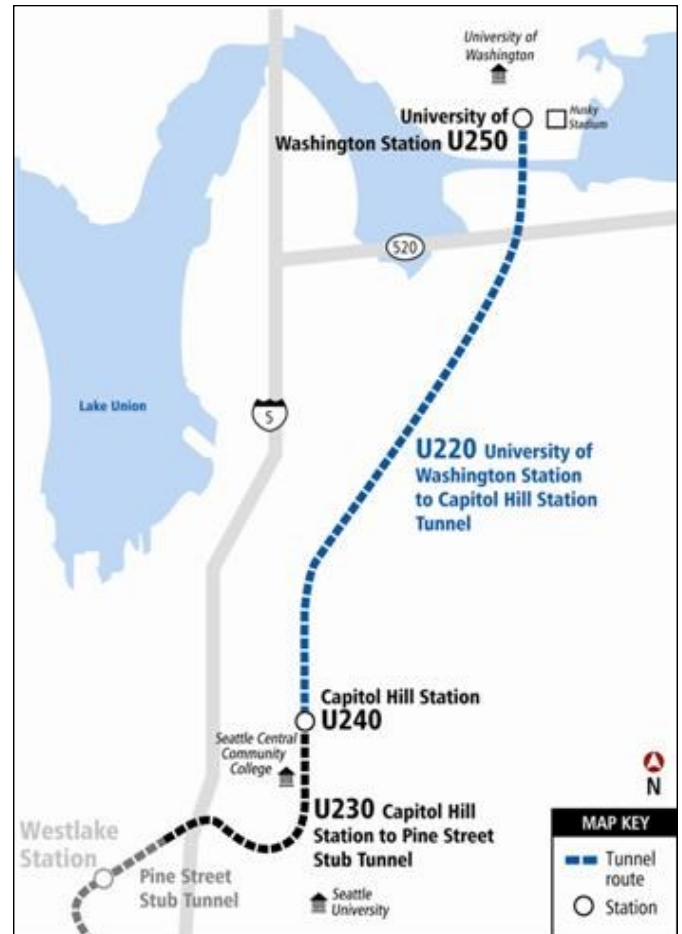


Changes this period: None.



## 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 radiac cables that work as an antenna to the radio communication system.
- Commercial issues with prime contractors are being negotiated as the project proceeds in 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	\$ 79.37	\$ 78.84	\$ 88.23	\$ 25.32
PRELIMINARY ENGINEERING	\$ 24.39	\$ 24.26	\$ 24.26	\$ 24.26	\$ 24.26	\$ -
FINAL DESIGN	\$ 77.94	\$ 90.31	\$ 87.25	\$ 85.73	\$ 88.66	\$ 1.65
CONSTRUCTION SERVICES	\$ 68.53	\$ 94.81	\$ 86.14	\$ 85.67	\$ 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	\$ 991.18	\$ 980.69	\$ 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>\$ 1,505.85</b>	<b>\$ 1,492.10</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>\$ 1,697.55</b>	<b>\$ 1,666.97</b>	<b>\$ 1,747.24</b>	<b>\$ 200.47</b>

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

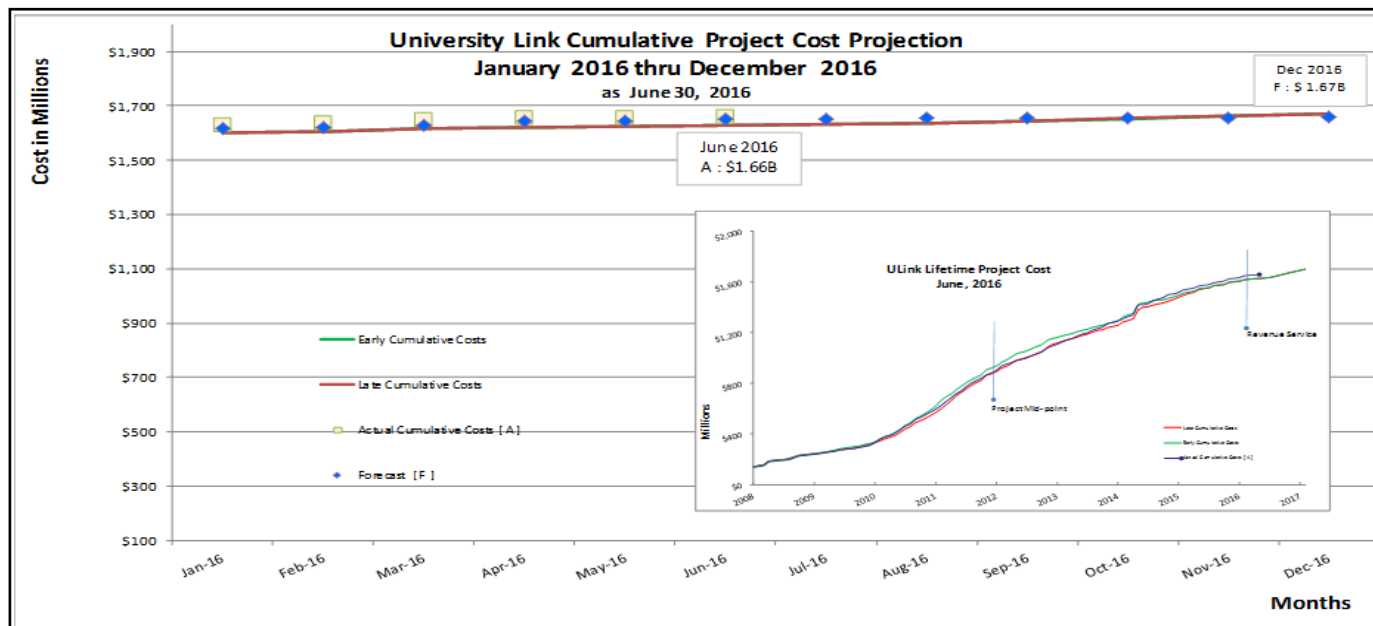
In June, the projected Estimated Final Cost (EFC) including Finance Cost remains at about \$1.75B. In this period, approximately \$3.62M was incurred and inching the project's Incurred to Date amount closer to \$1.5B (Finance Cost excluded). Direct construction cost accounted for about 47% of the cost incurred in June at \$1.7M with the majority of the cost largely in systems and MOW. The direct construction EFC trends 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 system integration and testing. Maintenance of Way continues on building finishes as well as receiving 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 June is at \$1.7M. 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	\$ 455.86	\$ 461.24	\$ (10.78)
20 Stations	\$ 366.33	\$ 350.75	\$ 343.75	\$ 341.84	\$ 353.14	\$ (2.39)
30 Support Facilities: Yards, Shops	\$ 7.01	\$ 24.83	\$ 23.26	\$ 23.18	\$ 24.50	\$ 0.33
40 Siterwork & Special Conditions	\$ 59.03	\$ 67.39	\$ 56.91	\$ 54.46	\$ 56.77	\$ 10.62
50 Systems	\$ 69.63	\$ 116.42	\$ 100.26	\$ 95.58	\$ 102.89	\$ 13.53
<b>Construction Subtotal (SCC 10-50)</b>	<b>\$ 1,128.82</b>	<b>\$ 1,009.85</b>	<b>\$ 980.24</b>	<b>\$ 970.92</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	\$ 299.30	\$ 295.43	\$ 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>\$ 1,505.85</b>	<b>\$ 1,492.10</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>\$ 1,697.55</b>	<b>\$ 1,666.97</b>	<b>\$ 1,747.24</b>	<b>\$ 200.47</b>

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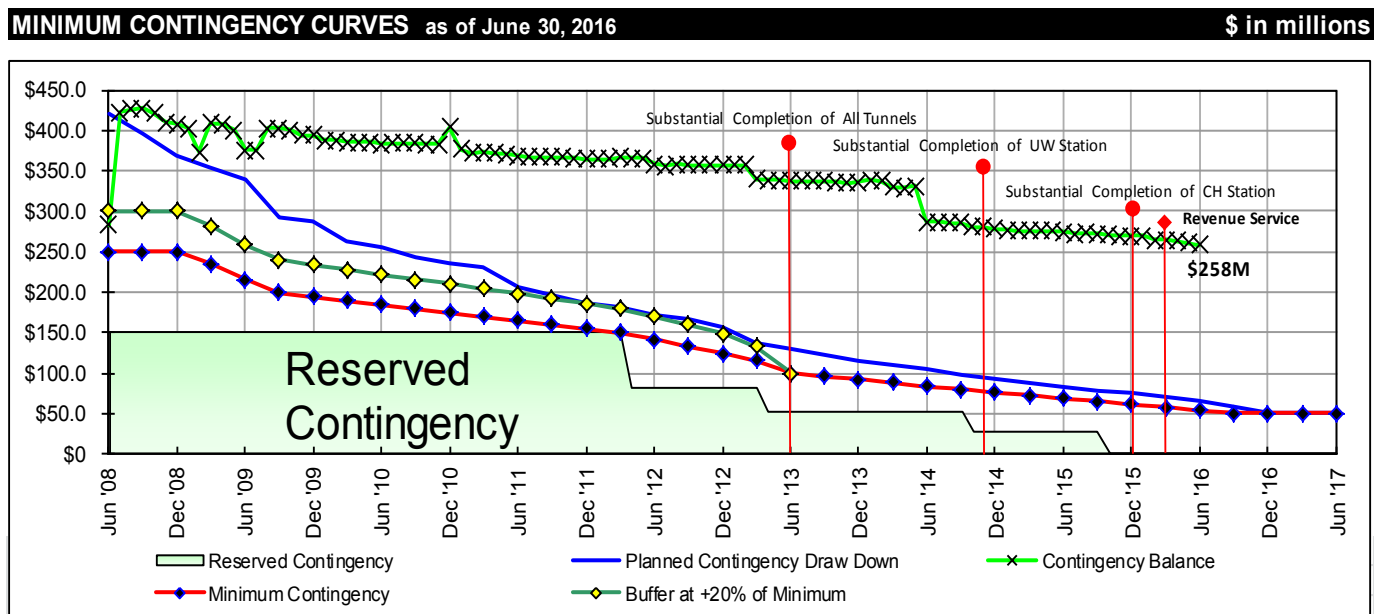
# Link Light Rail University Link Extension



Total project cost incurred to date at June 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. June's overall contingencies notched down by about \$2M 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 be remain unused; thereby, generating approximately \$200M of budget savings excluding financing cost.



## **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	\$10,925,938
Current Contract Value	\$115,776,214
Total Actual Cost (Incurred to date)	\$113,359,857
Financial Percent Complete:	98%
Physical Percent Complete:	98%
Authorized Contingency	\$11,742,514
Contingency Drawdown	\$10,925,938
Contingency Index	1.05



### 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 at the Resident Engineer level based on merit. 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	8,269,157
Current Contract Value	150,015,055
Total Actual Cost (Incurred to date)	149,852,165
Financial Percent Complete:	99%
Physical Percent Complete:	99%
Authorized Contingency	8,452,295
Contingency Drawdown	8,269,157
Contingency Index	1.02

## U810 Contract – *Maintenance of Way*

### Close-out Progress

In U810 MOW, Building A achieved Substantial Completion; punchlist work continued. Building B is close behind. The ST Police moved into the MOW building in March 2016.

### Close-out Activities

#### Current Period

- Continued closing out punch list items.
- Continued processing outstanding commercial issues.
- Continued commissioning documentation submission and working with agencies having jurisdiction on receiving certificate of occupancy.

#### Next Period

- Continue closing out punch list items in both buildings.
- Continue processing outstanding commercial issues.
- Continue closing out of all outstanding NCR's.

### 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>U810– Forma Construction (Design/ Build)</b>	
Original Contract Value	\$11,998,725
Change Order Value	\$676,885
Current Contract Value	\$12,675,610
Total Actual Cost (Incurred to date)	\$12,438,546
Financial Percent Complete	98%
Physical Percent Complete:	98%
Authorized Contingency	\$959,898
Contingency Drawdown	\$676,885
Contingency Index	1.4

### 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.

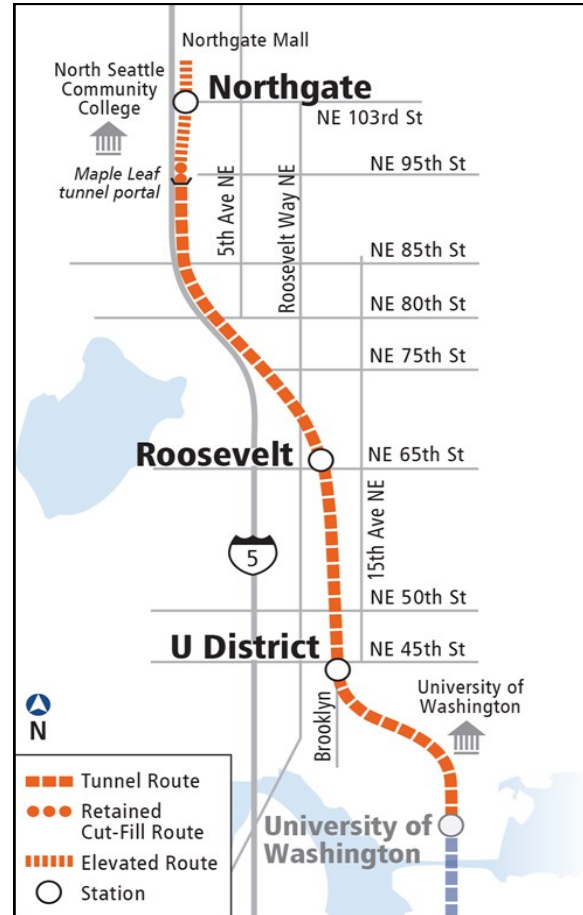
#### Cost Summary

Present Financial Status	Amount
<b>U830 GC/CM Contractor - Stacy &amp; Witbeck</b>	
Original Contract Value	\$119,167,433
Change Order Value	\$3,942,920
Current Contract Value	\$123,110,353
Total Actual Cost (Incurred to date)	\$119,203,280
Financial Percent Complete	96.8%
Physical Percent Complete:	99.0%
Authorized Contingency	\$5,958,373
Contingency Drawdown	3,942,920
Contingency Index	1.5

# Link Light Rail Northgate Link Extension

## Scope

- Limits:** The Northgate Link Extension consists of 4.3 miles of light rail extending from the University of Washington to Northgate.
- Alignment:** The extension begins at the UW Station, boring tunnels under campus then continues north to a portal located north of NE 94<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

- Project staff met internally to discuss NL station/facility naming opportunities to honor Scott White per state legislation.
- Progressing various Final Design contract packages. (*See Final Design section for details.*)
- N105 – ST issued NTP to Pellco Construction; transferred property rights of Key Bank and Northgate Site C to contractor.
- For N125 TBM Tunnels, Crews continued installation of TBM #1 supporting utilities to backup gantries; completed refurbishment of TBM No. 1 cutter-head while completing refurbishment on cradle. Continued dewatering well operations. TBM No. 1 commenced SB tunnel mining from UDS to UWS on June 17; mining progress to date is 2,796 rings (13,980 ft).
- For N160 – Northgate Station – Staff met with CM to discuss constructability of Northgate Ped Bridge, establishing turn-over dates scheduled for the City. Northgate Link team met with Lynnwood Link team to discuss potential LLE VE ideas that could affect N160 and N180 tail track plans.
- For N180 Trackwork, ST review of supplemental bidder criteria for apparent low bidder completed.
- JCM crews re-installed landscaping at house affected by sinkhole along 12th Avenue NE.

## Closely Monitored Issues

- At ST's direction, JCM completed drilling and grouted three investigatory boreholes on 12th Avenue NE south of 62nd Street. Surface drilling operation moved to 1st Avenue NE to carry out three additional holes in vicinity of damaged side sewer.
- TBM No.1 veered off vertical alignment soon after launching from UDS and exceeded allowable specified tolerance. Recovery plan was implemented and TBM has returned to acceptable tolerances.
- ST received SDOT's SIP 90% design comments; unexpectedly large number of comments recorded. Follow-up discussions with SDOT underway.

## 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	\$38.8	\$39.3	\$147.9	\$0.0
PRELIMINARY ENGINEERING	\$15.1	\$15.1	\$15.1	\$15.1	\$15.1	\$0.0
FINAL DESIGN	\$129.2	\$129.2	\$112.0	\$98.0	\$129.2	\$0.0
CONSTRUCTION SERVICES	\$118.3	\$118.3	\$81.7	\$36.4	\$118.3	\$0.0
3rd PARTY AGREEMENTS	\$11.8	\$11.8	\$9.9	\$5.6	\$11.8	\$0.0
CONSTRUCTION	\$1,328.0	\$1,328.0	\$530.0	\$407.3	\$1,328.0	\$0.0
ROW	\$127.3	\$127.3	\$93.2	\$92.7	\$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>\$880.6</b>	<b>\$694.4</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 \$16.1M was incurred, of which \$13.1M was for the N125 tunneling contract, the N111 Utility Relocation project at Northgate and other miscellaneous construction, \$0.4M was incurred for civil and systems final design and design support during construction, and \$1.2 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	\$366.8	\$277.7	\$598.0	\$0.0
20 STATIONS	\$376.1	\$386.7	\$41.4	\$35.2	\$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	\$105.5	\$83.6	\$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>\$519.8</b>	<b>\$402.6</b>	<b>\$1,274.2</b>	<b>\$0.0</b>
60 ROW, LAND, EXISTING IMPROVEMENTS	\$119.9	\$119.9	\$93.2	\$92.7	\$119.9	\$0.0
80 PROFESSIONAL SERVICES	\$420.7	\$427.1	\$267.6	\$199.1	\$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>\$880.6</b>	<b>\$694.4</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 Status

Compared to the baseline amount of \$396.2M, the Total Contingency has decreased by \$58.9M to \$337.3M, which is 28.0% of project work remaining. During this reporting period, a net decrease of \$42.1M 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.

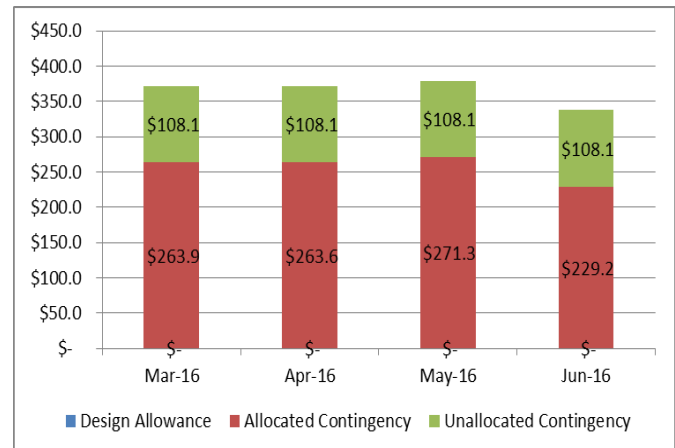


## Cost Contingency Status, continued

**Allocated Contingency** – Compared to the baseline amount of \$184.0M, Allocated Contingency has increased by \$45.2M to \$229.2 M. During this reporting period, AC was decreased by a total of \$42.1M following execution of Civil FD change order in the amount of \$3.4M for miscellaneous design changes, and use of \$38.7M due to the settlement of differing site conditions change orders related to the cross passage dewatering and other miscellaneous changes on the N125 Tunneling contract.

**Unallocated Contingency** – Compared to the baseline amount of \$98.3M, Unallocated Contingency has increased by \$9.8 M to \$108.1 M. 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%	\$ 229.2	19.0%
Unallocated Contingency	\$ 98.3	4.6%	\$ 108.1	9.0%
<b>Total</b>	<b>\$ 396.2</b>	<b>18.6%</b>	<b>\$ 337.3</b>	<b>28.0%</b>



## Project Schedule

The Notice to Proceed (NTP) for the N105 Advanced Demolition & Site Prep contract was issued to Pellco Construction on June 7. Pellco is currently completing work on pre-construction submittals. The Contractor is planning on starting at Site C in Northgate and completing this work by October. Work at the Key Bank site is being planned for yearend (2016) completion.

Work on the N111 contract is complete. The third parties are currently installing their infrastructure in the new duct-banks. Any issue which arise will be handled as warranty/punchlist items. ST's CM team is working with Walsh toward final acceptance.

The Notice to Proceed for the N113 SCL 115kV Relocation project was issued on May 31. Substantial Completion is now February 21, 2017. Anchor bolt cages are scheduled for delivery to the site next period with poles arriving no later than July 18. Potelco will be submitting their Preliminary Baseline schedule in mid-June.

The N125 Tunneling contractor is mining under the University of Washington. The tunneling experience a stoppage due to TBM No. 1 deviating from the DTA. Cross passage construction continues. JCM is currently installing the in-tunnel ground freezing for Cross Passages 34-38. The Contractor's June schedule update was received by ST and returned for revision. A revised update is expected by mid-July.

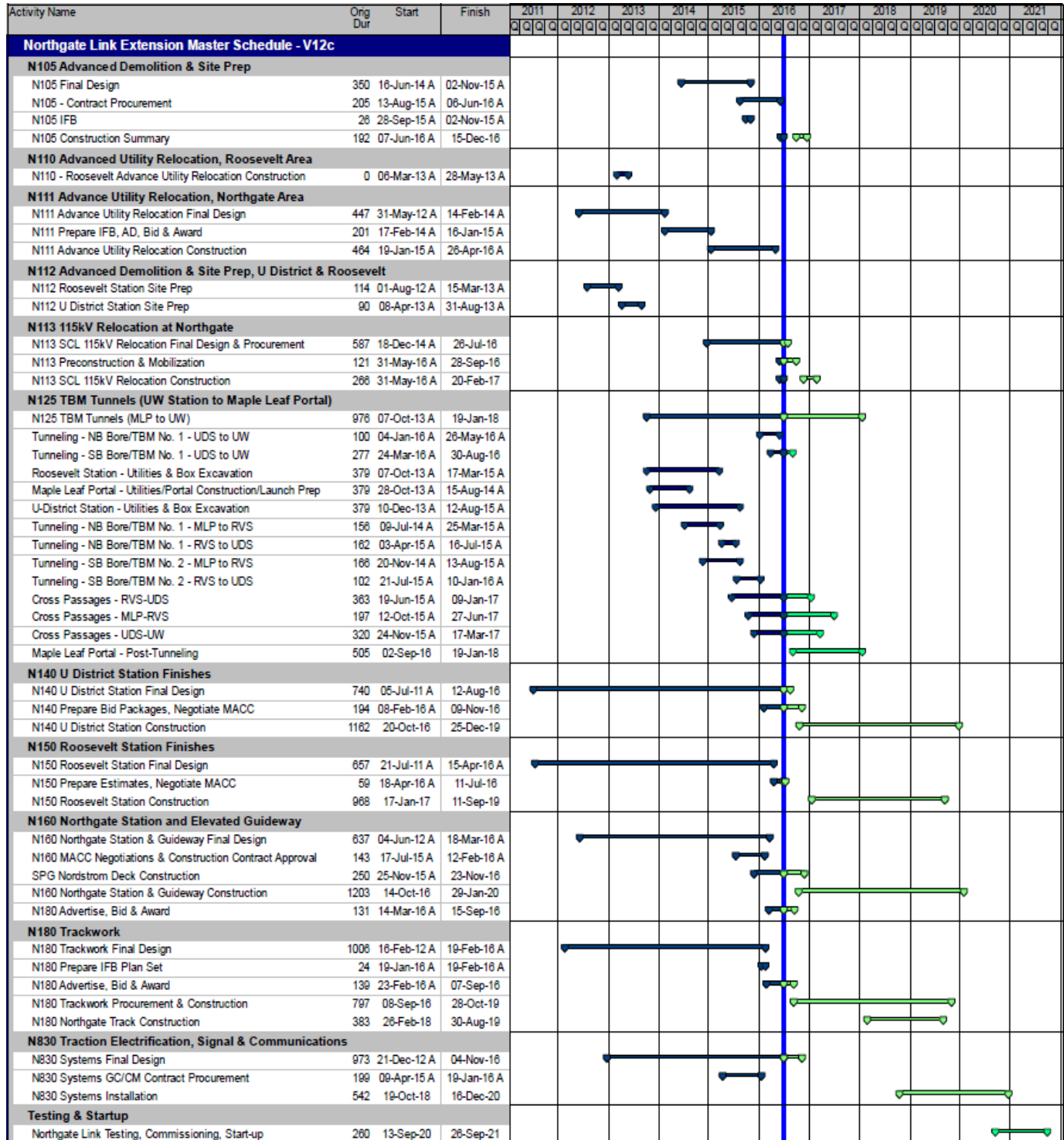
The N140 U District Station 100% Design is scheduled to be delivered to ST on July 29. A 100% Pricing Set will be given to Hoffman on August 1. ST and Hoffman continue to work toward resolution of the cost differences between the Engineers Estimate and the current Hoffman estimate. ST continues to work with the City of Seattle on the Master Use Permit, SIP, and Building Permits.

The N150 Roosevelt Station GC/CM (Hoffman) is working on the 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.

The N160 Northgate Station construction contract bids have been pushed back to a due date of July 1. The project team is planning for an August Board approval, with NTP scheduled for mid-September 2016.

## Project Schedule, continued

The N180 Trackwork contract bids were received on June 10. The apparent low bidder was Stacy & Witbeck. The bid is currently in the post-bid review process, with a planned July Board approval date and NTP in September. The Buy America waiver request for the Ultra-Straight Rail has been sent the FTA. The N830 Systems GC/CM, Mass Electric (MEC) is continuing to develop the initial construction schedule for the systems work.



## Critical Path Analysis

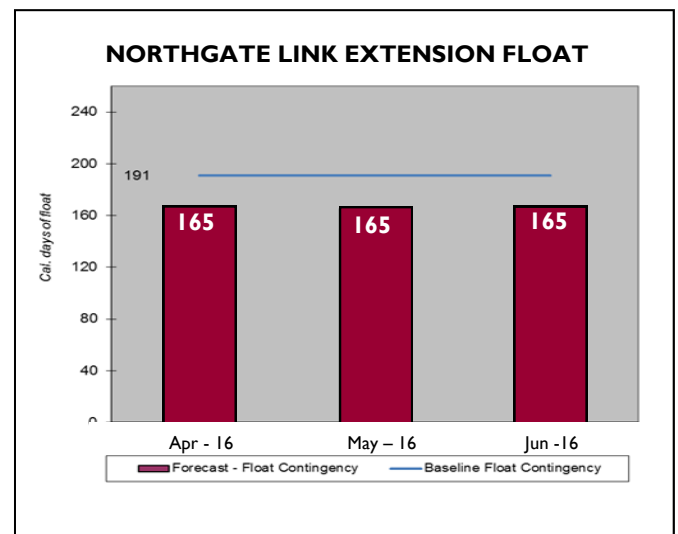
The longest path through the Northgate projects is now driven by the Cross Passage construction in the N125 contract, turnover of the UDS box to N140 through handover of the UDS station and tunnels to the N830 Systems contract. The N160 contract remains a near-critical scope of work.

Activity ID	Activity Name	Longest Path	CO	RD	Start	Finish	TF	2017	2018	2019	2020	2021										
								Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Northgate Link Extension Master Schedule - V12c																						
N125 TBM Tunnels (UW Station to Maple Leaf Portal)																						
N125 Construction																						
N125 Contract Milestones																						
U-District Station																						
Tunnel Construction																						
Maple Leaf Portal																						
N140 U District Station Finishes																						
N140 U-District Station Construction																						
N140 Milestones																						
N160 Northgate Station and Elevated Guideway																						
N160 Elevated Guideway & Station Construction																						
N160 Milestones																						
N830 Traction Electrification, Signal & Communications																						
Systems Installation																						
N830 Interface & Milestones																						
Systems Installations - Stations																						
Systems Installations - Track & OCS																						
Testing & Startup																						
N125 Schedule Update - May-16																						
N125																						
Construction																						
Payment Triggers - Project Demobilization																						
Station Work UDS																						
Tunneling																						
Cross Passages - MLP - RVS																						
Cross Passages - UDS - UW																						
MLP Final Work																						

## 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	June 2016	Year to Date	Project to Date
Recordable Injury/Illness Cases	4	7	42
Days Away From Work Cases	0	1	3
Total Days Away From Work	0	5	219
Restricted or Modified Work Cases	2	2	20
Total Days Restricted or Modified Work	18	18	881
First Aid Cases	6	15	40
Reported Near Mishaps	0	3	44
Average Number of Employees on Worksite	320	-	-
<b>Total # of Hours (GC &amp; Subs)</b>	<b>65,000</b>	<b>341,224</b>	<b>1,610,424</b>
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	12.31	4.10	5.22
DART Rate	6.15	1.76	2.86
<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 Agree- ments	Admin. Settle- ments	Posses- sion 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

- None to report.

### Issues

- None to report.

### Summary

Description	May 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
	<i>None to report.</i>	

## Community Outreach

- Distributed various construction alerts regarding :cross passage work to Roosevelt residents;
  - Re-launch of TBM No. 1 to the U District residents and businesses.;
  - Additional geotechnical drilling on 12th Ave. to Roosevelt area neighborhood.
- Emailed weekly updates regarding ground freezing for cross passage construction.
- Met with impacted property owners and residents and provided updates related to the sinkhole.

## 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.

### 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:

- 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.
- Updated 90% design cost estimate with narrative.
- Generated EFN network block diagrams depicting access switches and distribution switch connections.
- Prepared design docs for N140 QC.
- Prepared Safe Braking calculations report for 100% submittal.

## Final Design Schedule

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

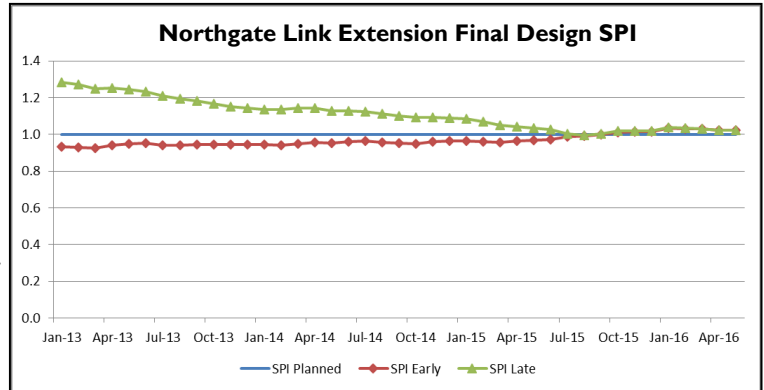
Work Packages	60%		90%		100% to ST	
	Plan	F/A*	Plan	F/A*	Plan	F/A*
N105 Key Bank Demolition and Remediation	7/31/2014	7/31/2014A	10/3/2014	10/3/2014A	2/23/2015	6/18/2015A
N111 Advanced Utility Relocation – Northgate	12/21/2012	5/23/2013A	3/29/2013	10/14/2013A	7/12/2013	1/31/2014A
N113 115kV Relocation at Northgate	10/29/2013	11/21/2014A	3/27/2014	8/5/2015A	6/19/2014	10/2/15A
N140 U District Station Finishes	12/24/2011	4/27/2012A	9/18/2012	12/11/2015A	5/10/2013	7/30/16
N150 Roosevelt Station Finishes	4/13/2012	2/27/2012A	1/28/2013	12/18/2014	10/23/2013	11/20/15A
N160 Northgate Sta. Civil/Finishes/Guideway	6/27/2012	10/5/2012A	4/17/2013	3/7/2014A	11/26/2013	2/5/16
N180 Trackwork	8/23/2012	8/23/2012A	5/22/2013	4/8/2013A	8/26/2013	1/14/16A
N830 Traction Electrification, Signals, Communications	12/12/2012	12/20/2012A	4/10/2014	1/29/16	12/9/2014	7/21/16

F/A\* = Forecast/Actual

# Link Light Rail Northgate Link Extension - Final Design

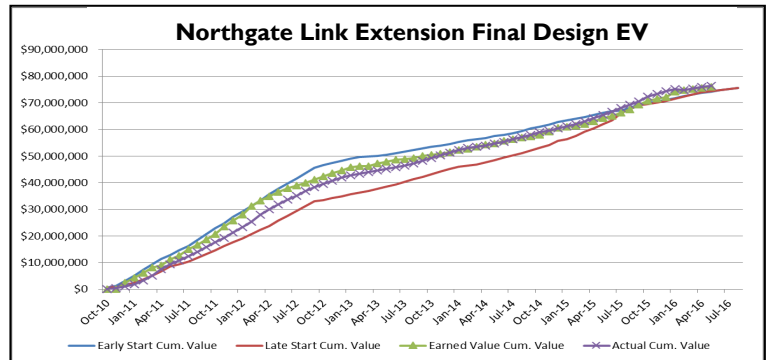
## Final Design Schedule Performance

For Final Design activities only, the Schedule Performance Index (SPI) reported this period is 1.02 based on the early start date, and the late start SPI is also 1.02. The design consultant has had some design deliverable milestones for N140, N150, N160 and N180 pushed back, and some change orders executed, which has impacted the SPI, but the overall deliverable schedule remains on track as adjusted for approved scope changes.



## Final Design Cost Performance

Through this period, the total amount spent for civil final design is \$83.9M, which is approximately 85.5% of the total contract amount including change orders. For final design activities only, the total amount spent is \$76.4M, which is 96.6% of the current final design contract value. One major deliverable remains for N140 100% pricing set. The consultant reported 96.1% complete for final design activities, resulting in an Earned Value of \$76.0M. The current period Cost Performance Index (CPI) is reported at 0.9, and cumulative CPI remains 1.0, which indicates that overall expenditures are in line with planned cost.



Performance	Previous Period	Current Period	Cumulative To Date
Amount Invoiced	\$75,964,848	\$420,653	\$76,385,501
Spent	96.0%	0.5%	96.6%
Earned Value	\$75,671,153	\$370,175	\$76,041,328
% Complete	95.7%	0.5%	96.1%
CPI	1.0	0.9	1.0

## Other Key Final Design Activities

### Geotechnical Investigation

- None to report.

### Surveying and ROW

- Continued discussion and review of Transportation Easement 2 at Husky Stadium area, and prepared exhibits for finalization of UW agreements.

### Traffic Engineering Report

- None to report.

### Permits

- Responded to N140 and N150 90% comments.
- Continued development of N140 ROD matrices.
- Began N160 90% SIP revisions to incorporate SCL comments.
- Continued work on N160 MUP resubmittal and provided input and drawing updates for N160 building Permit corrections.

### Noise Mitigation for At Grade and Elevated Guideway

- None to report.

### Ground Borne Noise and Vibration

- None to report.

### Construction Cost Estimating

- Adjusted N180 cost estimate to reflect changes from 100% to IFB.

### Illustrative Graphics

- None to report.

### Quality Assurance

- Continued QC tasks on active design packages

### Design and Project Integration

- Provided coordination and integration between all contracts in the Northgate area.
- 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	Mar 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 2016 (Design-Bid-Build)	Sept 2016	Nov 2019
N180-Trackwork to Northgate Station	Apr 2016	Sept 2016	Jul 2019
N830-Traction Power, Signals & Com	May 2015 (GC/CM-RFQ)A	Jan 2018 (construction)	Dec 2020

A = Actual

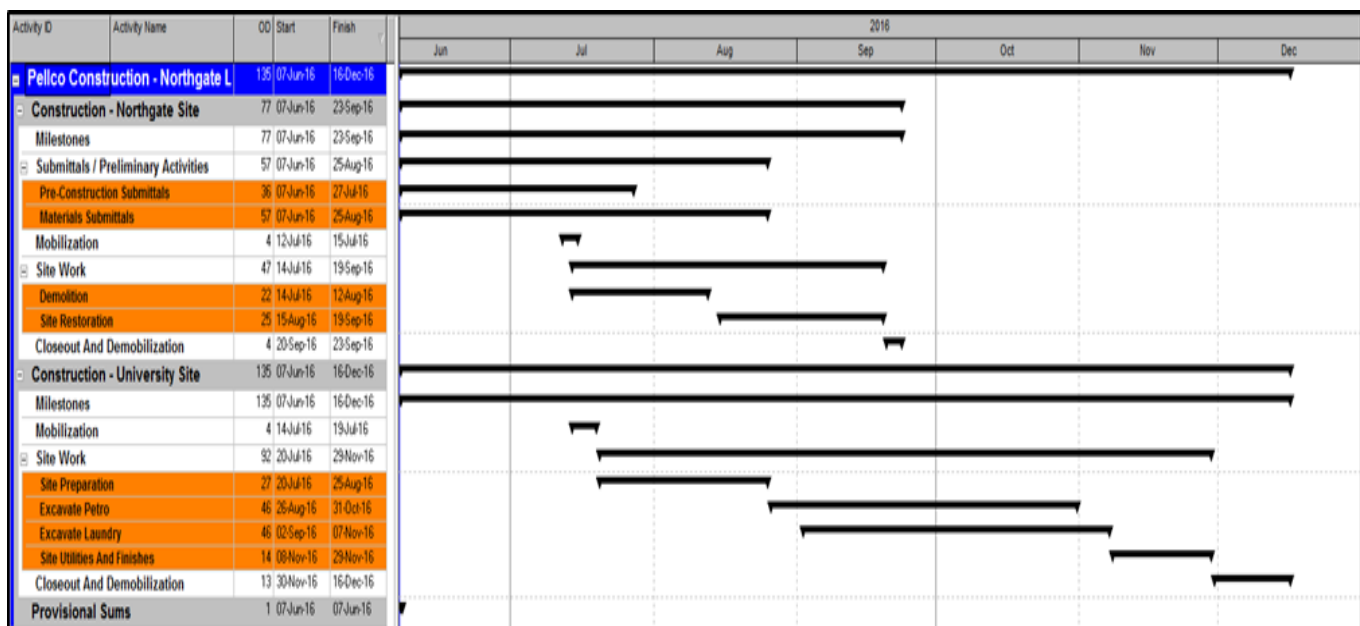
## Contract N105- Advanced Demolition and Site Prep

### Current Progress

NTP for the N105 contract was issued June 7. The Contractor, Pellco Construction, is currently working through the pre-construction submittals. ST has reviewed the Schedule of Values and the Preliminary Baseline Schedule submittals. On site work is expected to start mid-July at the Northgate Site C with initial “soft demo” in preparation for removal of the buildings. Demo at the Key Bank will begin in the latter half of July.

### Schedule Summary

Pellco Construction has hired a scheduling consultant to develop the contract schedule. They have submitted the Preliminary Baseline schedule which indicates a critical path running through key preconstruction submittals (Safety, Haz-Mat, TCP), then to abatement and demo at the Key Bank site. ST has reviewed the preliminary schedule submission and provided comments to Pellco and their consultant.



### Schedule Performance Index (SPI)

N105 was issued with a Scheduling of Work specification requiring the use of Earned Value Management system. However, this contract did not meet the duration or dollar thresholds for the use of EVM according to ST Project Controls Procedures. Therefore the EVMS requirement is being removed from the contract by Change Order. The requirement for cost-loading remains, and is expected to be part of the Baseline schedule submission.



# Link Light Rail Northgate Link Extension



## Key Activities

### Current Period

- Notice to proceed issued on June 7, 2016.
- Held Pre-Construction meeting on June 10, 2016.
- Began project training and orientation coordination with Contractor.
- Sound Transit transferred property rights at both Key Bank and Northgate Site C to Contractor.
- Required Pre-Construction meeting held with City of Seattle.
- Submittal of required early submittals.

### Next Period

- Continue project training and orientation coordination.
- Continue submitting required early submittals.

## Closely Monitored Issues

- None this period.

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## Cost Summary

Present Financial Status	Amount
<b><i>N105 Contractor - Pelco 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:	4%
Physical Percent Complete:	10%
Authorized Contingency	\$269,150
Contingency Drawdown	\$ -
Contingency Index	N/A

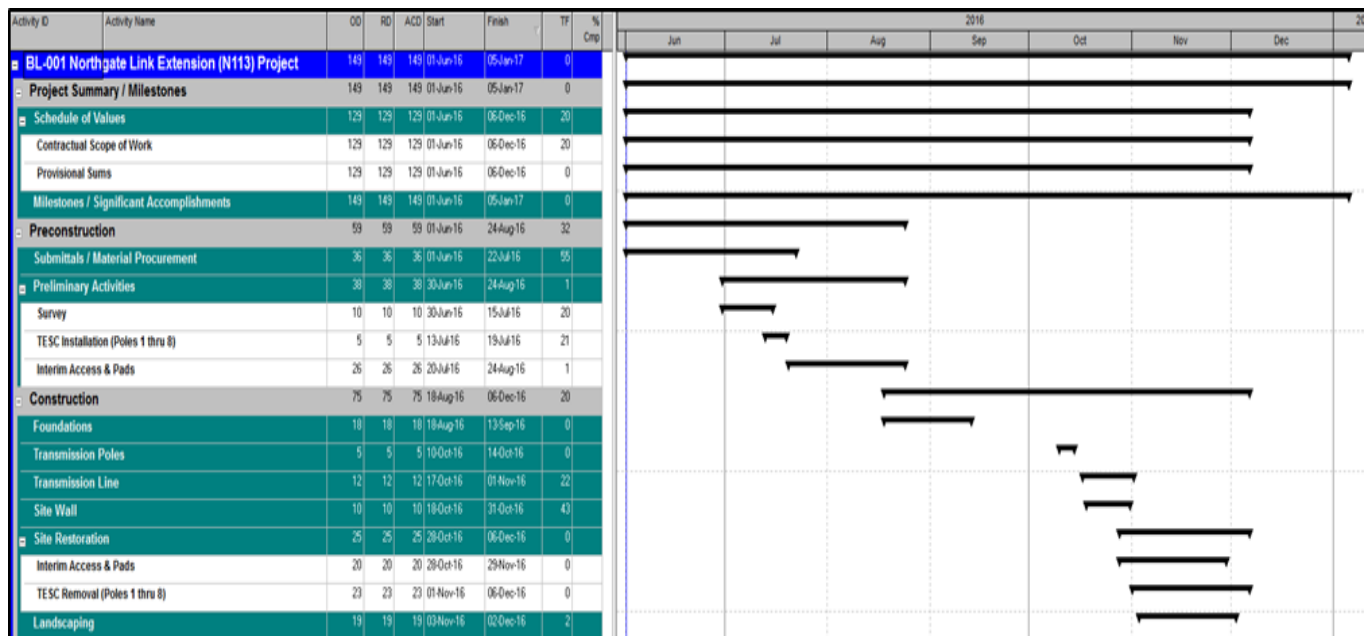
## Contract N113– 115kv Relocation at Northgate Station

### Current Progress

The N113 Contractor, Potelco, is currently working through the Preconstruction submittals. An initial priority was coordinating the delivery of the Poles and Anchor Bolt cages. Potelco and Trinity Meyers facilitated by ST have agreed to have the Cages and Poles delivered in mid-July. Potelco anticipates beginning survey work on the pole sites in mid-July as well.

### Schedule Summary

The N113 Preliminary Baseline Schedule has been submitted and reviewed by Sound Transit, with comments returned in mid-June. Potelco is scheduled to submit the cost-loaded Baseline schedule in late July. The Preliminary Baseline schedule forecasts a critical path through the survey & TESC, then through the Drilled Shafts, Pole placement, Conductor stringing, Removal of the existing line, and site restoration.



### Schedule Performance Index (SPI)

The N113 contract was issued with a Scheduling of Work specification requiring the use of Earned Value Management system. However, this contract did not meet the duration or dollar thresholds for the use of EVM according to ST Project Controls Procedures. Therefore the EVMS requirement is being removed from the contract by Change Order. The requirement for cost-loading remains, and is expected to be part of the Baseline schedule submission.

# Link Light Rail Northgate Link Extension



## Key Activities

### Current Period

- Notice to Proceed issued on May 31, 2016.
- Held Pre-Construction meeting on June 7, 2016.
- Began project training and orientation coordination with Contractor.
- Began submittal process.
- Held meeting with Seattle City Light to discuss the first power outage. Pre-Construction meeting held with City of Seattle.

### Next Period

- Continue submittal process.
- Begin sight layout of pole locations, site boundaries, and wetland limits.

## Closely Monitored Issues

- None this period.

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## Cost Summary

Present Financial Status	Amount
<b><i>N I I 3 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)	\$200,000
Financial Percent Complete:	7%
Physical Percent Complete:	0%
Authorized Contingency	\$281,194
Contingency Drawdown	\$ -
Contingency Index	N/A

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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 SCL for its' intended purpose. 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

- Executed all remaining change orders on the contract.
- Contractor working to complete final punch-list items for third-party utilities.

#### Next Period

- Begin 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 N125 – TBM Tunnels

### Current Progress

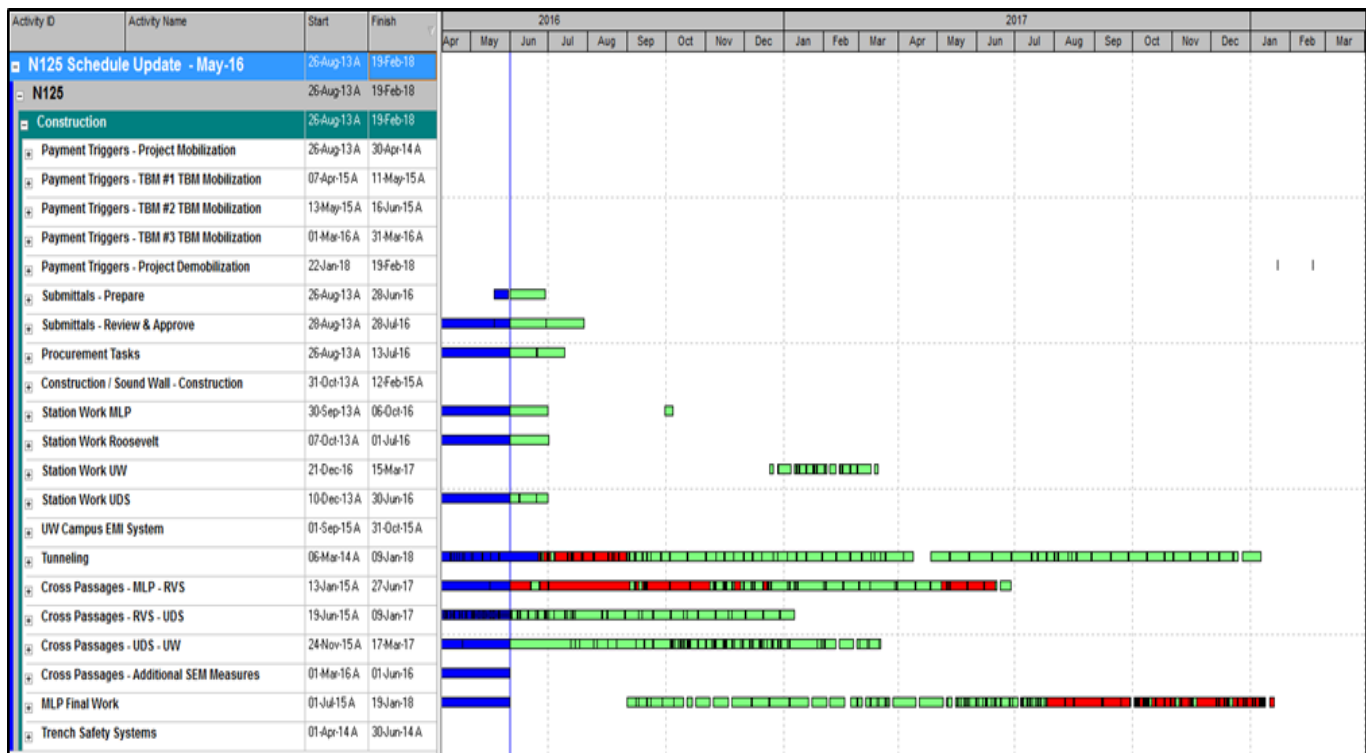
JCM submitted a revised schedule updated through the end of May, and taking into account the conditions of Change Order 146. This schedule was reviewed and rejected due to numerous inaccuracies and negative float. A revised schedule is expected by mid-July.

*Tunneling Operations* -TBM No. 1 launched from UDS on June 14 and as of the end of June, had completed 177 rings, or 18.5% of the final drive to UWS. JCM is forecasting hole-through at UWS in late August.

*Cross Passage Construction* -At the end of June, surface equipment installation CP 21, propping at CPs 23 & 24, invert rebar at CP 27 & 28, in-tunnel freezing at CPs 29 & 31, freeze installation at CP 30 & 34, crown excavation at CP32, formwork and concrete at CPs 39 – 43.

### Schedule Summary

The longest path through the schedule now runs through the post tunneling work in the northbound bore. This includes the invert concrete, troughs, and mechanical piping. One path is driven by the southbound tunneling, which now directly drives Milestone No. 2 – Turnover of RVS. The second path is driven by cross passages 34, 35, and 37, that in turn drive the completion of Maple Leaf Portal and Substantial Completion. The major change with this revision is the disconnection of the cross passage from the station turnover milestones. Sound Transit, after working with the N140 and N140 GC/CM teams has arranged to allow JCM to continue working in the tunnels after the site turnovers for UDS and RVS. JCM has in turn committed to meeting the contract Substantial Completion Date.

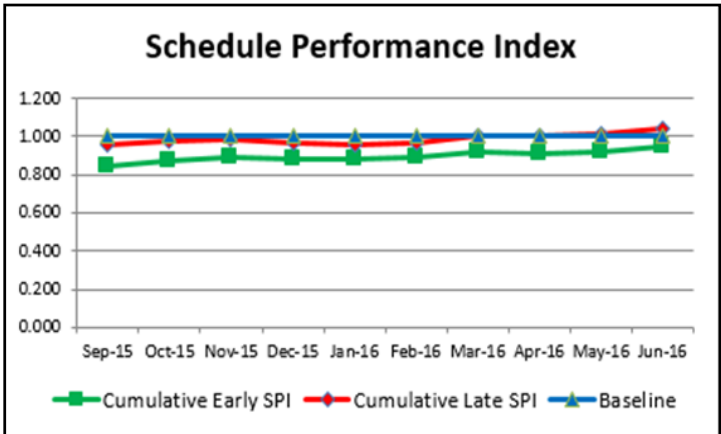




# Link Light Rail Northgate Link Extension - Construction

## Schedule Performance Index

The revised June schedule update reports a Performance Percent Complete of 78% with a Cost Percent Complete of 78.5%. This represents a rollback of the percent complete for the project, a result of the settlement of the Differing Site Conditions with CO-146. The SPI for this period remains 0.9, essentially unchanged from the 0.9 obtained in May.



## Key Activities

### Current Period

- Re-launched TBM No.1 and began SB tunnel mining from UDS to UWS. Total to-date progress is 2,899 rings.
- Continued drilling SB tunnel walkway dowel roles from MLP to RVS.
- Completed/continued various cross passage activities including installation of invert top and bottom rebar, freeze systems, invert waterproofing, endcaps concrete pour, lining formwork, and rebar installation.

### Next Period

- Continue various cross passage activities throughout the tunnels.
- Continue drilling SB tunnel walkway dowel holes and installation of electrical conduits.

## Closely Monitored Issues

- The vertical alignment of SB TBM has come back within the DTA. JCM has submitted the as-built survey of the affected rings to ST. The designers are in the process of finalizing a track realignment plan.

## Cost Summary

Present Financial Status	Amount
<b>NI25Contractor - JCM Northlink</b>	
Original Contract Value	\$440,321,000
Change Order Value	\$ 44,748,005
Current Contract Value	\$485,069,005
Total Actual Cost (Incurred to date)	\$377,262,499
Financial Percent Complete:	79%
Physical Percent Complete:	78%
Authorized Contingency	\$66,048,150
Contingency Drawdown	\$44,748,005
Contingency Index	1.15



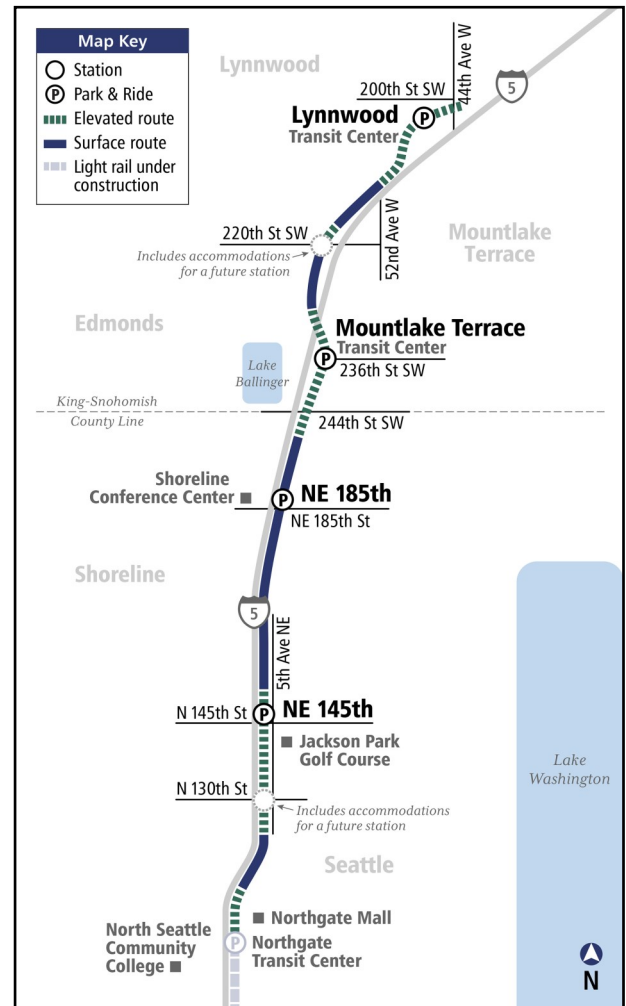
Drilling in-tunnel haunch freeze pipes in NB tunnel of CP34.

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# Link Light Rail Lynnwood Link Extension

## Scope

<b>Limits:</b>	North Seattle to Shoreline, Mountlake Terrace, and Lynnwood Transit Center
<b>Alignment:</b>	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.
<b>Stations:</b>	NE 145th (Shoreline), NE185th (Shoreline), Mountlake Terrace Transit Center, Lynnwood Transit Center
<b>Systems:</b>	Signals, traction power, and communications (SCADA).
<b>Budget:</b>	\$487.9 Million Phase Gate 4 budget; excludes Construction (Year of Expenditure Dollars)
<b>Phase:</b>	Final Design
<b>Const. Starts:</b>	2018
<b>Service:</b>	Late 2023



Map of Lynnwood Link Extension Alignment.

## Key Project Activities

### Final Design

- Executed Civil Final Design contract with HNTB Jacobs in April 2016.
- Board approved Systems Final Design contract with LTK Engineering in June 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.
- Advancing formal agreements with City of Seattle, City of Shoreline, City of Mountlake Terrace, City of Lynnwood, and utility providers.

### Right of Way

- Continued early right-of-way acquisition activities.

### 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	\$9.7	\$9.5	\$88.3	\$0.0
Preliminary Engineering	\$42.0	\$39.9	\$39.0	\$42.0	\$0.0
Final Design	\$111.5	\$70.4	\$2.3	\$111.5	\$0.0
Construction Services	\$104.9	\$12.7	\$0.1	\$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	\$8.2	\$6.4	\$123.8	\$0.0
<b>Total</b>	<b>\$487.9</b>	<b>\$142.8</b>	<b>\$58.1</b>	<b>\$487.9</b>	<b>\$0.0</b>

#### Cost Summary by SCC

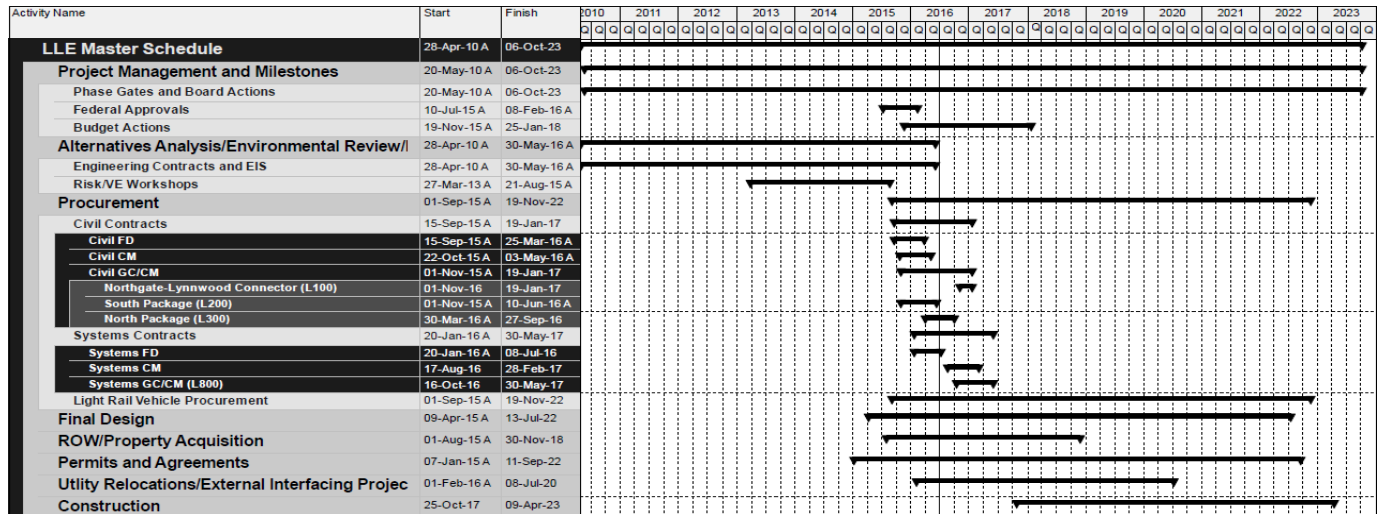
SCC Element	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 Guideway & Track	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
20 Stations	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
30 Support Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$0.0	\$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	\$8.2	\$6.4	\$123.8	\$0.0
70 Vehicles (non-revenue)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
80 Professional Services	\$364.1	\$134.6	\$51.6	\$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>\$142.8</b>	<b>\$58.1</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 early 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
M2016-61	Execute a contract with LTK Engineering Services, LLC to provide systems final design services for the Lynnwood Link Extension project in the amount of \$9,944,242 with a 7% contingency for a total authorized contract amount not to exceed \$9,944,242.	June 23

## Community Outreach

- Went door-to-door to individual businesses adjacent to the Lynnwood Transit Center to increase their awareness of the project.
- Continued project briefings with various community groups including Northgate West condo residents, Pinehurst Community Council, etc.
- Met with Northgate Mall management to discuss construction notifications and protocols.
- Met with a business owner and discussed plans to help improve business.

## Quality Assurance Activities

### Activities/Issues

- None to report.

### Summary

Description	May 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

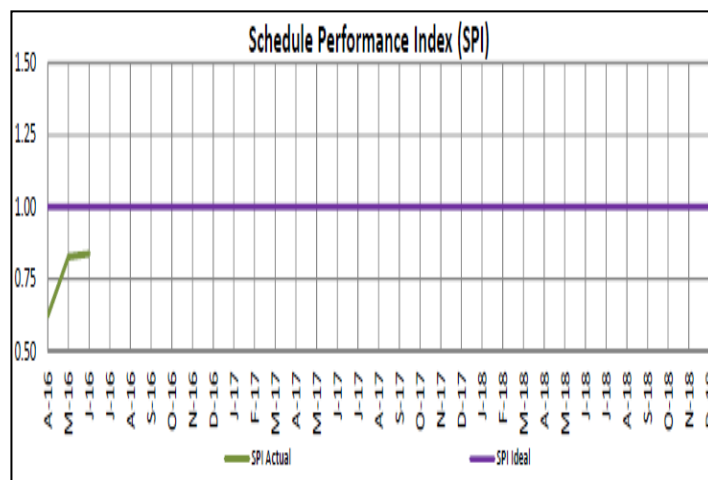
Sound Transit executed a professional services contract with HNTB Jacobs in April 2016 to perform Civil Final Design Services.

## Final Design Activities

- Reviewing preliminary engineering design, and preparing design methodologies.
- Conducted Value Engineering & Constructability Reviews for L100 & L200 Design Packages
- Reconciling L200 30% PE Validation Cost Estimates

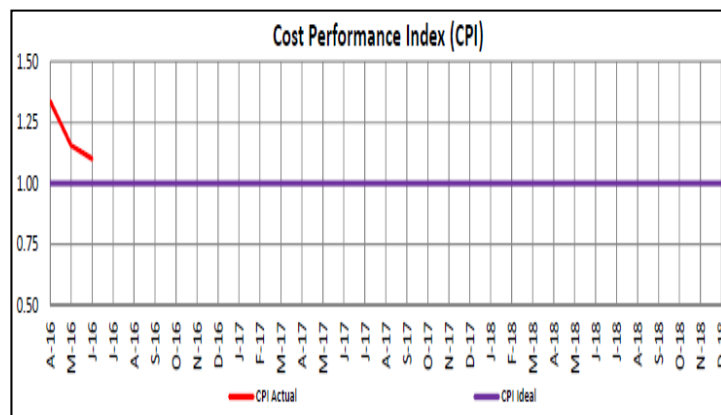
## Final Design Schedule Performance

The cumulative Schedule Performance Index (SPI) trends at 0.84 through June 2016, indicating 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. They are submitting revised schedule on August indicating new 60% deliverable dates and assessment of impact to 90% and 100% deliverable dates. Sound Transit will assess impact to overall master schedule. ROW is currently the driver for construction NTP and is not impacted.



## Final Design Cost Performance

\$2.5 M of the total contract amount, 3.5%, has been spent through June 2016. The Civil Final Design percent complete is 4%, with an earned value of \$2.7M. The cumulative Cost Performance Index (CPI) through June is 1.10 indicating that expenditures are less than the earned value.



Final Design Performance	Previous Period	Current Period	Cumulative To-date
Amount Invoiced	\$793,170	\$1,722,820	\$2,515,991
% Spent	1%	2.5%	3.5%
Earned Value	N/A	\$2,769,332	\$2,769,332
% Complete	N/A	3.9%	3.9%
<b>SPI</b>	<b>N/A</b>	<b>0.84</b>	<b>0.84</b>
<b>CPI</b>	<b>N/A</b>	<b>1.10</b>	<b>1.10</b>

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



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
WSDOT	Final Design	\$ 20,942,000
WSDOT	CM Services	\$ 16,358,000
IMCO	Construction	\$122,021,000

## Key Project Activities

- Work outside the tunnels* – At Island Crest Way: Continued drainage and roadway retrofit work, dowel bar retrofit slot fill back, and rebar tie for concrete barrier.
- Mercer Island Tunnel* –Installing Saccardo Nozzle, grout Supply Fans, motor bases including welding repairs and inspection, repair valve station #5 leak, continue supply plenum and drain valve upgrades.
- Mount Baker Ridge Tunnel* – Install exhaust and supply fans, stairwell #2 Doors; exterior piping fabrication and installation, pigmented sealer application at walkway exterior; install conduit for CO system, install feeder racks.
- SCADA* – Existing panel retrofit design, control strategy and design, Mount Baker Ridge Tunnel Exhaust Fan panel production.
- Simplex* – Upgrade mock-up system to new panels, software testing; MIT Foam Tank – System Upgrade; Phasing Plan Re-submittal.

### Closely Monitored Issues

- WSDOT's Prime Contractor, IMCO, voiced concerns regarding RFI & submittal issues. Due to these concerns, WSDOT has determined there is a need to retain a claims specialist; they are proposing to retain Hainline under a separate agreement to manage any potential claims.
- *Schedule Update:* IMCO provided a time-impact analysis with their most recent schedule update. The update indicates IMCO may request use of 71 days of owner controlled float.

### 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	\$93.9	\$198.3	\$0.0
<b>Total</b>	<b>\$225.6</b>	<b>\$225.6</b>	<b>\$188.0</b>	<b>\$114.8</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	\$93.9	\$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>\$114.8</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	14.1%
Unallocated Contingency	\$18.7	8.3%	\$18.5	16.7%
<b>Total</b>	<b>\$35.7</b>	<b>15.8%</b>	<b>\$34.2</b>	<b>30.9%</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

The WSDOT Prime Contractor has hired a scheduling sub-consultant to redevelop and submit a revised baseline schedule to more accurately reflect the progress methodology used by the Contractor. If the revised baseline is accepted by WSDOT and Sound Transit, Project Milestones will be revised, if necessary, by administrative change order and will be included in future Progress Reports. Until that time, no schedule update information will be included in this report.

Current Project milestones are shown in the table below, and will remain unchanged until such time they are revised by a mutually acceptable revised baseline schedule.

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	2/20/2017	2/20/2017	2/20/2017	4/3/2017	4/3/2017	5/31/2017	5/31/2017

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# Link Light Rail

## East Link Extension



### 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

- *Floating Bridge*: Design (90%) progressing.
- *Fixed Structures*: E120 was submitted on June 17, 2016.
- *Stations*: Judkins Park and Mercer Island Stations were in QC and were submitted on June 17, 2016.
- The East Link Construction Service Agreement with the City of Seattle is negotiated and entering the CCB/Capital Committee process.
- Sound Transit's building permit application with Mercer Island was determined to be complete and the station is vested under the 2012 IBC.
- Conducted the final workshop for the International District Station conversion coordinated construction plan.

#### South Bellevue to Redmond

- WSDOT and ST continued working to finalize the appraisal associated with the Temporary Construction Air Space Lease (TCAL), Air Space Lease (ASL), and the Sweeper Site agreement.
- PSE began relocation of the existing electrical distribution systems facilities at the SE 30th and Bellevue Way intersection.

### South Bellevue to Redmond (continued)

- E320: Advertised for construction. Bid period extension being evaluated.
- E330: Site work continued near the south tunnel portal and on 110th near City Hall.
- E335: Continued advancing the 120th station design; Over-the-shoulder review; advancing to IFB.
- E340: ST and Bellevue staff continued working on overall MGI site restoration plan; finalize MOU-related revisions in the vicinity of 130th Station; Development of application for various construction permits continued.
- E360: Working with DB team and key stakeholders to prepare for the project kickoff; working to finalize agreements for the temporary easements for guideway and pedestrian bridge construction.

## 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 \$10.7M 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	\$47.0	\$46.7	\$186.2	\$0.0
Preliminary Engineering	\$55.9	\$55.9	\$54.5	\$54.4	\$55.9	\$0.0
Final Design	\$283.0	\$283.0	\$224.3	\$177.0	\$283.0	\$0.0
Construction Services	\$257.5	\$257.5	\$115.7	\$12.9	\$257.5	\$0.0
3rd Party Agreements	\$52.2	\$52.2	\$26.7	\$6.9	\$52.2	\$0.0
Construction	\$2,544.3	\$2,544.3	\$144.6	\$30.2	\$2,544.3	\$0.0
Light Rail Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$298.2	\$298.2	\$154.2	\$150.7	\$298.2	\$0.0
<b>Total</b>	<b>\$3,677.2</b>	<b>\$3,677.2</b>	<b>\$767.0</b>	<b>\$478.8</b>	<b>\$3,677.2</b>	<b>\$0.0</b>

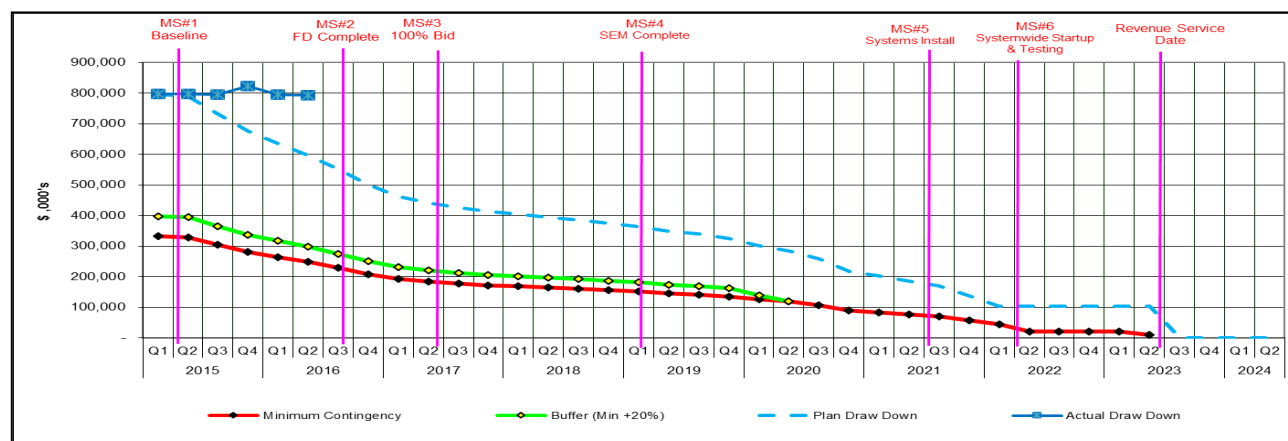
### Cost Summary by SCC

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	\$108.5	\$10.5	\$744.1	\$0.5
20 Stations	\$397.7	\$397.7	\$0.0	\$0.0	\$397.7	\$0.0
30 Support Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$808.5	\$808.5	\$34.7	\$19.6	\$809.5	(\$1.0)
50 Systems	\$353.8	\$353.8	\$1.4	\$0.0	\$353.8	\$0.0
<b>Construction Subtotal (10 - 50)</b>	<b>\$2,304.6</b>	<b>\$2,304.6</b>	<b>\$144.6</b>	<b>\$30.1</b>	<b>\$2,305.1</b>	<b>(\$0.5)</b>
60 Row, Land	\$288.5	\$288.5	\$154.1	\$150.7	\$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	\$900.2	\$468.3	\$298.0	\$899.7	\$0.5
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>\$767.0</b>	<b>\$478.8</b>	<b>\$3,677.1</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 \$1.5M, to a new total amount of \$792.4M. The contingency balance remained higher than the anticipated draw down.



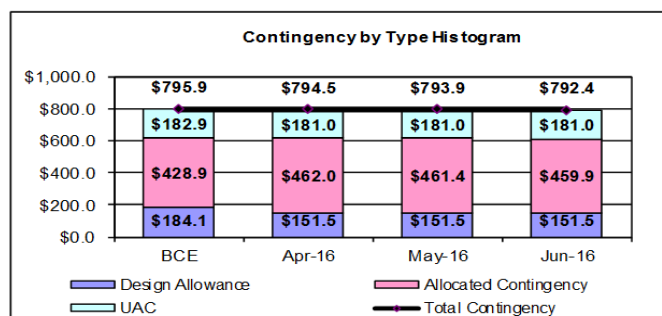
**Design Allowance** is used to account for scope that could not be quantified at the time of the cost estimate. The total amount of design allowance in the baseline cost estimate was \$184.1M. Design allowance had been drawn down in the prior periods to offset the increase in the base cost estimate as more design details are available for cost estimating to the current balance of \$151.5M. 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 further 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 decreased by a net \$1.5M. This was due to the execution of deductive change orders on the E330 contract for the contractor to pay for the costs of the engineering and design of three-drift SEM, and on the South Bellevue to OTC Final Design contract to address various design changes. Total allocated contingency balance is now \$459.9M.

**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%	\$151.5	4.7%
Allocated Contingency	\$428.9	11.7%	\$459.9	14.4%
Unallocated Contingency	\$182.9	5.0%	\$181.0	5.7%
<b>Total:</b>	<b>\$795.9</b>	<b>21.6%</b>	<b>\$792.4</b>	<b>24.8%</b>

Dollar figures on this page are displayed in millions.



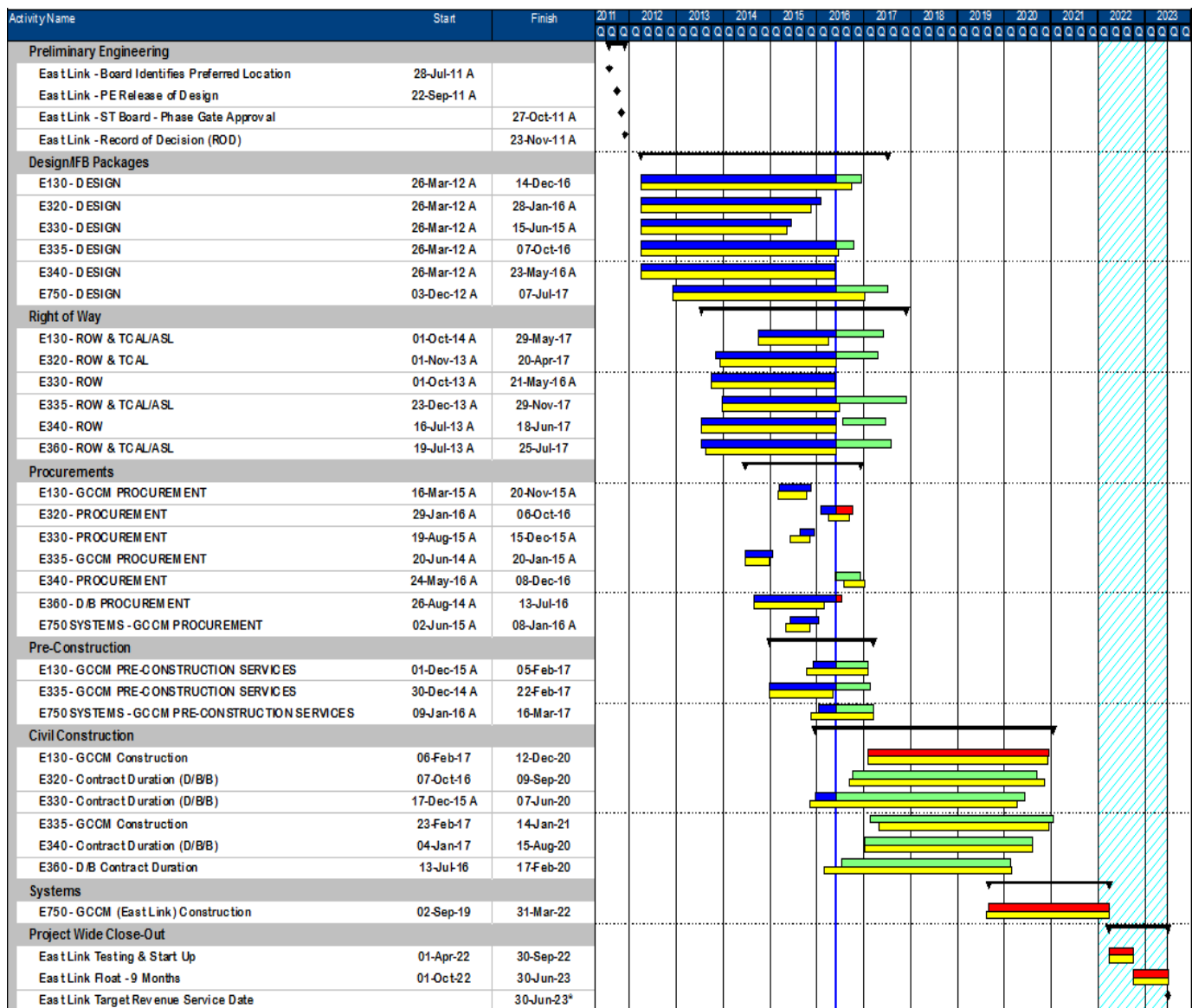
### Risk Management

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 held multiple meetings for the 2nd QTR 2016 Risks Review this period, with PMOC participation in some of the sessions. Sound Transit continued to involve construction contractors who are already under contracts (E130, E330 and E335 in the risk workshops).

## Project Schedule

The East Link Extension (EL) is in Construction. Groundbreaking occurred on April 20, 2016. The first early construction contract, early utilities for E340 Bel Red started in May 2015. The first major EL construction contract E330 Downtown Tunnel was issued Limited Notice to Proceed on December 15, 2015 and Notice to Proceed (NTP) was issued in early February 2016. Contract procurement continues: E130 GC/CM (I-90 Heavy Civil) and I-90 Segment Construction Management Consultant (CMC) were awarded for the pre-construction phase in December 2015; E360 D/B (SR520 to Overlake Transit Center) approved contract award in May 2016 by ST Board; and E750 GC/CM (East Link Systems) was awarded for the pre-construction phase on January 8, 2016. Systems Construction Management Consultant (CMC) is currently in procurement and scheduled to be awarded 3rd QTR 2016; E320 (South Bellevue) issued Invitation for Bids; and E340 (Bel-Red) is scheduled to advertise 3rd QTR 2016.

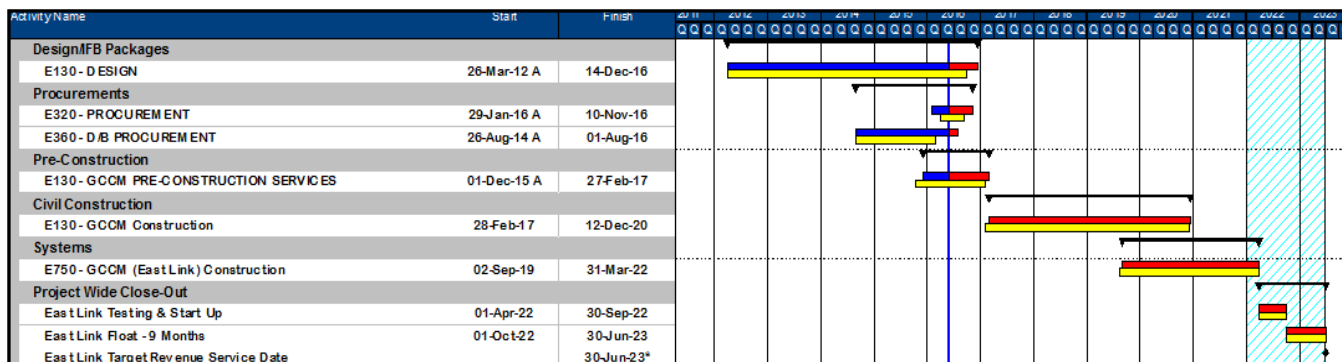
Revenue Service is forecasted for June 30, 2023.



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

### Critical Path Analysis

The East Link critical path remains the same as last period, which runs through completion of E130 design and MACC negotiations, which then drives E130 NTP for construction. Issuance of the I-90 TCAL/ASL is on the near critical path with less than a month of float before becoming the critical driver for E130 NTP for construction. The EL 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	Signed Agreements	Possession and Use	Closings to date	Baseline Relocations Required	Relocations Completed
Seattle to S. Bellevue	2	1	0	0	0	0	0
S. Bellevue to RTC	237	207	3	14	122	228	175
Bellevue Mile	1	1	1	0	1	0	0
<b>Total</b>	<b>240</b>	<b>209</b>	<b>4</b>	<b>14</b>	<b>123</b>	<b>228</b>	<b>175</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 granted P&U; one parcel closed. Air Space Lease discussions with WSDOT continue.

*E330 Downtown Bellevue* – No new activity.

*E335*– Two parcels signed; one parcel vacated.

*E340 Bel-Red* - One parcel signed; three parcels closed and two parcels vacated and three locations required became inactive.

*E360 SR 520 to OTC*– No new activity. Air Space Lease discussions with WSDOT continue.

## Quality Assurance Activities

### Activities

- None to report.

### Issues

- None to report.

### Summary

Description	May 2016	Notes
No. of Audits Planned	0	None
No. of Audits Completed	0	None
Reports in Progress	1	E750/N830 90% Design Submittal Audit
No. of Audits Postponed	0	None

## Sound Transit Board Actions

Board Action	Description	Date
M2016-62	Execute a contract with Hill International, Inc. to provide Design Build Project Management services for the final design and construction of the SR 520 to Overlake Transit Center segment in the amount of \$19,005,018 with a 10% contingency, for a new total authorized contract amount not to exceed \$21,894,020.	Jun 23

## Community Outreach

- Hosted a project booth at the Bellevue Strawberry Festival and more than 460 people visited the booth.
- Sent email to the Downtown Stakeholder list informing them of weekend work at the 110th in support of the north tunnel portal work and changes to traffic control.
- Sent out a South Bellevue construction alert with notification regarding PSE's utility work on Bellevue Way which also impacts the I-90 off-ramps.
- Presented at the City of Bellevue's neighborhood Traffic Mitigation Committee meeting to provide a high-level overview of the future closure of the south Bellevue Park & Ride and Bellevue Way/112th Avenue Maintenance of Traffic.

## 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



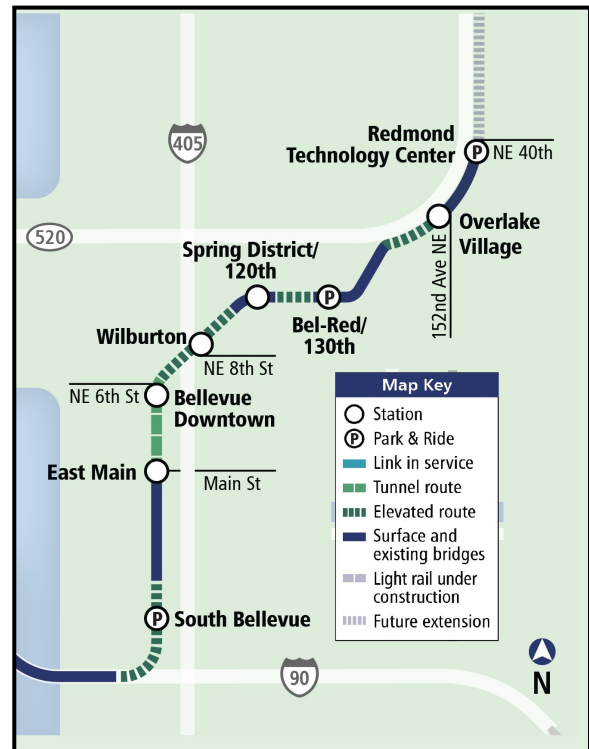
SOUNDTRANSIT

### 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 preparation of the E335 IFB submittal documents, 120th Station 100% documents, and Bellevue City Hall Plaza progress submittal documents.
- Continued design advancement 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.

#### E340 Bel-Red

- Continued coordination with private utilities to issue utility task orders, and coordination with other third parties.
- Continued to support the permit application process.
- Completed the specifications update and submitted for Bid Readiness review.

#### E360 SR 520 to Redmond Technology Center

- Continued preparation for commencement of Design Support for the E360 Design/Build Contract.

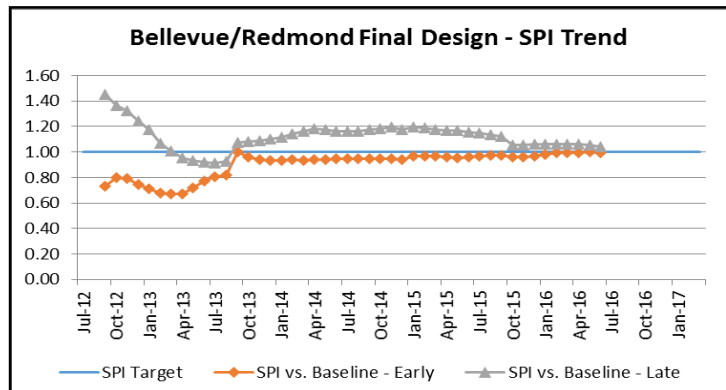
### Final Design Schedule

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				

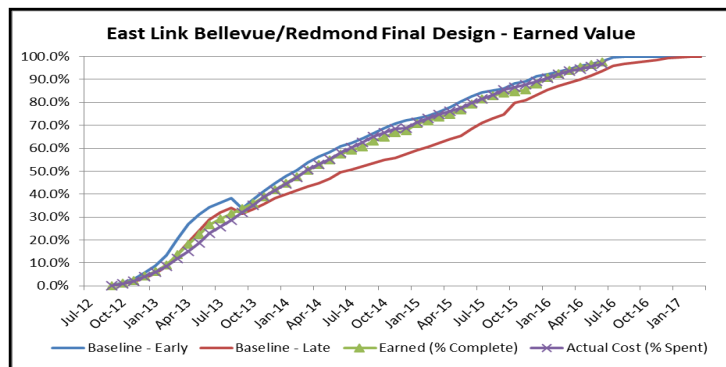
### Final Design Schedule Performance

Excluding Other Direct Expenses (ODC's), Profits and DSDC, the Schedule Performance Index (SPI) reported this period is at 1.0 when measuring against the Early Schedule Baseline, and 1.07 when measuring against the Late Schedule Baseline. E335 final design continues to make good progress.



### Final Design Cost Performance

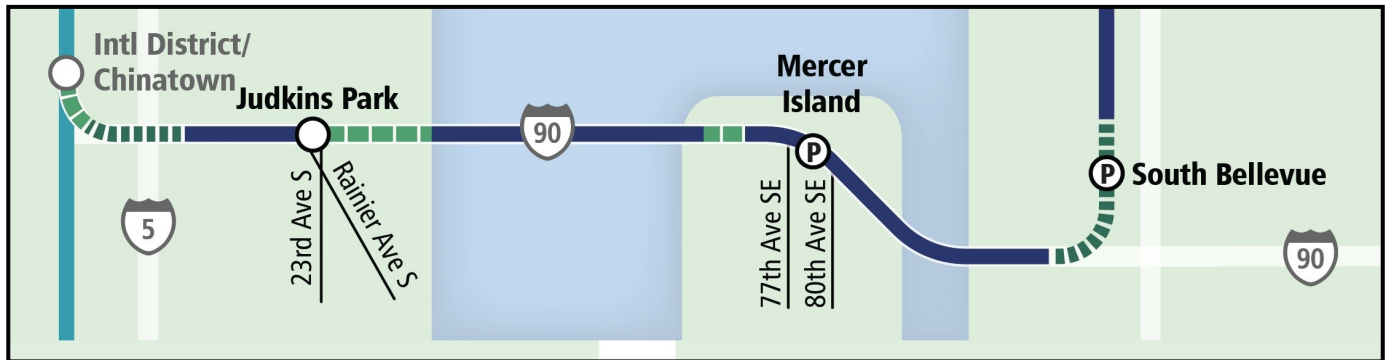
Labor cost (for Phase 2 Final Design) to-date is \$83.67M, or 98.8% of the budget. Progress earned through the same period is approximately 99.7% or \$84.4M of Earned Value. This yields a cumulative Cost Performance Index (CPI) of 1.01, which indicates approximately on-budget cost efficiency of the current 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	\$82,722,906	\$950,530	\$83,673,436
% Spent	98.8%	0.0%	98.8%
Earned Value	\$83,494,887	\$950,000	\$84,444,887
% Complete	99.7%	0.0%	99.7%
<b>CPI</b>	<b>1.01</b>	<b>1.00</b>	<b>1.01</b>

# Link Light Rail

## East Link Extension Final Design - Seattle to S. Bellevue



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 submittal date: July 1, 2016.
- *Fixed Structures*: E120 is in QC and was submitted on June 17, 2016.
- *Stations*: Mercer Island and Judkins Park Stations in QC and was submitted on June 17, 2016.

#### Third Party, Agreements, & Permits

- Continued coordination with WSDOT & FHWA on ASL/TCAL.
- Amendment 1 to the East Link Supplement to the MOA was signed by the City and is awaiting Sound Transit authorization. It amends the scope and schedule, and adds budget for DPD review services.
- Sound Transit's building permit application with Mercer Island was determined to be complete and the Station is vested under the 2012 IBC.

#### Construction & Construction Management

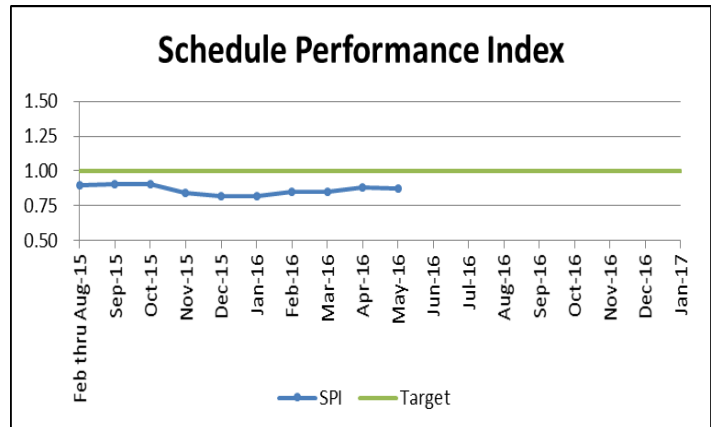
- The Kiewit-Hoffman GC/CM team submitted the Environmental Compliance plan as part of preconstruction services. Both the GC/CM and the Independent Cost Estimator have begun preparation of the 90% estimate.
- ST met with WSDOT to review proposed traffic control plans for D2 seismic work over I-5 as well as potential full closures of I-90 WB for post tensioning. Work continued with WSDOT to modify the seasonal restrictions on the floating bridge to weather based restrictions.
- Representatives from the GC/CM, ST, and King County Metro were taken on a site visit of the International District Station of the Downtown Seattle Transit Tunnel.
- The GC/CM conducted a demonstration of hydro demolition on the floating bridge track attachment mock-up for ST and WSDOT staff. Work continued on the floating bridge track attachments, including installation of plinths with epoxy grout.
- A quarterly risk register review meeting was held June 22nd.

### 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	8/17/2016

### Final Design Schedule Performance

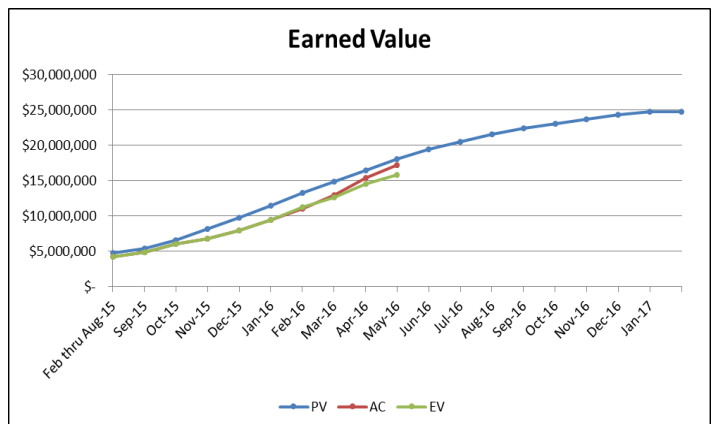
Excluding Other Direct Expenses (ODC's) and Profits, the Schedule Performance Index (SPI) reported this period is 0.88 when measuring against the Phase 2 Early Schedule Baseline, indicating the project continues to trend behind schedule but continues to stabilize. The schedule performance may be due to later than anticipated integration of the E130 GC/CM and CMC teams; additionally, the anticipated delivery of the complete 90% plans, now anticipated July 1st. 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 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 \$21.8M; current CPI is 0.92, down slightly from 0.95 the previous month, indicating the project is trending over budget. This may be due to additional work efforts to complete the 90% plans, which were submitted with exceptions on July 1st. It is anticipated the CPI will continue to be at or 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	\$15,400,605	\$1,794,162	\$17,194,767
% Spent	76.9%	9.0%	85.9%
Earned Value	\$14,558,532	\$1,237,749	\$15,796,281
% Complete	60.0%	6.2%	66.2%
CPI	0.95	0.69	0.92

## 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

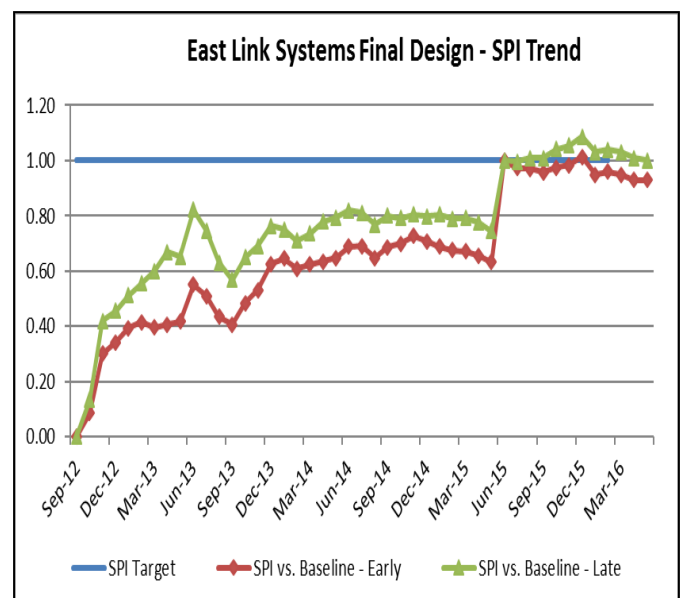
- E130 90% Systems Design Elements.
- Provided final Cathodic Protection Systems Demonstration Test Report to WSDOT for review.
- Performed Value Engineering workshop with the GC/CM Contractor.

## Final Design Schedule

	<u>60% Submittal</u>		<u>90% Submittal</u>		<u>100% Submittal</u>		<u>IFB Submittal</u>	
	Baseline	Actual	Baseline	Forecast/ 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

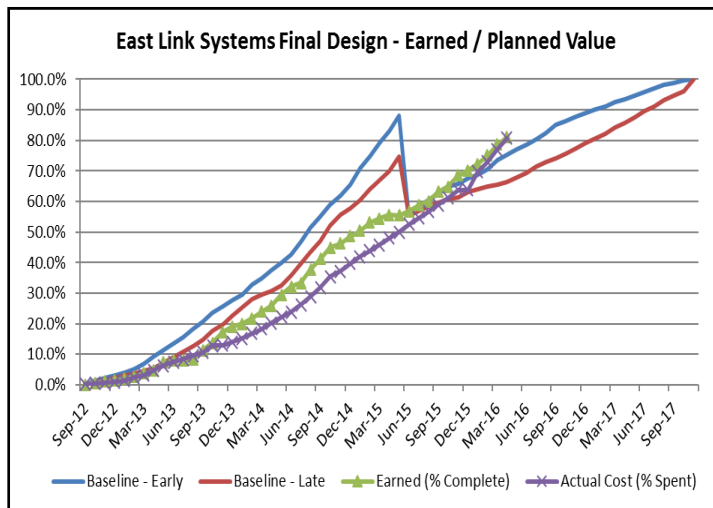
## Final Design Schedule Performance

The project is 81.1% complete resulting in an Earned Value of \$14.3M. The project has an early SPI of 0.93 and a late SPI of 1.02 which indicates that the contract is on schedule.



### Final Design Cost Performance

The project has spent approximately 80% of the budget resulting in CPI of 1.00. 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	\$599,000	\$14,833,724
% Spent	80.0%	2.8%	82.8%
Earned Value	\$14,295,873	\$599,000	\$14,894,873
% Complete	81.1%	3.4%	84.5%
<b>CPI</b>	<b>1.1</b>	<b>1.0</b>	<b>1.0</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: Issued Invitation for Bids in May 2016.*

**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: GC/CM providing constructability and value engineering comments. Developing final plans for subcontracting and schedule.*

**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: ST Board approved the award of contract in May 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

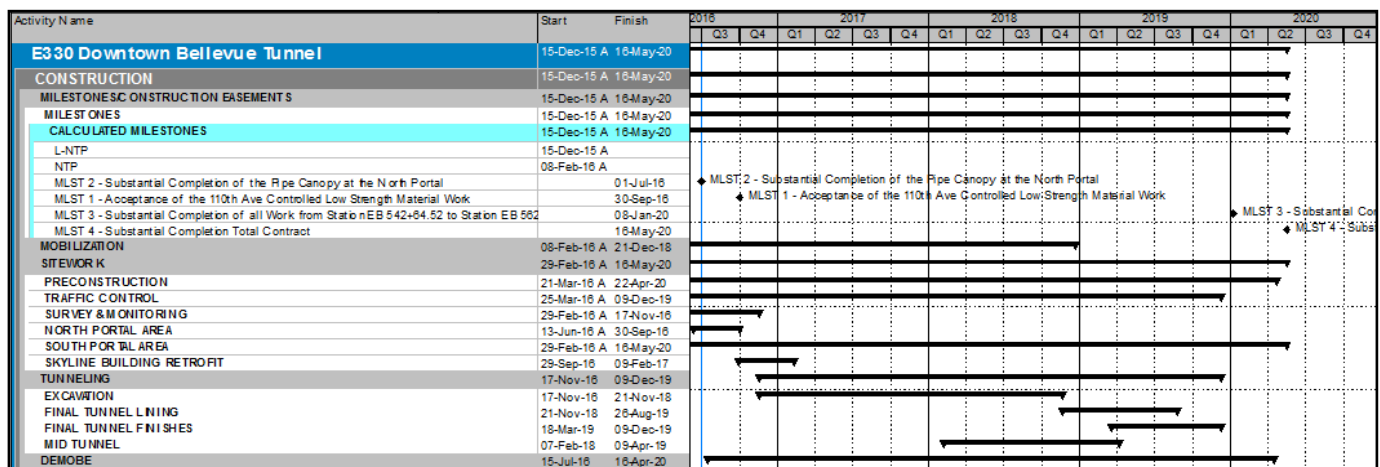
**South Portal:** Completed sound wall grading, delivered the steel piles for the wall and the commenced drilling the sound wall shafts. Concurrently, the Contractor continued with storm and sewer casings work.

**North Portal:** Installed traffic control measures, closed off 110th Avenue and began the Controlled Low Strength Material (CLSM) scope of work. This included pavement removal, potholing for utilities, bracing existing utilities, and began digging trenches, installing soil nails, and pouring CLSM.

Additionally, preparations were underway with submittals and traffic control plans being finalized, and installation of the temporary fencing in anticipation of the North Portal Controlled Low-Strength Material (CLSM) work next month. The contractor continued progressing the work with the trend in the positive direction, but continues to be slightly behind the original planned schedule and it is consistent with the SPI analysis (see below).

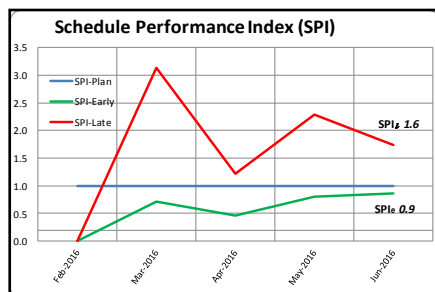
### Schedule Summary

The critical path 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 (0.90) continues to trend closer to the original base plan and the SPI late (1.6) is holding its trend on completion within the baselined schedule. The index indicates that the contractor continues trending in the positive direction while catching up to the original base plan. This trend was supported by the fact that the sound wall installation was accelerated this period due to the completion of submittals and materials being procured ahead of schedule.



### Cost Summary

Present Financial Status	Amount
<b>E330 Contractor</b>	
Original Contract Value	\$121,446,551
Change Order Value	\$100,000
Current Contract Value	\$121,346,551
Total Actual Cost (Incurred to date)	\$11,340,979
Financial Percent Complete:	9.33%
Physical Percent Complete:	9.33%
Authorized Contingency	\$12,244,655
Contingency Drawdown	\$100,000
Contingency Index	N/A

## 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 I work.
- Layout Piezometers, Inclinoimeters and Extensometers throughout the site
- Complete sanitary sewer and commence work on storm drain scope at the South Portal.

## 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.
- Agreement between Contractor and the City regarding tunnel fire suppression standpipe and water in the tunnel construction is lagging.



*South Portal looking NW hauling quarry walls.*

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# Link Light Rail

## S. 200th Link Extension

### Scope

<b>Limits:</b>	South 200th Link Extension consists of 1.6-mile extension of light rail from the SeaTac/Airport Station to South 200th Street.
<b>Alignment:</b>	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.
<b>Station:</b>	Angle Lake Station is located at South 200th Street.
<b>Systems:</b>	Signals, track electrification, and SCADA communications
<b>Budget:</b>	\$383.2 Million
<b>Service:</b>	September 2016
<b>Phase:</b>	Final Design and Construction



Map of S. 200th Link Extension.

### Key Project Activities

- *Design Build Guideway and Station (S440):* OCS power tie-in at Airport Station and OCS punchlist complete. Transfer trip testing complete. LRV live wire and ride quality testing is forthcoming. Need to reconcile various cost issues (existing crack street panels, 54-inch storm repairs, and fee-in-lieu agr) with the City of SeaTac. City Planning Director agreed to finalize by August.
- *Design Build Parking Garage (S445):* Construction continues with garage structure: façade and elevator installation, site restoration and plaza area. The first shipment of elevator components arrived and final shipment by end of next month.
- *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 continues with road improvements on South 200th Street, 28th Ave and Angle Lake parking lot. Potential for unknown conditions while drilling shafts and excavating for culvert installation.

### Closely Monitored Issues

- *S445 DB Parking Garage:* Concern of late delivery and installation of elevator impacting critical path. Elevator manufacturer to ship elevator components in multiple shipment.
- *The project float has been reduced to 12 days.* 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.

### 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.

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	\$13.8	\$13.8	\$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	\$14.2	\$16.9	\$0.4
3rd Party Agreements	\$6.9	\$7.1	\$5.7	\$3.6	\$5.9	\$1.2
Construction	\$275.7	\$282.9	\$234.1	\$220.4	\$245.6	\$37.4
Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$43.5	\$43.5	\$42.9	\$37.9	\$43.5	\$0.0
<b>Capital Total</b>	<b>\$383.2</b>	<b>\$383.2</b>	<b>\$325.9</b>	<b>\$304.4</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>\$325.9</b>	<b>\$304.4</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 \$2.9M, of this \$2.0M was for construction activities. S440 Guideway & Station Design Build contract was \$0.4M, S445 Parking Garage Design Build contract was \$1.2M, S447 was \$0.4M. Construction services were \$0.5M and the remaining expenditures for \$0.4M 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.

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	\$98.6	\$108.0	\$25.0
20 Stations	\$46.4	\$51.3	\$39.3	\$37.9	\$39.9	\$11.4
30 Support Facilities: Yards, Shops	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$34.6	\$55.3	\$56.4	\$44.6	\$57.5	-\$2.2
50 Systems	\$30.8	\$19.9	\$19.2	\$19.0	\$19.4	\$0.5
<b>Construction Subtotal (SCC 10-50)</b>	<b>\$256.6</b>	<b>\$259.6</b>	<b>\$213.6</b>	<b>\$200.2</b>	<b>\$224.8</b>	<b>\$34.7</b>
60 Row, Land, Existing Improvements	\$43.5	\$43.5	\$42.9	\$37.9	\$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	\$69.4	\$66.3	\$68.3	\$3.8
90 Unallocated Contingency	\$19.0	\$8.0	\$0.0	\$0.0	\$6.6	\$1.5
<b>Project Total (SCC 10-90)</b>	<b>\$383.2</b>	<b>\$383.2</b>	<b>\$325.9</b>	<b>\$304.4</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>\$325.9</b>	<b>\$304.4</b>	<b>\$343.2</b>	<b>\$40.0</b>

## Cost Contingency Management

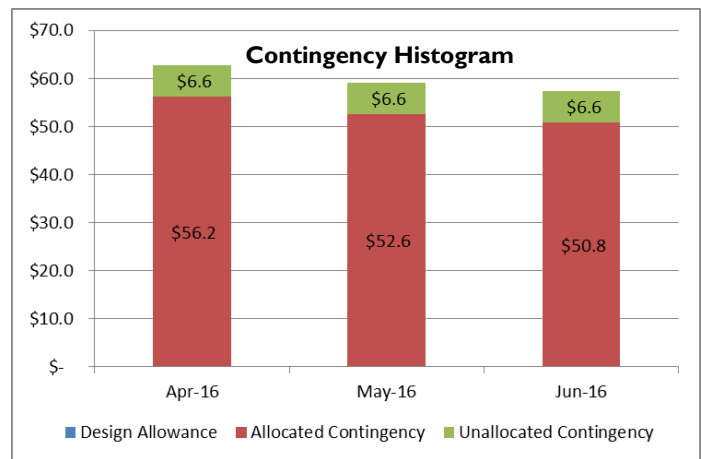
The overall project contingency balance as of this period is \$57.4M.

**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 \$50.8M, a decrease of \$1.8M from the previous period. The reduction was primarily due to construction phase: S447 construction contract executed a settlement change order (\$1.6M) and S445 construction change order returning unused provisional sum (\$0.1M). Other adjustments were due to ROW and administration commitments of \$0.3M.

**Unallocated Contingency (UAC):** This period the UAC balance remains unchanged from last period at \$6.6M.

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%	\$50.8	130.8%
Unallocated Contingency	\$19.0	5.0%	\$ 6.6	17.0%
<b>Total</b>	<b>\$75.5</b>	<b>20.0%</b>	<b>\$57.4</b>	<b>147.8%</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 identified through 4th QTR 2015:

- **THIRD PARTY:** City of SeaTac Delays due to City of SeaTac electrical inspections. (S440).
- **CONSTRUCTION:** Delays due to L&I inspections and Certificate of Occupancy for elevators (S440 and S445).
- **CONSTRUCTION:** Integrating and commissioning the various systems and station components (S440).
- **CONSTRUCTION:** U830 SCADA contract and ST systems integration testing for rail activation (S440).
- **CONSTRUCTION:** Contract documents with design errors are impacting cost and schedule (S447).



### Project Schedule

S440 Guideway is complete and the Systems Contractor has commenced Level 1/2 Commissioning and is expected to commence System Integration Testing 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).

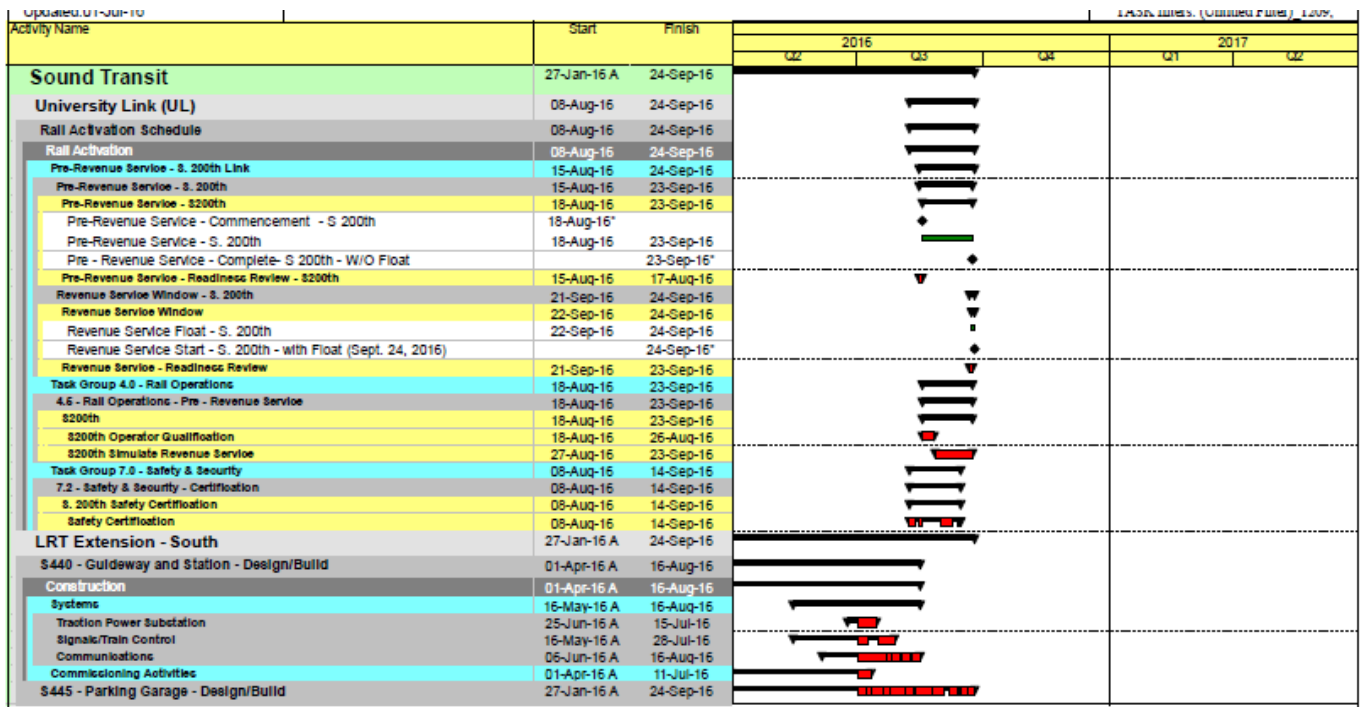
Activity ID	Activity Name	Start	Finish	2016												2017					
				Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun			
Sound Transit		06-May-13 A	13-Nov-16																		
University Link (UL)		08-Mar-16 A	13-Nov-16																		
Rail Activation Schedule		08-Mar-16 A	13-Nov-16																		
Rail Activation		08-Mar-16 A	13-Nov-16																		
Pre-Revenue Service - S. 200th Link		15-Aug-16	24-Sep-16																		
Pre-Revenue Service - S. 200th		15-Aug-16	23-Sep-16																		
Pre-Revenue Service - S200th		18-Aug-16	23-Sep-16																		
A1230 Pre-Revenue Service - Commencement - S 200th		18-Aug-16																			
A1350 Pre-Revenue Service - S. 200th		18-Aug-16	23-Sep-16																		
A1340 Pre - Revenue Service - Complete- S 200th - W/O Float			23-Sep-16																		
Pre-Revenue Service - Readiness Review - S200th		15-Aug-16	17-Aug-16																		
S1310 Readiness Review Meeting - Pre-Revenue Service - S200th		15-Aug-16	17-Aug-16																		
Revenue Service Window - S. 200th		21-Sep-16	24-Sep-16																		
Revenue Service Window		22-Sep-16	24-Sep-16																		
A6680 Revenue Service Float - S. 200th		22-Sep-16	24-Sep-16																		
A1220 Revenue Service Start - S. 200th - with Float (Sept. 24, 2016)			24-Sep-16																		
Revenue Service - Readiness Review		21-Sep-16	23-Sep-16																		
SL110 Readiness Review - Revenue Service - S200th		21-Sep-16	23-Sep-16																		
SL111 Readiness Certified - S200th			23-Sep-16																		
Task Group 4.0 - Rail Operations		18-Aug-16	23-Sep-16																		
4.6 - Rail Operations - Pre - Revenue Service		18-Aug-16	23-Sep-16																		
Task Group 7.0 - Safety & Security		08-Mar-16 A	13-Nov-16																		
7.2 - Safety & Security - Certification		08-Mar-16 A	13-Nov-16																		
LRT Extension - South		06-May-13 A	24-Sep-16																		
S440 - Guideway and Station - Design/Build		06-May-13 A	16-Aug-16																		
S445 - Parking Garage - Design/Build		03-Mar-14 A	24-Sep-16																		
S447 - Station Area Roadway Improvements		21-Jan-15 A	13-Sep-16																		

### Critical Path Analysis

The critical path this period runs through fiber installation and commissioning and system integrations testing and safety certification and Pre-Revenue Service. Elevator installation at the parking garage is reporting to be complete prior to Revenue Service but installation and delivery of materials have not commenced at this time. (See graphic on following page.)

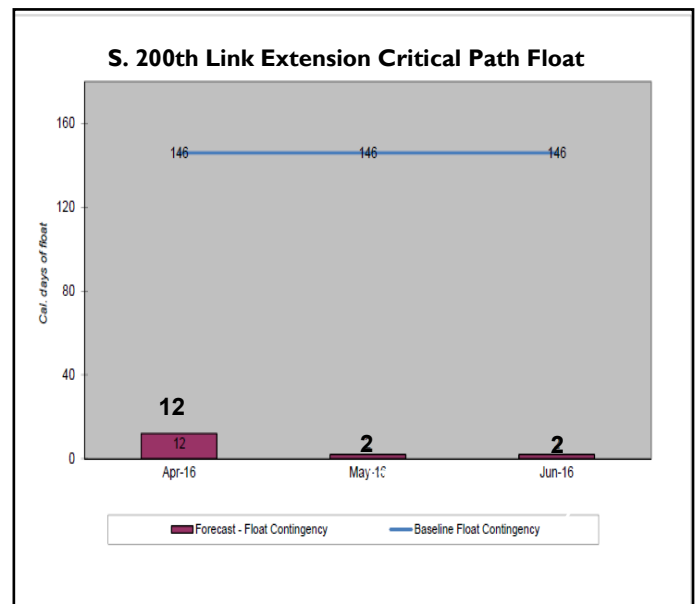


## Critical Path Analysis, continued



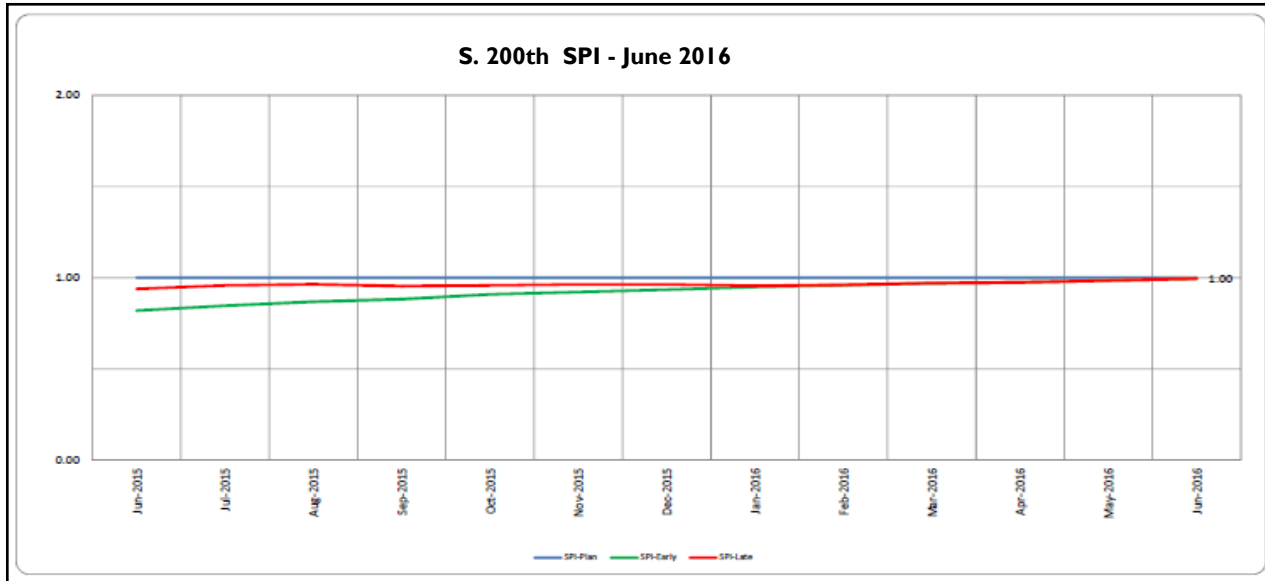
## Critical Path Float

The baseline float contingency for S. 200th Link Extension was 146 days. As of this period, the remaining float is now 2 days 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.



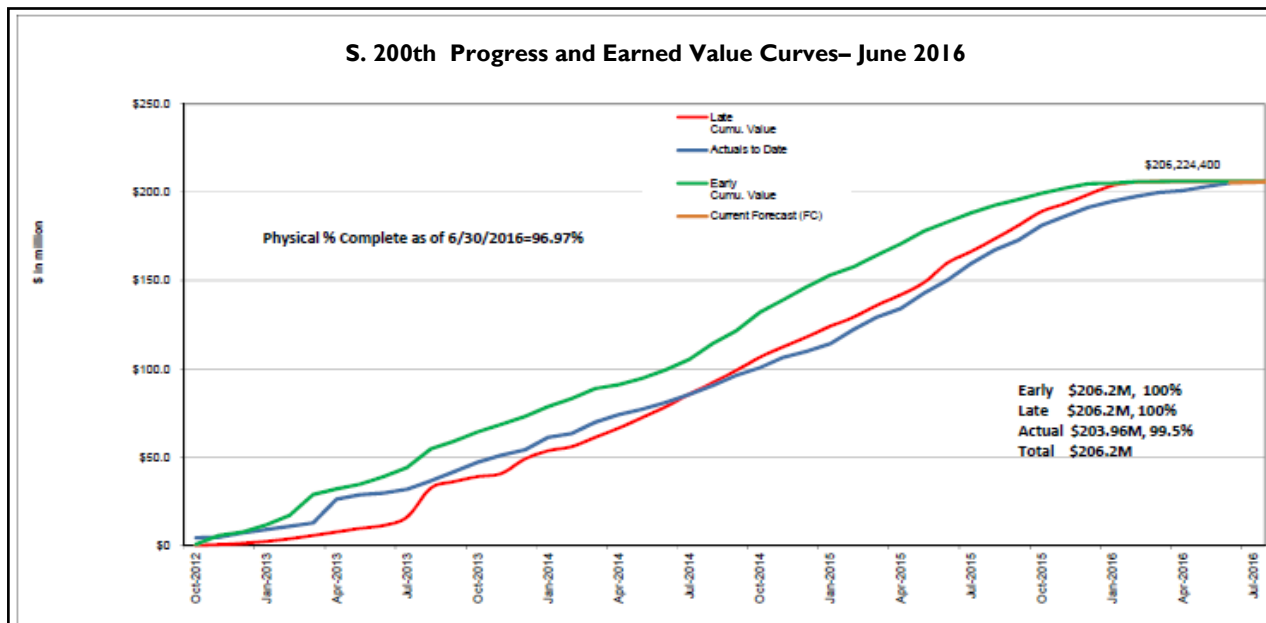
## Schedule Performance Index

The Schedule Performance Index (SPI) for S.200th has risen slightly this period to 0.97 as work focuses on the train systems this period. Systems installers are on site and OCS commissioning has commenced and station work is nearing completion. (See details on individual contract sections.) Progress will continue to be monitored closely.



## Cost Progress Analysis

Overall S. 200th physical % complete is at 96.97%. 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.



### 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 involves 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.

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.

S440 DB Guideway and Station - No new activity.

S445 Parking Garage and Plaza– Completed.

S447 Station Area Roadways - No new activity.

### Construction Safety

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

Data/Measure	June 2016	Year to Date	Project to Date
Recordable Injury/Illness Cases	1	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	0	4	24
Average Number of Employees on Worksite	124	-	-
<b>Total # of Hours (GC &amp; Subs)</b>	<b>20,850</b>	<b>179,835</b>	<b>1,040,599</b>
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	9.59	4.45	3.27
DART Rate	0.00	2.22	2.31
<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

- S440—MRB has dispositioned as Acceptable NCRs

#### Issues

- None to report.

#### Summary

Description	May 2016	Notes
No. of Audits Planned	0	None
No. of Audits Completed	0	None
Reports in Progress	2	S440 Audit
No. of Audits Postponed	0	None

## Community Outreach

- Mailed 1,493 mailers to residents affected by the upcoming Military Road & S. 200th improvements.
- Checked-in with eight directly impacted businesses concerning the closure of S200th.
- Continued working on TCE close-outs with [property owners on S. 200th Link project.
- Distributed emergency drill alerts and place signage in the S. 200th Link Project area notifying neighbors and stakeholders of the Emergency Drill being conducted on June 20-23.

## Sound Transit Board Actions

Board Actions	Description	Date
	None to report.	

## 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).

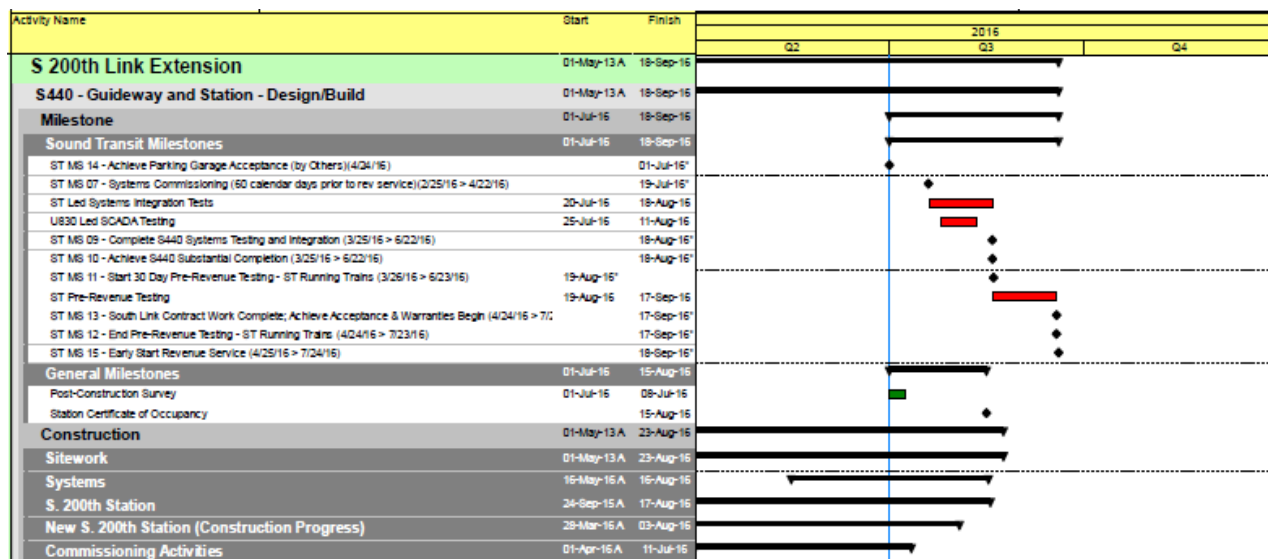
### S440 Contract—Design -Build (Guideway and Station)

#### Current Progress

Level 1 and 2 commissioning activities are well underway and System Integration Testing has commenced. OCS was energized at the end of this period. Allowing the commencement of Dynamic System Integration Testing. Overall the progress of this contract represents 99% physical completion as compared to 96% time to date.

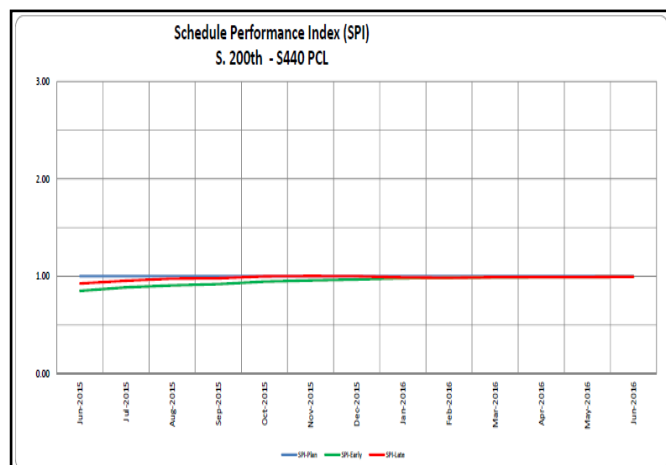
#### Schedule/Critical Path

The schedule update for this period is currently under review and milestones may be adjusted for due to the availability of EIC's. Milestone #7 (Systems Commissioning) which is reporting 88 days of negative float as the Contractor prepares to understand the commissioning requirements for the train systems and coordination with the System Integration Testing. Milestone #9 (System Integration Testing) is reporting 57 days of negative float. Milestone #10 (Substantial Completion) is reporting 57 days of negative float. The critical path this period runs through fiber installation delays and Communications activities and System Testing and Integration. Schedule coordination with the System Integration Testing Plan is expected to continue.



#### Schedule Performance Index

The SPI remains below 1.0 at 0.99. Delays to the commencement of station construction, span erection, and an aggressive baseline schedule continue to plague S440. The lack of EIC availability is now hampering commissioning activities at S440. It is expected that this will improve now that U-Link is under Revenue Service.



# Link Light Rail

## S. 200th Link Extension – Design-Build

### Key Activities

#### Current Period

- *Angle Lake Station/Plaza activities:* Escalator and elevator work continues, continue communication closet electrical work and wire installations. ORCA card readers and TVM bases installed at both stations. Installed platform benches and water meters. Performed tile touch-up at north platform, conducted light level testing, and continued punchlist work.
- *Guideway activities:* Continued various punchlist activities, including OCS, signal, permanent handrail, acoustic barrier panels, fire and standpipe, interior guideway, rail/plinth, and bird netting. Transfer Trip testing was completed. LRV live wire testing and ride quality testing is planned for the end of June. Concrete completed for walkway stairs on guideway deck.
- Continued landscape restoration along 182nd and NAE Line; restoration work along 28th Ave S is nearing completion. Installation of irrigation system continued. Sidewalk and curb ramps installed and finished at 28th & 192nd intersection corners.

#### Next Period

- Continue guideway finishing work.
- Continue station finishing work.
- Continue various site work.
- Continue other miscellaneous work: punchlist work, landscaping and restoration continues.
- Signals/Train Control.
- Commissioning activities.
- Track Access.
- Complete OCS tie-in.

### Closely Monitored Issues

- All System points listed have been turned over to U830 for SCADA programming. Progress will continue to be monitored closely.

### Cost Summary

Present Financial Status	Amount
<b>S440 Contractor—PCL Civil Contractors, Inc.</b>	
Original Contract Value	\$169,000,000
Change Order Value	\$4,673,966
Current Contract Value	\$173,673,966
Total Actual Cost (Amount Billed)	\$171,237,520
Financial Percent Complete:	99%
Physical Percent Complete:	98%
Authorized Contingency	\$13,520,000
Contingency Drawdown	\$4,673,966
Contingency Index*	2.9



Preliminary punchlist walk at the Angle Lake Station.



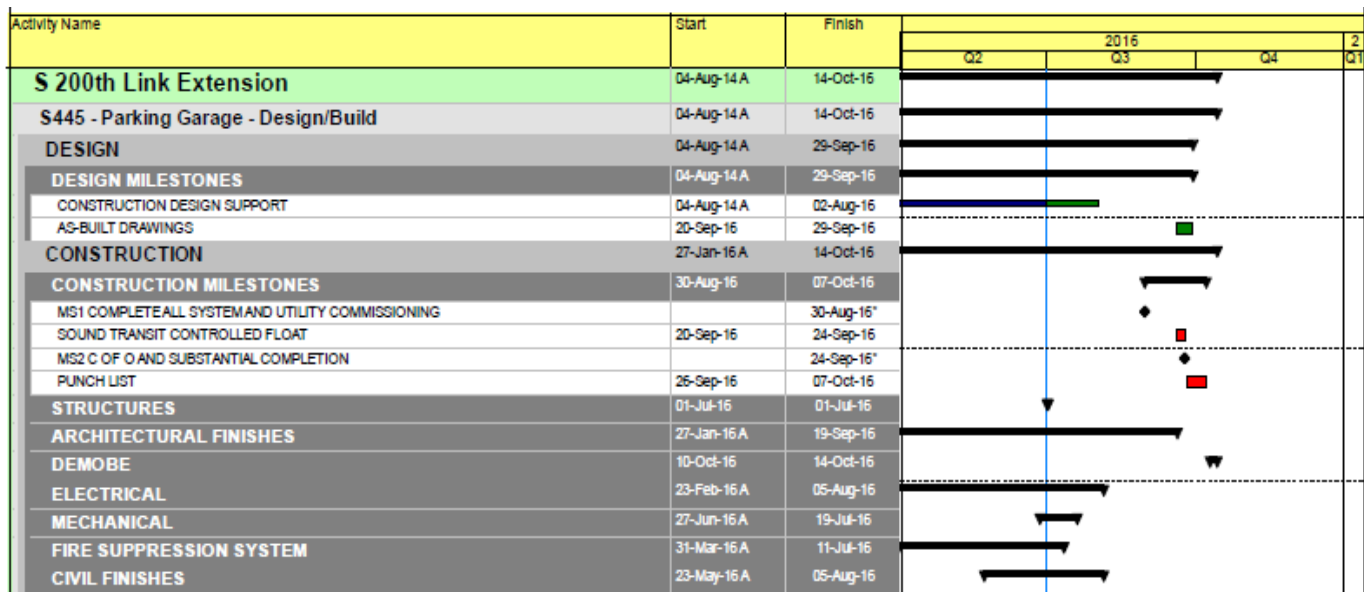
### S445 Contract—Design -Build Parking Garage

#### 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 92% physical completion and against 91% 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.

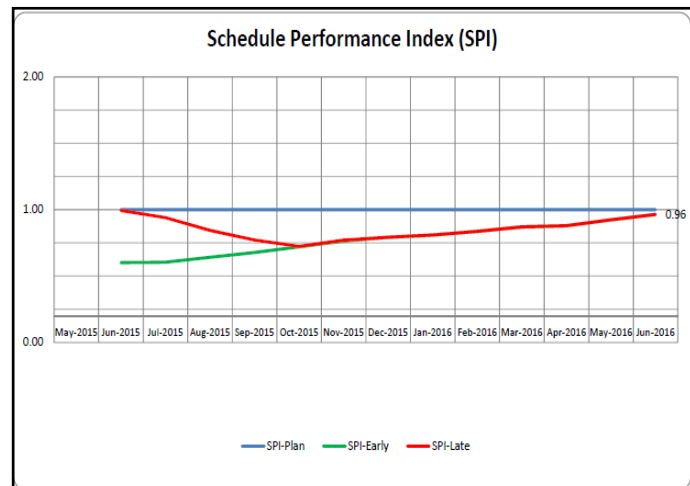
#### Schedule/Critical Path

The May schedule has been submitted. The critical path this period runs through elevator fabrication and elevator installation. Milestone #2 Substantial Completion, is reporting negative 127 days of float with 5 days of owner controlled float intact. Delays persist in procurement of elevator and near critical façade installation. It is expected that schedule delays will continue regarding elevator fabrication and installation.



#### Schedule Performance Index

The SPI has risen slightly this period to 0.96 based on early forecasts. Elevator procurement delays are hampering any recovery efforts and progress on near critical activities has not met schedule durations putting ST milestones at risk.



# Link Light Rail

## S. 200th Link Extension – Design-Build

### Key Activities

#### Current Period

- Continue coordination meetings with ST, RE team and other third party agencies.
- Continued design and construction interface coordination meetings with S440 DB Contractor, and continue construction coordination with S447 contractor.
- Completed installation of Photovoltaic support structure.
- Completed placement of sidewalk sections along S. 200th.
- Completed waterproofing plaza deck.
- Continued façade support structure installation, fire sprinkler installation, PSE screen and chain link fence installation, installation work on FA systems devices and continued structural framing of plaza canopy.
- Began installation of security system, Telecom, PV panels and equipment, façade planks, placement of plaza pavers and landscaping work.

#### Next Period

- Complete façade support installation, structural framing of plaza canopy and landscaping work.
- Continue with fire sprinkler installations, PSE screen and chain link fence installation, work on FA systems devices, security system installation, installation of Telecom, and installation of PV panels and equipment.

- Continue installation of façade planks.
- Continue placement of plaza pavers.
- Continue landscaping work.
- Begin installation of plaza pavers.
- Begin installation of retail storefront glazing.

### Closely Monitored Issues

- The June 2016 schedule update is currently being reviewed. Assessment of liquidated damages has begun for each day the Contractor fails to achieve the currently approved contract milestones.
- 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. The equipment was not included in this shipment. Final shipment is scheduled for 7/25/2016.

### 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:	94%
Authorized Contingency	\$2,398,240
Contingency Drawdown	\$2,054,061
Contingency Index*	1.0



Structural framing of plaza canopy nearing completion.

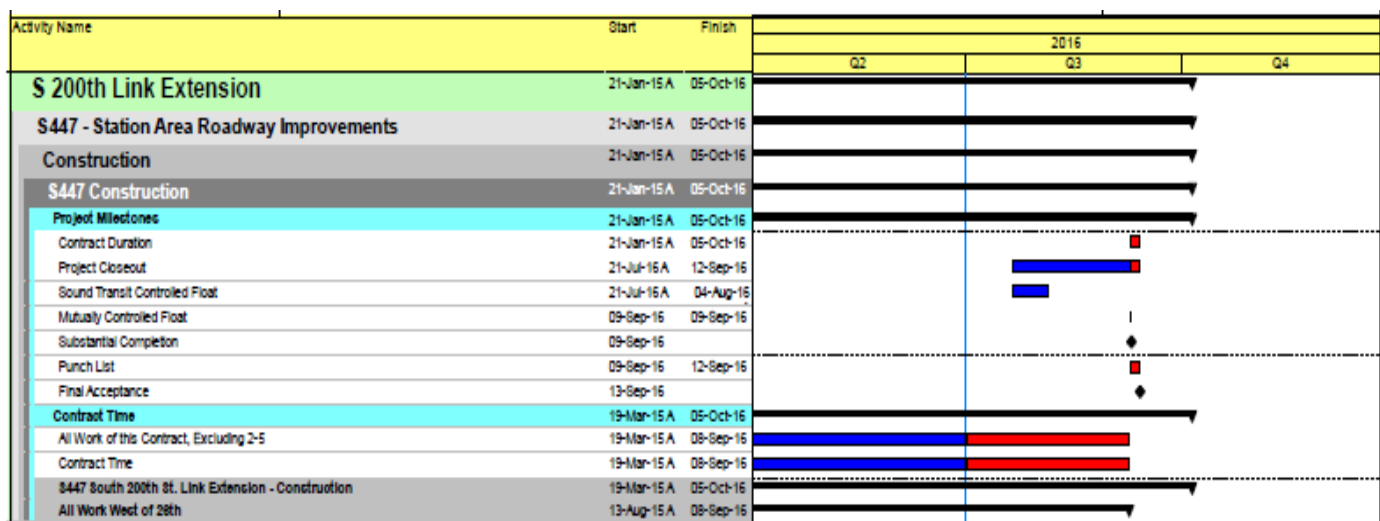
### S447 Contract – Station Area Roadway Improvements and Surface Parking

#### Current Progress

S447 Contractor continues to mitigate for continued constructability issues. Overall this contract is 93% physical completion and 87% duration complete as milestone revisions continue. Milestone revisions have been adjusted last period per change order but delays continued this period.

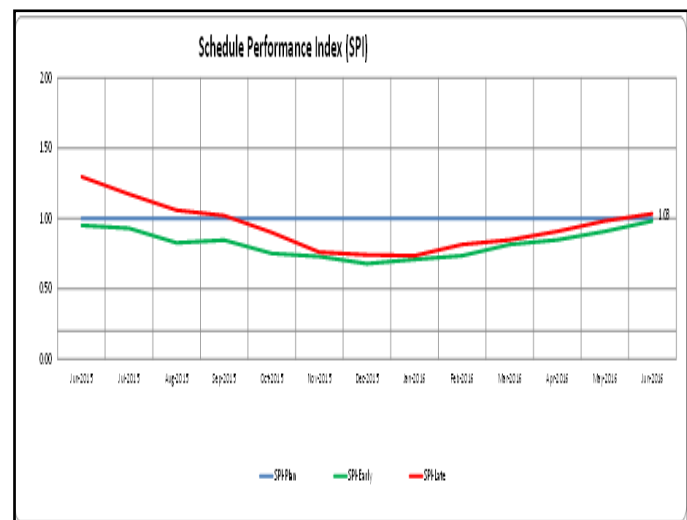
#### Schedule/Critical Path

The June schedule has been submitted. Substantial completion is now forecast for September 9th, 2016 as design revisions to work on S. 200th continue. Meetings with the Contractor have been scheduled to determine the extent of delays. The Contractor will continue to focus efforts on adjacent Contractor interfaces.



#### Schedule Performance Index

The SPI for S447 has risen slightly to 1.08 this period as the Contractor continues to adjust their work due to delays. Negotiations continue with the Contractor to determine extent of delays and finalize contract scope and substantial completion dates.



# Link Light Rail

## S. 200th Link Extension – Design-Build

### Key Activities

#### Current Period

- Continue weekly construction progress meetings.
- Continue coordination meetings with S440 and S445 Contractors.
- Completed curb repairs along east side of north station.
- Completed fence installation on east side of 28th.
- Continue constructing Wall 11 S200th.
- Began culvert and wall installation at Des Moines Creek on S200th; drill shafts and dewatering wells.
- Grading and placing sidewalks between 26th Ave and International Boulevard.
- Installing signal cables for S200th & 28th Ave signals.
- Installing traffic luminaires on S200th, 28th and 26th.
- Raised utility casting to grade on S200th.
- Pavement markings on S200th, Vicart property and C-curb painting on S200th.

#### Next Period

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

### Closely Monitored Issues

- Potential for unknown conditions while drilling shafts and excavation for culvert installation.

### 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



Installing pedestrian signals at the corner of S200th and 28th.

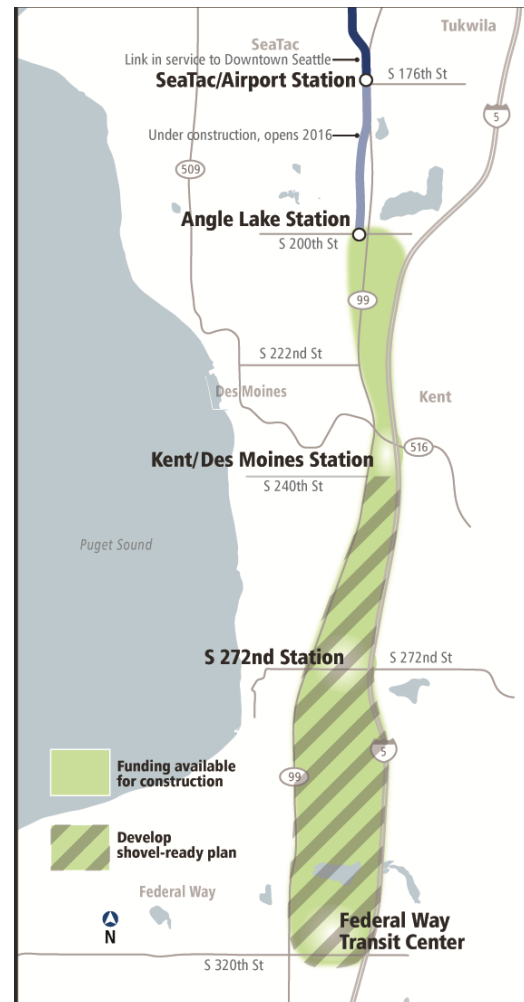
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## Scope

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

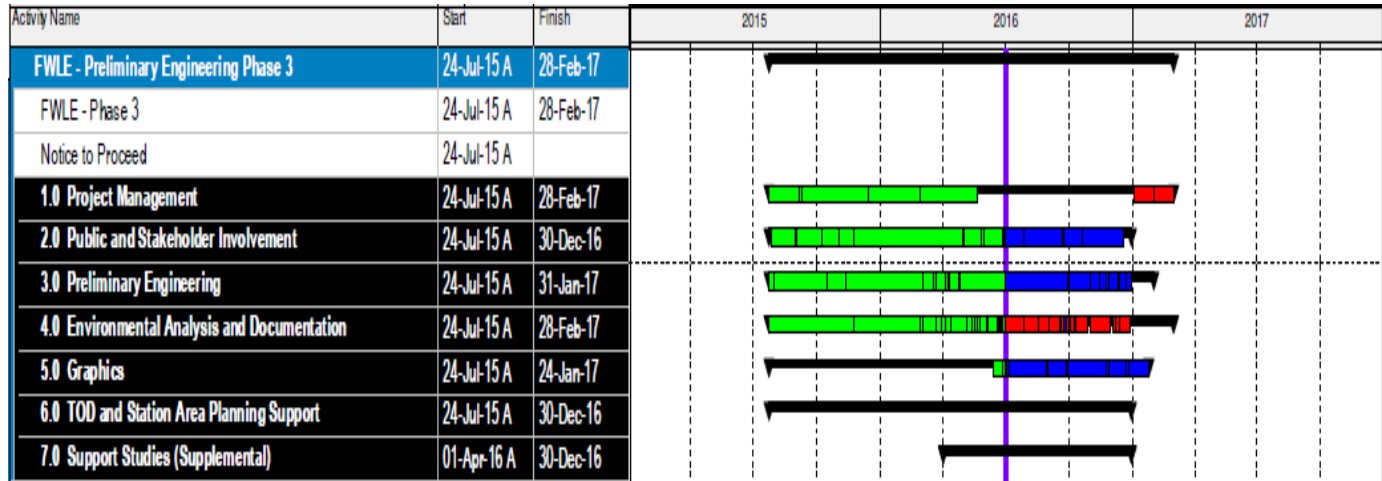
In July 2015, the Sound Transit Board identified the preferred alternative and station locations and approved the Federal Way Link Extension Phase 3 (PE and Final EIS) contract amendment.

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	\$4.2	\$4.3	\$5.1	\$9.4	\$0.0
Preliminary Engineering	\$33.3	\$30.7	\$23.9	\$2.7	\$33.3	\$0.0
Third Parties	\$2.4	\$0.4	\$0.3	\$2.1	\$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>\$36.2</b>	<b>\$29.1</b>	<b>\$12.5</b>	<b>\$48.8</b>	<b>\$0.0</b>

## Project Schedule

The Final EIS and Preliminary Engineering will run through 4th QTR 2016. It is anticipated that the Board will adopt the project and the FTA will issue the ROD in late 2016.



## 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)

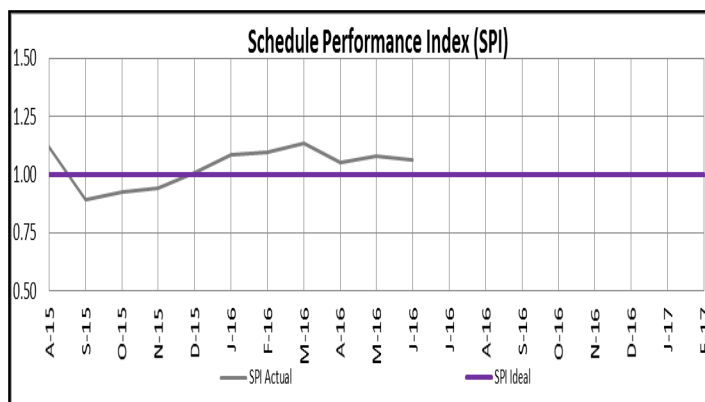
In July 2015, Sound Transit executed an amendment to the professional services agreement with HDR Engineering, Inc. for Phase 3 professional services, including completion of a Final Environmental Impact Statement (FEIS) using the preferred alternative and the other alternatives in the Draft EIS, preliminary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

- Most field survey activities are now complete. Some remaining geotechnical borings and stream survey work is ongoing.
- Continued coordination with key stakeholders regarding review of the Interim PE submittal drawings and potential traffic mitigation measures.
- Continued engineering activities including Value Engineering, Constructability and Contract Delivery workshops in addition to ongoing design development.
- Continued development of the Final EIS. Current activities include review of administrative drafts by FTA.
- Continued coordination with potentially affected property owners.

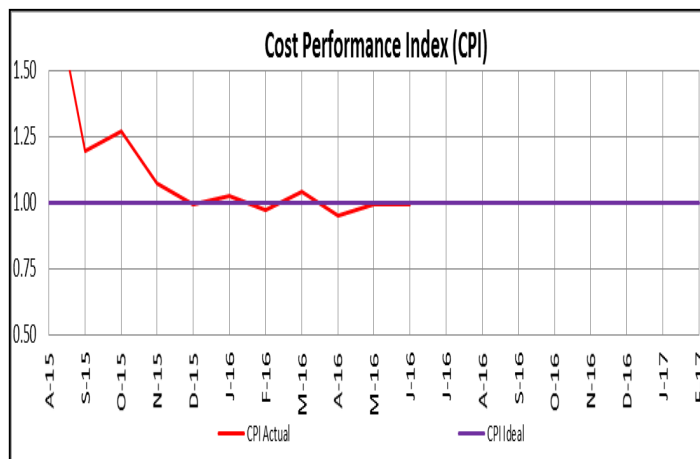
### Phase 3 Schedule Performance

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



### Phase 3 Cost Performance

\$23.2M of the total contract amount, approximately 77%, has been spent through June 2016. Phase 3 expenditures totaled \$11.4M, approximately 62% of the Phase 3 contract total. The Phase 3 percent complete reported at 62%, with an earned value of \$11.3M. The cumulative Cost Performance Index (CPI) is 0.99, 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	\$10,398,424	\$979,114	\$11,377,473
% Spent	57%	5%	62%
Earned Value	\$10,341,914	\$977,834	\$11,319,748
% Complete	57%	5%	62%
<b>SPI</b>	<b>1.07</b>	<b>0.92</b>	<b>1.06</b>
<b>CPI</b>	<b>0.99</b>	<b>1.00</b>	<b>0.99</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.

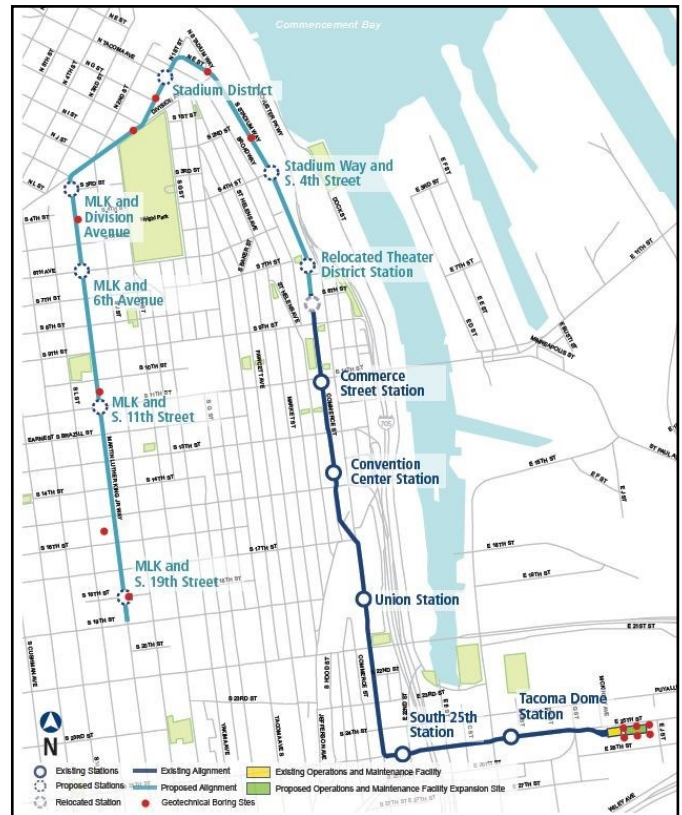
**Stations:** Relocated Theater District Station, Stadium Way & 4th St, Stadium District, MLK Jr. Way and Division, MLK Jr. Way and 6TH Ave, MLK Jr. Way and S. 11th St., and MLK Jr. Way and S. 19th St.

**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

- Procuring consultant for final design contract. Anticipate starting final design work in 3rd QTR 2016.

### Pre-Construction Services

- Begin 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

Phase	Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Budget Versus EFC
Administration	\$10.6	\$2.3	\$2.3	\$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
Light Rail 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>\$8.0</b>	<b>\$33.0</b>	<b>(\$0.0)</b>

### Cost Summary by SCC

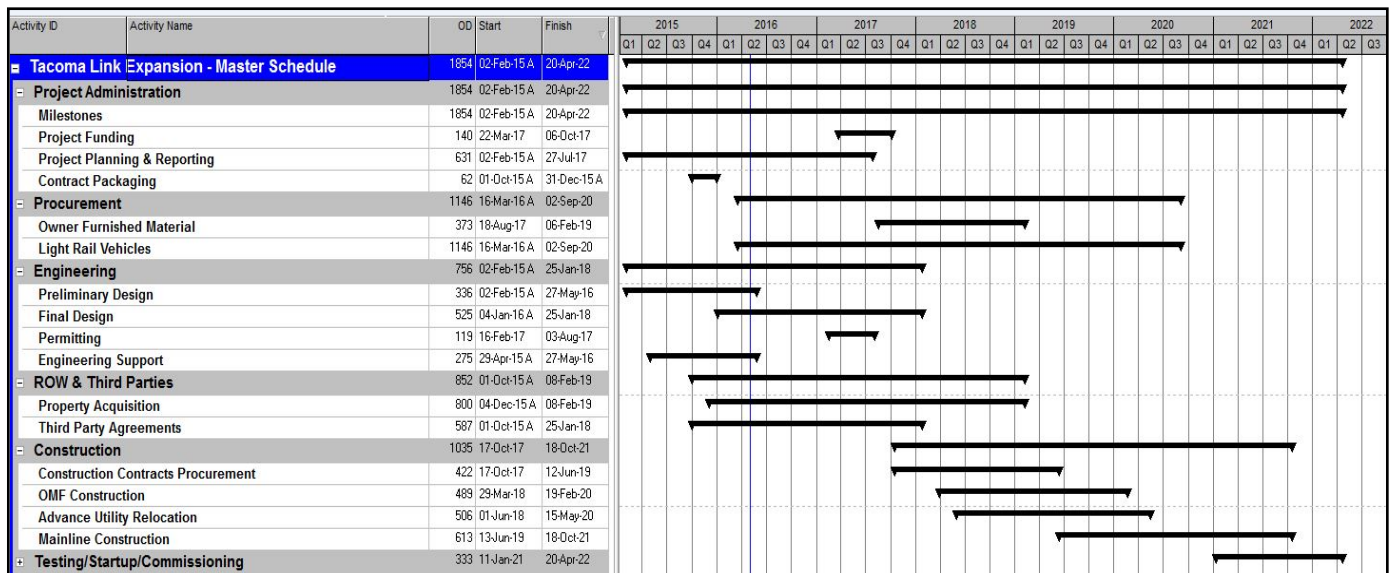
SCC Element	Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 Guideway & Track	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
20 Stations	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
30 Support Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$0.0	\$0.0	\$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	\$7.9	\$7.9	\$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>\$8.0</b>	<b>\$33.0</b>	<b>(\$0.0)</b>

## Risk Management

The Tacoma Link Risk and Contingency Management Plan (RCMP) will be completed in Q2 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 next Tacoma Link Quarterly Risk Review Meeting is targeted for August 2016.

## Project Schedule

The project is currently moving into Phase 4 – Final Design. NTP for the Final Design is scheduled for the end of August. 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
	None to report.	

## Community Outreach

- Hosted to 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

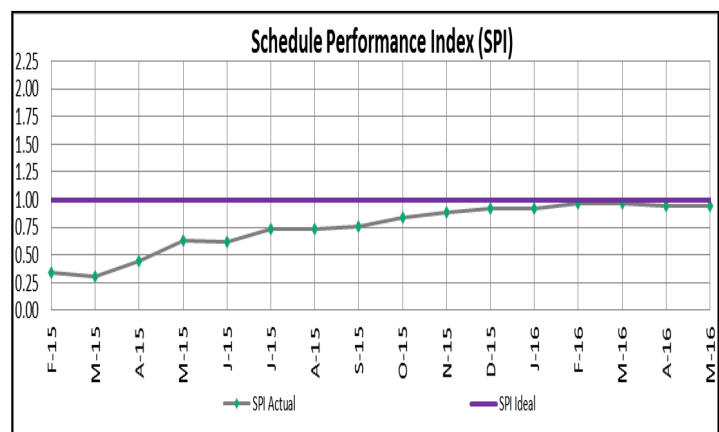
In February 2015 Sound Transit executed an amendment to the professional services agreement with CH2M Hill, Inc. for Phase 3 professional services, including preliminary engineering and environmental work.

### Phase 3 Key Activities

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

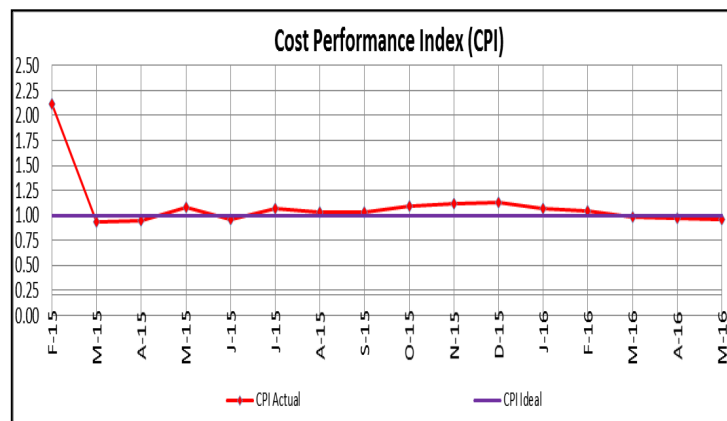
### Phase 3 Schedule Performance

The cumulative Schedule Performance Index (SPI) for the Phase 3 contract is 0.94 through May, 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 (96% complete overall), and the overall SPI will trend toward a value of 1.00 upon completion.



### Phase 3 Cost Performance

\$5.35 M of the total contract amount, approximately 98%, has been spent through May. Phase 3 contract expenditures through May totaled \$2.4 M, approximately 95% of the Phase 3 contract total. The Phase 3 contract percent complete reported at the end of May is 90%, with an earned value of \$2.3 M. The cumulative Cost Performance Index (CPI) through May is .95; indicating costs are higher than the budget planned for work accomplished. The monthly CPI for May was significantly low at 0.42, 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. We requested an EAC from the consultant (Dated 6/6) and 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	\$2,372,379	\$63,900	\$2,436,278
% Spent	95%	<1%	95%
Earned Value	\$2,298,620	\$26,778	\$2,325,398
% Complete	93%	<1%	93%
<b>SPI</b>	<b>0.96</b>	<b>0.53</b>	<b>0.94</b>
<b>CPI</b>	<b>0.98</b>	<b>0.42</b>	<b>0.95</b>

# Link Light Rail

## Link Operations and Maintenance Satellite Facility



### Scope

Sound Transit is reviewing and evaluating current and future light rail storage and maintenance requirements to support the development, design, and construction of a future light rail operations and maintenance facility for proposed system expansion. FTA signed the project Record of Decision on November 4, 2015. The Sound Transit Board approved Phase Gate 4: Entry to Final Design on December 17, 2015.

### Key Project Activities

- Weekly technical meetings are being conducted by the consultant team to develop the Project Requirements.
- Weekly coordination meetings are held with the consultant and ST Operations/Facilities to review the project program.
- TOD market study and development complete.
- Consultant continued work on procurement RFP documents (final version). Reviews with ST, Bellevue and King County continues.
- Environmental permit work underway for applications.
- DBPM RFQ document was issue mid-June and SOQ are scheduled to be due end of July.
- Meetings with Bellevue regarding TOD continue – Implementation Agreement being negotiated with the City of Bellevue to address MOU requirement to have a Development Agreement in place at time of project baselining.
- Met with City of Bellevue to discuss permit process and early permits.
- Project is scheduled to present project baseline and Phase Gate 5 & 6 materials next month to Capital Committee and Board.
- Property acquisition activities continue, however there are challenges with initial appraisals, affecting schedule slippage and potentially cause availability of some properties into 2018.

### Program Cost

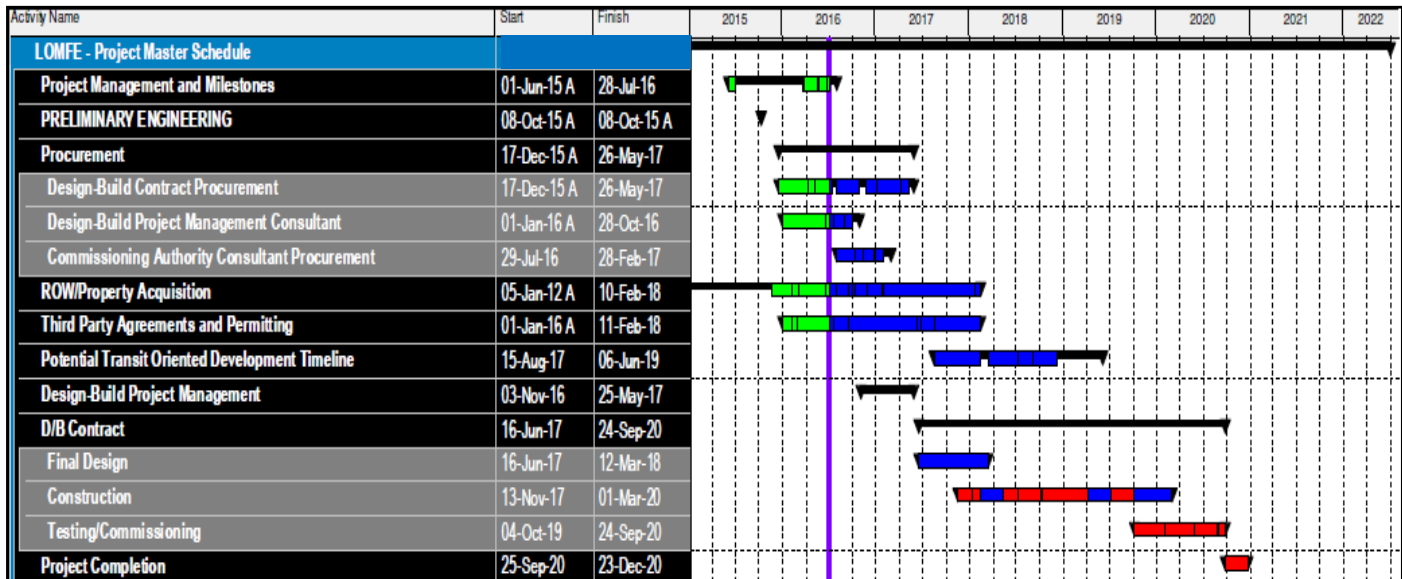
In December 2015, the Sound Transit Board authorized the project to advance through Phase Gate 4 Final Design and increased the Adopted Capital Budget for the OMSF from \$36.8M to \$133.6M. Table shown in millions.

Phase	Adopted Budget	Commitment to Date	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Budget Versus EFC
Administration	\$3.2	\$1.7	\$1.7	\$1.5	\$3.2	\$0.0
Preliminary Engineering	\$10.2	\$8.8	\$7.8	\$1.3	\$10.2	\$0.0
Construction Services	\$0.6	\$0.0	\$0.0	\$0.6	\$0.6	\$0.0
3rd Party Agreements	\$1.7	\$0.0	\$0.0	\$1.7	\$1.7	\$0.0
ROW	\$118.0	\$24.7	\$23.3	\$93.3	\$117.9	\$0.0
<b>Total</b>	<b>\$133.6</b>	<b>\$35.2</b>	<b>\$32.8</b>	<b>\$98.4</b>	<b>\$133.6</b>	<b>\$0.0</b>



## Program Schedule

The project schedule is presented below. The schedule reflects the current Design Build approach that has been determined through multiple project delivery workshops. Sound Transit is preparing a conceptual schedule to show the remaining preliminary engineering duration to support the design build procurement.



## Sound Transit Board Actions

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

Motion Number	Description	Date
	None to report.	

## 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 Satellite Facility (OMSF) project in September 2014. Delivered Final Phase 2 Baseline Schedule December 2014.

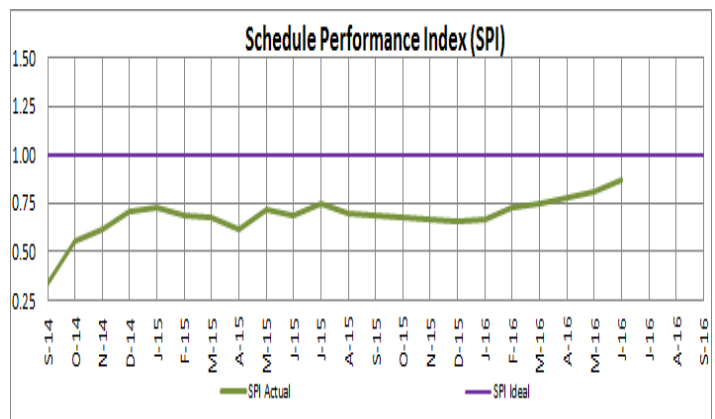
### Phase 2 Key Activities

- 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 OMSF spaces and equipment working closely with Operations and Facilities.
- ST facilities staff reviewing program requirements.
- Preparing for OMSF Project Baseline.

### Phase 2 Schedule Performance

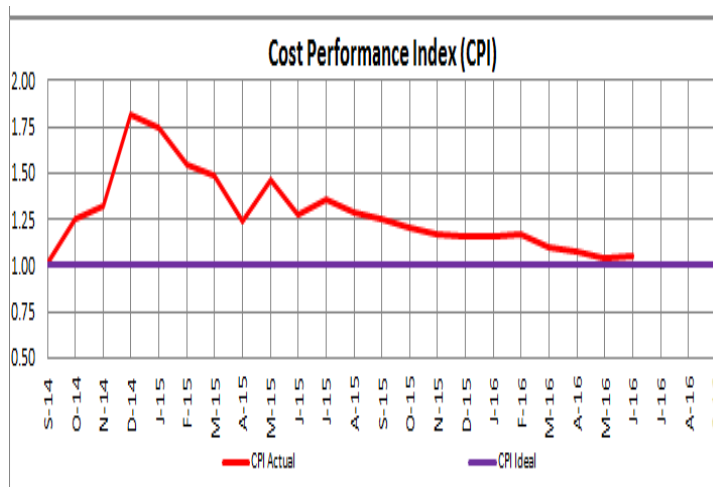
The cumulative Schedule Performance Index (SPI) trends at 0.86 through June 2016, which means that cumulative work accomplished is less than work planned.

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

\$4.4M of the total Phase 2 contract amount, approximately 82%, was spent through June 2016. The Phase 2 percent complete is 86%, with an earned value of \$4.6M. The cumulative Cost Performance Index (CPI) is 1.05, meaning that expenditures are less than the earned value.



Phase 2 Performance	Previous Period	Current Period	Cumulative To Date
Amount Invoiced	\$4,108,649	\$260,657	\$4,108,649
% Spent	77%	5%	82%
Earned Value	\$4,282,551	\$318,601	\$4,601,152
% Complete	80%	3%	86%
<b>SPI</b>	<b>0.81</b>	<b>13.46</b>	<b>0.86</b>
<b>CPI</b>	<b>1.04</b>	<b>1.22</b>	<b>1.05</b>

# Link Light Rail ST2 LRV Fleet Expansion

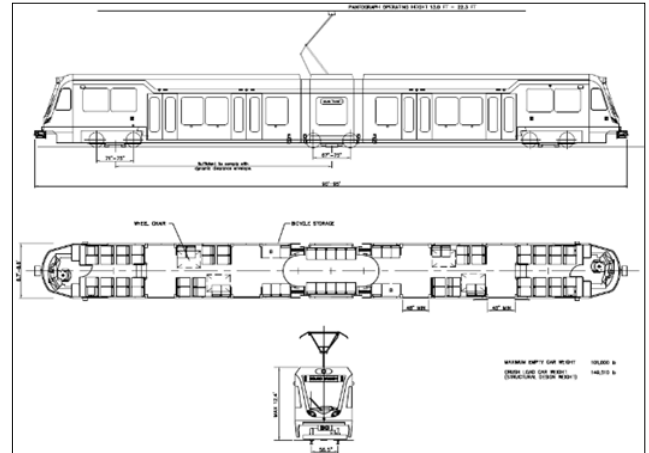


## Project Summary

**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

- Cost proposals were received at the end of March (on schedule).

## 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.)*

TIFIA is financing 28% of this project. To date, approximately \$1.6M has been expended. This last period saw expenditures towards meetings with potential car builders and preparation of BAFO documents.

### 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
<b>Construction Subtotal (SCC 10-50)</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>
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
<b>Capital Total (SCC 10-90)</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 Contingency Management

### Contingency Status

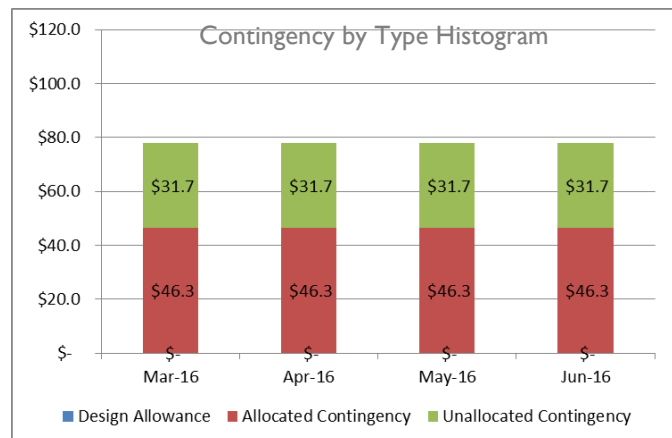
The project's baseline budget, which was approved by the Sound Transit Board in September 2015 and includes a total of \$78.0M of Total Contingency. Overall contingency is currently 10.7% of remaining work.

*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>



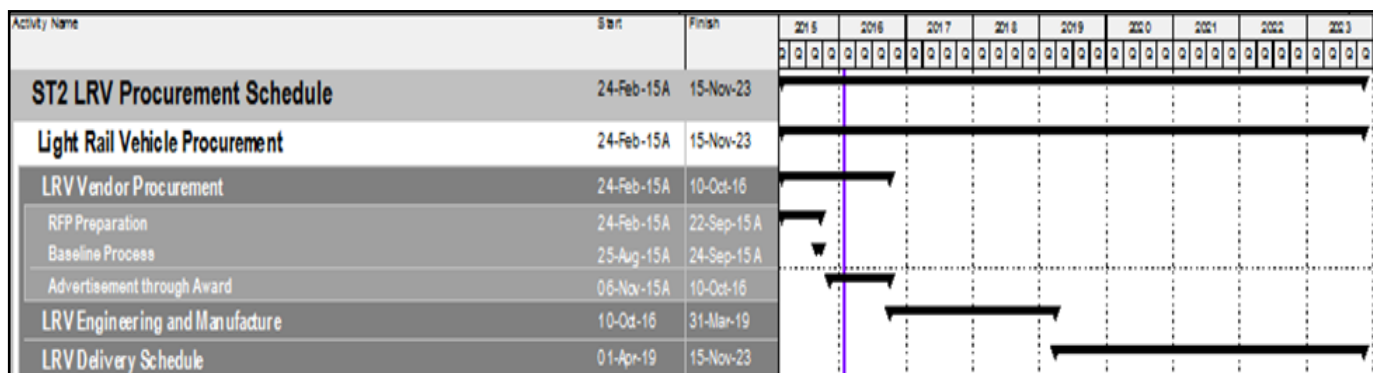
## Risk Management

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 – MAY 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
Sr. Specifications Writer	Civil & Structural Design	March 2016

*\*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
Construction Manager	Lynnwood Link Extension	October 2015
Sr. Project Manager	O&M Satellite Facility	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*
Real Property Coordinator	Lynnwood/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
Deputy Director	Systems Engin. and Integration	2016 Attrition
Sr. Systems Engineer	LRV Procurement and Testing	2016 Attrition
Sr. Scheduling Engineer	East Link Extension	2016 Attrition
Principal Construction Manager	Lynnwood Link Extension	2016 Attrition
Assistant Property Manager	Property Management	2016 Attrition
Deputy Project Director	Lynnwood Link	January 2016
Construction Manager	Federal Way Link Extension	March 2016
Sr. Real Property Agent	Relocation	March 2016
Sr. Specifications Writer	Civil & Structural Design	March 2016
Assistant Permit Administrator	Fed. Way/Lynnwood Link Extensions	April 2016
Deputy Executive Director	Project Management	April 2016

*\*Attrition resulting from internal promotion.*

## Project Staffing – Link Light Rail Program continued

There were 571.2 (102% 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 May. Staffing for the each of the Link Extensions with the exception of the Lynnwood Link Extension and the Tacoma Link Expansion was above plan. Staffing for the University Link Extension provided oversight of resolution of punch list and safety certification issues and initiated construction contract closeout activities. Staffing for the East and Northgate Link Extensions exceeded to plan as construction of East Link was initiated and as progress in the Northgate Link Extension construction and procurement of the trackwork and Northgate Station, elevated guideway and parking structure progressed. Staffing for the S. 200th Link Extension provided oversight of on-going construction and contract administration. Consultant staffing for the Lynnwood Link Extension and Tacoma Link Expansion was 32% and 23% of plan respectively; internal staffing for the Lynnwood Link Extension was 76% of plan. Internal staffing for the Tacoma Link Expansion was 43% of plan.

During plan development it was assumed that final design for Lynnwood would begin in 4Q 2015 and in 1Q 2016 for the Tacoma Link Expansion; final design the Lynnwood Link Extension began in May. The design of the Tacoma Link Expansion will begin in 3Q 2016. Staffing variance to plan for the month by project follows.

May 2016 - Staffing Plan Variance Summary												
Project	Consultant Staff				Sound Transit Staff				Total (YTD)			
	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	17.9	18		20.3	21.3	1	105%	20.3	68.1	47.8	336%
Northgate Link Extension	73.9	86.4	13	117%	47.7	38.8	-9	81%	121.6	130.8	9.2	108%
South 200th Extension	9.4	23.1	14	246%	17.4	23.5	6	135%	26.8	46.0	19.2	172%
East Link Eextension	132.4	214.9	83	162%	79.7	69.5	-10	87%	212.1	277.9	65.8	131%
Lynnwood Link Extension	115.0	36.9	-78	32%	40.3	30.7	-10	76%	155.3	38.9	-116.4	25%
Tacoma Link Expansion	11.0	2.5	-9	23%	13.0	5.6	-7	43%	24.0	10.9	-13.2	45%
<b>Total</b>	<b>341.7</b>	<b>381.7</b>	<b>40</b>	<b>112%</b>	<b>218.5</b>	<b>189.4</b>	<b>-29.0</b>	<b>87%</b>	<b>560.1</b>	<b>572.5</b>	<b>12.3</b>	<b>102%</b>



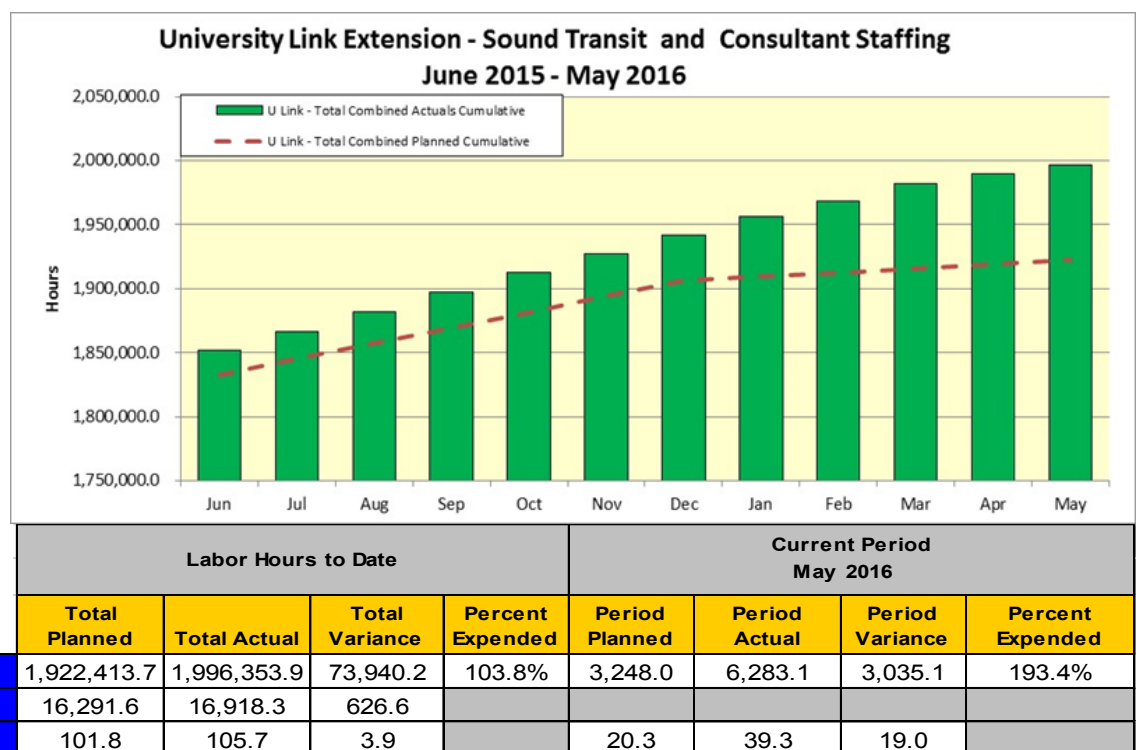
# Link Light Rail Staffing Report



## University Link Extension Staffing

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

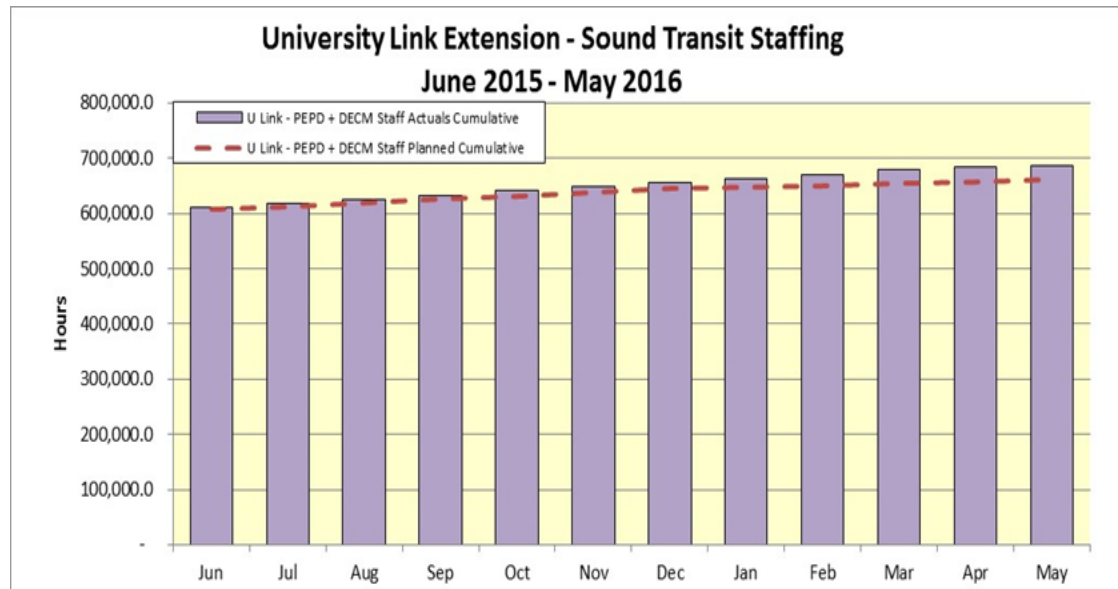
There were 39.3 FTE assigned to the University Link Extension in May including 17.9 consultant and 21.3 internal FTE. As was expected with the opening of the University Link Extension, staffing for the month decreased 23% (11.9 FTE) from April. Consultant staffing was well ahead of plan as the 2016 Staffing 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 193% of plan. Year-to-date staffing (68.1 FTE/mo.) is trending 236% (47.8 FTE/mo.) above plan. Cumulatively, since August 2006, average monthly project staffing is within 4% (3.9 FTE/mo.) of plan.



## University Link Extension Staffing

### Internal Resource Commitments to University Link Extension

There were 21.3 internal FTE assigned to the University Link Extension in May. Internal staffing was 5% (1 FTE) above plan and 36% (7.7 FTE) below April staffing. Cumulatively, since August 2006, average monthly internal staffing is within 4% (1.4 FTE/mo.) of plan.



	Labor Hours to Date				Current Period May 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	660,643.6	687,025.8	26,382.2	104.0%	3,248.0	3,414.8	166.8	105.1%
<b>Monthly Average</b>	5,598.7	5,822.3	223.6					
<b>Monthly FTE</b>	35.0	36.4	1.4		20.3	21.3	1.0	

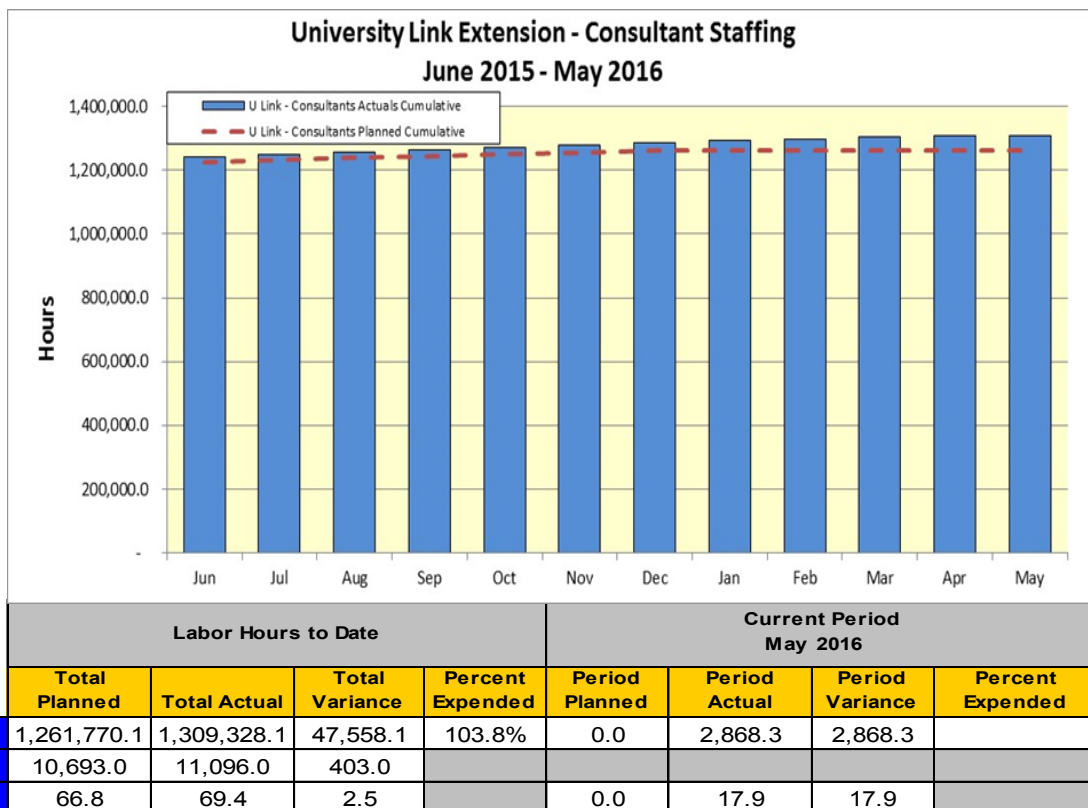
# Link Light Rail Staffing Report



## University Link Extension Staffing

### Consultant Resource Commitments to University Link Extension

During May, 17.9 consultant FTE were assigned to the University Link Extension. The 2016 Staffing Plan did not account for consultant support in 2016 and beyond; May consultant staffing was 19% (4.2 FTE) below April staffing. Cumulatively, since August 2006, average monthly consultant staffing is trending within 4% (2.5 FTE/mo.) of plan.

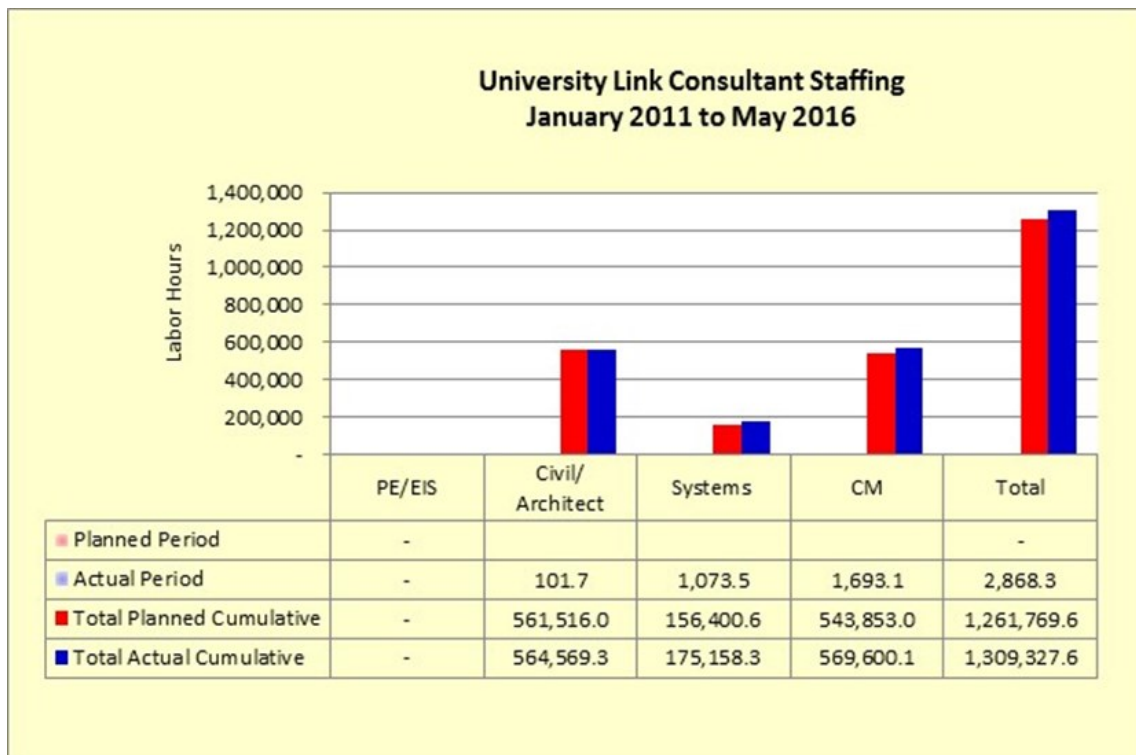


## University Link Extension Staffing

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

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

In May, civil engineering consultant staffing (0.6 FTE) for the University Link Extension accounted for 3% of consultant staffing with the remainder providing systems (37% 6.7 FTE) and construction management (60% 10.6 FTE) support. Cumulative staffing since August 2006 for civil and systems consultants are trending 0.54% (0.2 FTE/mo.), and 12% (1 FTE/mo.) above plan respectively. Cumulative construction management consultant staffing is trending 4.7% (1.4 FTE/mo.) above plan.



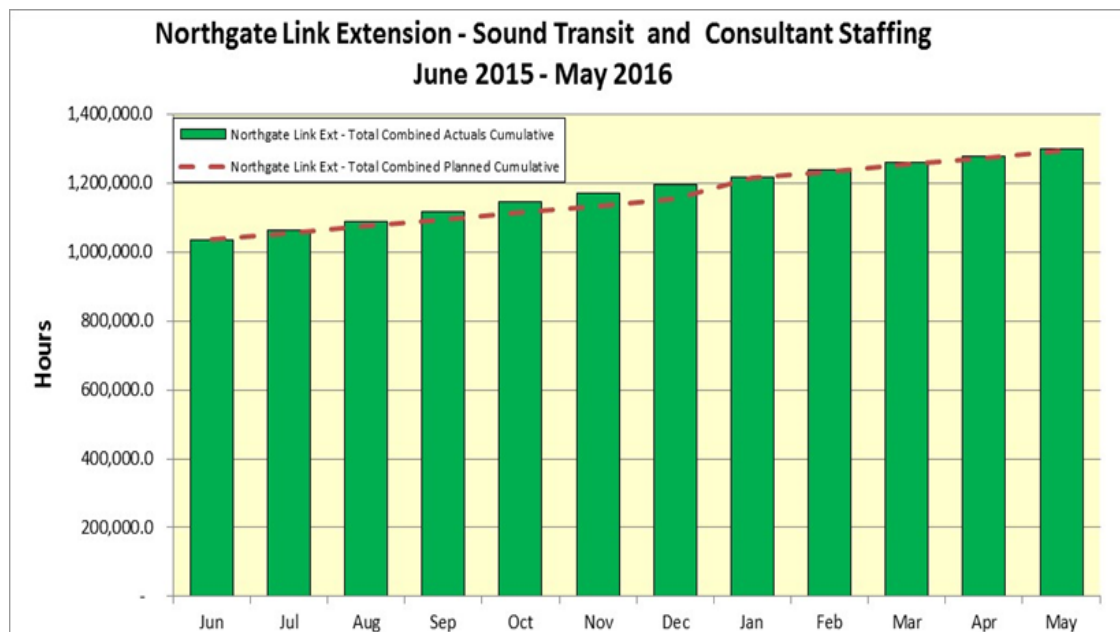
# Link Light Rail Staffing Report



## Northgate Link Extension Staffing

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

During May 38.8 internal and 86.4 consultant FTE were assigned to the Northgate Link Extension. This is a consistent with staffing in April and is 3% (3.6 FTE) above plan; year to date staffing of 130.8 FTE/mo. is trending 8% (9.2 FTE/mo.) above plan. Cumulatively since January 2011 average monthly staffing is trending with plan.

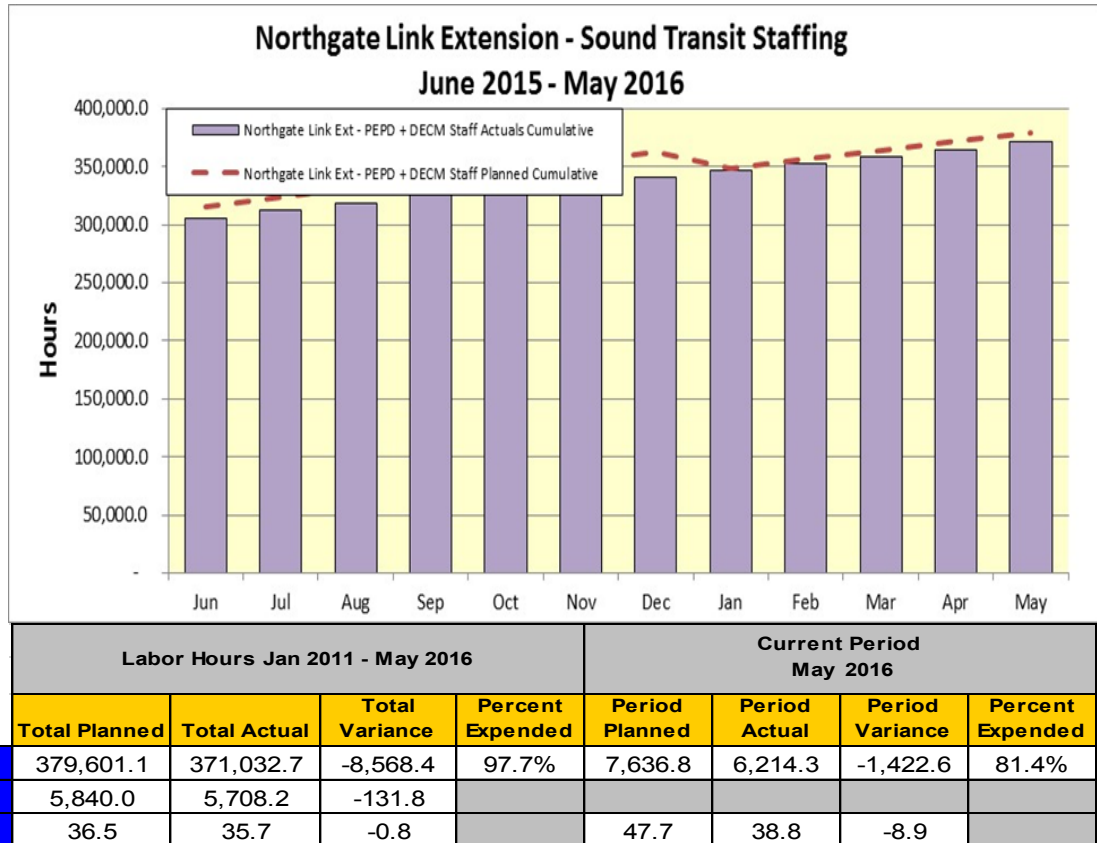


	Labor Hours Jan 2011 - May 2016				Current Period May 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	1,292,351.1	1,298,348.0	5,996.9	100.5%	19,460.8	20,040.7	579.9	103.0%
<b>Monthly Average</b>	19,882.3	19,974.6	92.3					
<b>Monthly FTE</b>	124.3	124.8	0.6		121.6	125.3	3.6	

## Northgate Link Extension Staffing

### Internal Resource Commitments to Northgate Link Extension

Internal staffing in May (38.8 FTE) decreased 6% (2.2 FTE) from April and was 19% (8.9 FTE) below plan. Cumulatively, since January 2011, average monthly internal staffing (35.7 FTE/mo. is trending within 3% of plan.



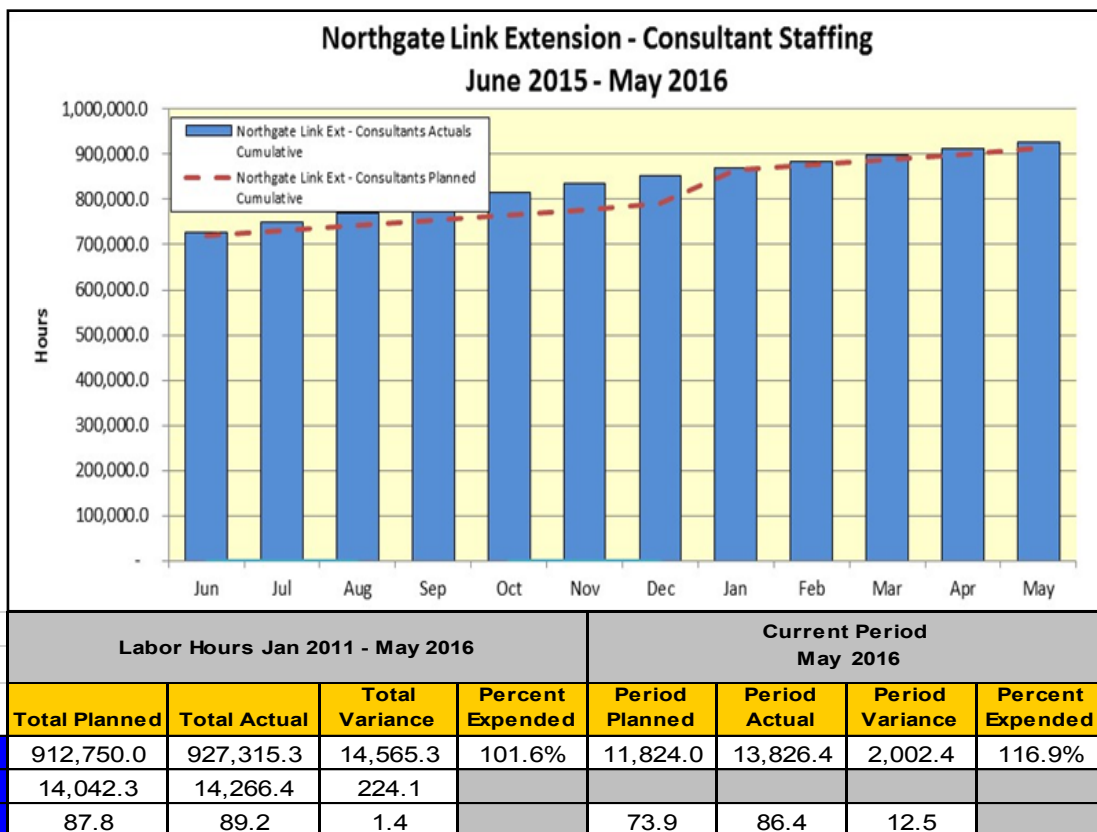
# Link Light Rail Staffing Report



## Northgate Link Extension Staffing

### Consultant Resource Commitments to Northgate Link Extension

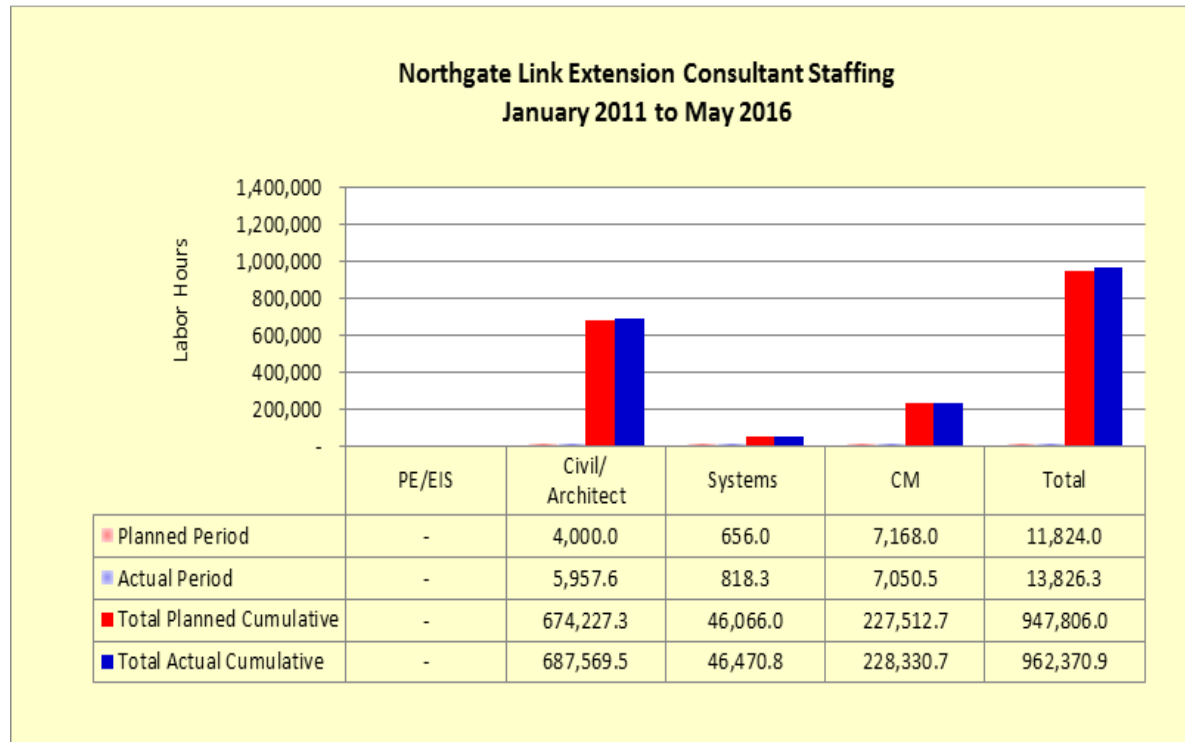
In May, 86.4 consultant FTE were assigned to the Northgate Link Extension; consultant staffing was above plan by 17% (12.5 FTE) and was 2% (2.1 FTE) below April staffing. Cumulatively, since January 2011, average monthly consultant utilization (89.2 FTE/mo.) is trending within 2% of plan.





## Northgate Link Extension Staffing

### Consultant Resource Commitments to Northgate Link Extension



Consultant utilization by discipline follows:

- Civil/architecture consultant utilization in May (37.2 FTE) was consistent with April staffing and was 49% (12 FTE) above plan. Cumulatively since January 2011, average civil engineering/architecture consultant staffing of 66.1 FTE/mo. is trending with plan.
- Systems consultant utilization (5.1 FTE) was consistent with April and was 25% (1 FTE) above plan. Since January 2011, average monthly Systems consultant staffing is trending with plan.
- CM consultant staffing in May (44.1 FTE) was 5% (2.3 FTE) below April staffing and was 2% (0.7 FTE) below plan. Cumulatively, since January 2011, average monthly CM consultant staffing (22 FTE/mo.) is trending with plan.

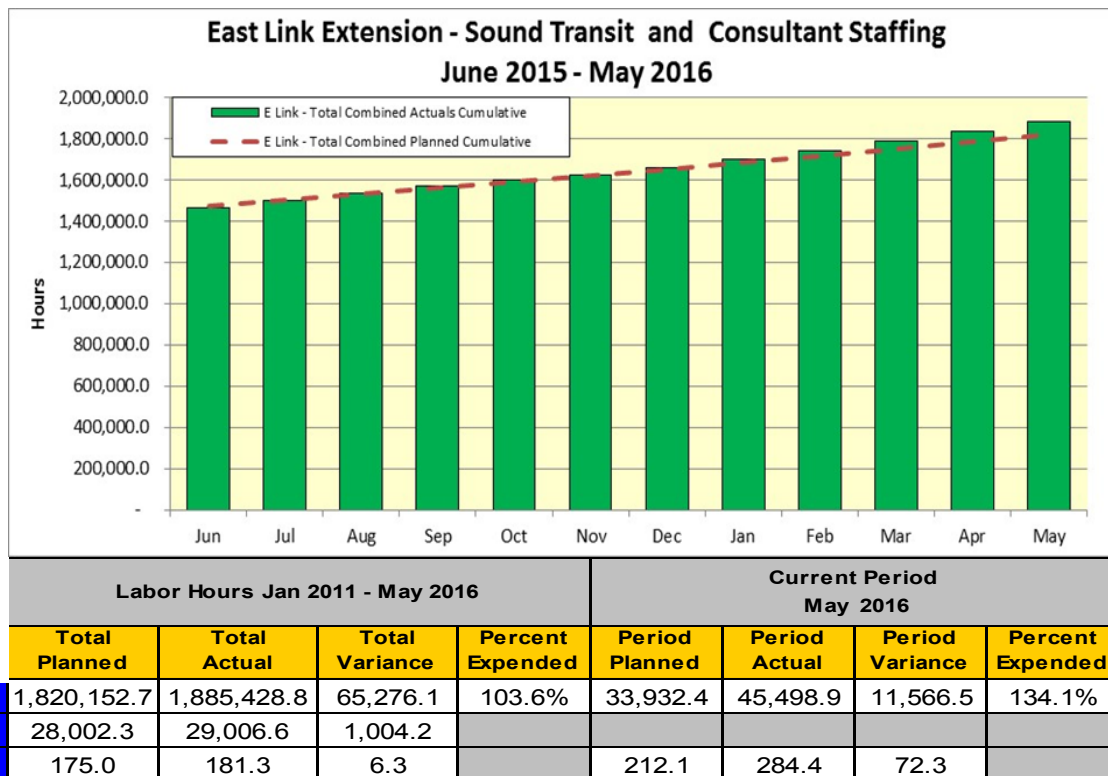
# Link Light Rail Staffing Report



## East Link Extension Staffing

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

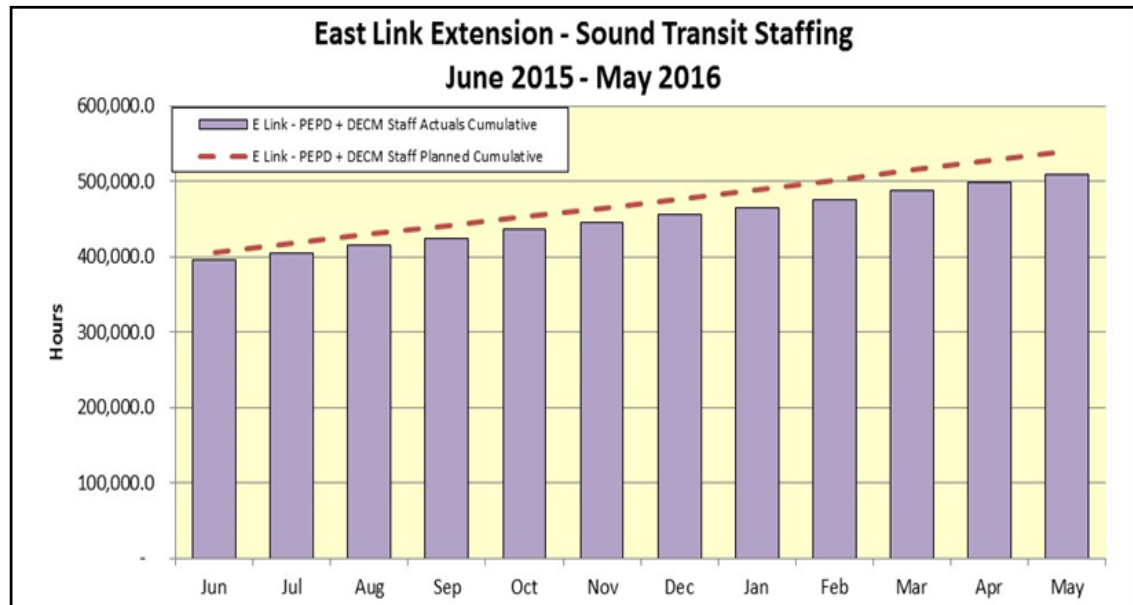
Staffing for the East Link Extension in May (284.4 FTE) decreased 13% (40.8 FTE) from April and was 34% (72.3 FTE) above plan. Year-to-date staffing of 277.9 FTE/mo. is 31% (65.8 FTE/mo.) above plan; cumulatively since January 2011, average monthly staffing of 181.3 FTE/mo. is 3.6% (6.3 FTE/mo.) above plan.



## East Link Extension Staffing

### Internal Resource Commitments to East Link Extension

During May internal staffing for the East Link Extension (69.5 FTE) was 4% (3 FTE) above April staffing and was 13% (10.2 FTE) below plan. Cumulatively, since January 2011, average monthly internal staffing is trending 5.7% (3 FTE/ mo.) below plan.



	Labor Hours Jan 2011 - May 2016				Current Period May 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	540,269.4	509,297.5	-30,971.9	94.3%	12,753.6	11,114.8	-1,638.9	87.1%
<b>Monthly Average</b>	8,311.8	7,835.3	-476.5					
<b>Monthly FTE</b>	51.9	49.0	-3.0		79.7	69.5	-10.2	

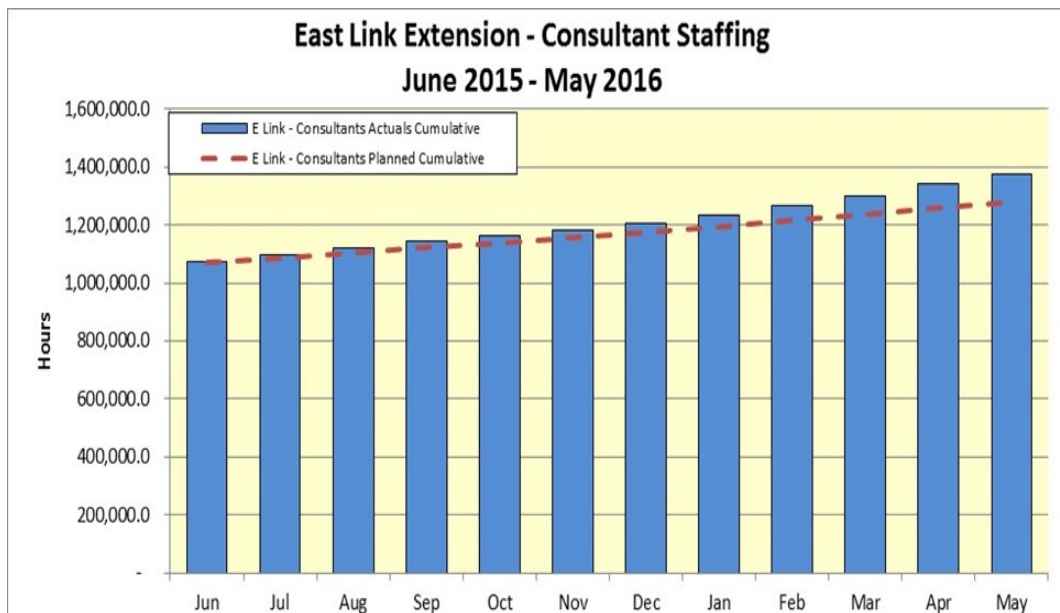
# Link Light Rail Staffing Report



## East Link Extension Staffing

### Consultant Resource Commitments to East Link Extension

There were 214.9 consultant FTE assigned to the East Link Extension during May. Consultant staffing decreased 17% (43.8 FTE) from April and was 62% (82.5 FTE) above plan. Cumulatively since January 2011, average monthly consultant staffing is trending 7.5% (9.3 FTE/mo.) above plan.

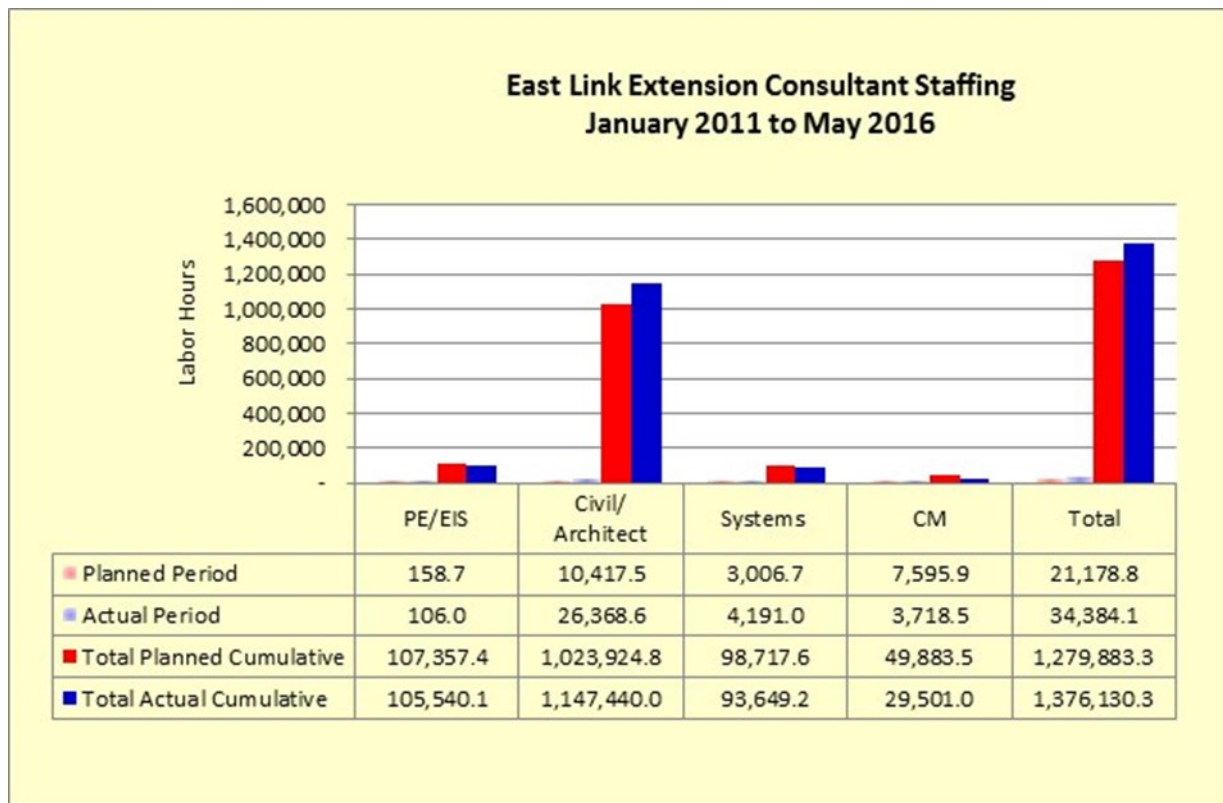


	Labor Hours Jan 2011 - May 2016				Current Period May 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	1,279,883.3	1,376,131.3	96,248.0	107.5%	21,178.8	34,384.1	13,205.3	162.4%
<b>Monthly Average</b>	19,690.5	21,171.3	1,480.7					
<b>Monthly FTE</b>	123.1	132.3	9.3		132.4	214.9	82.5	

## East Link Staffing

### Consultant Resource Commitments to East Link, continued

In May, civil engineering consultant staffing (164.8 FTE) was 77% of consultant staffing. Civil engineering consultant staffing was 20% (41 FTE) below April staffing and 153% (99.7 FTE) above plan. Systems consultant staffing (26.2 FTE) was 12.2% of consultant staffing and was 5.5% (0.9 FTE) below April staffing. Systems consulting was 39% (7.4 FTE) above plan. There was 0.7 consultant FTE performing Preliminary Engineering (PE) and 23.2 FTE (51% below plan) providing construction management.



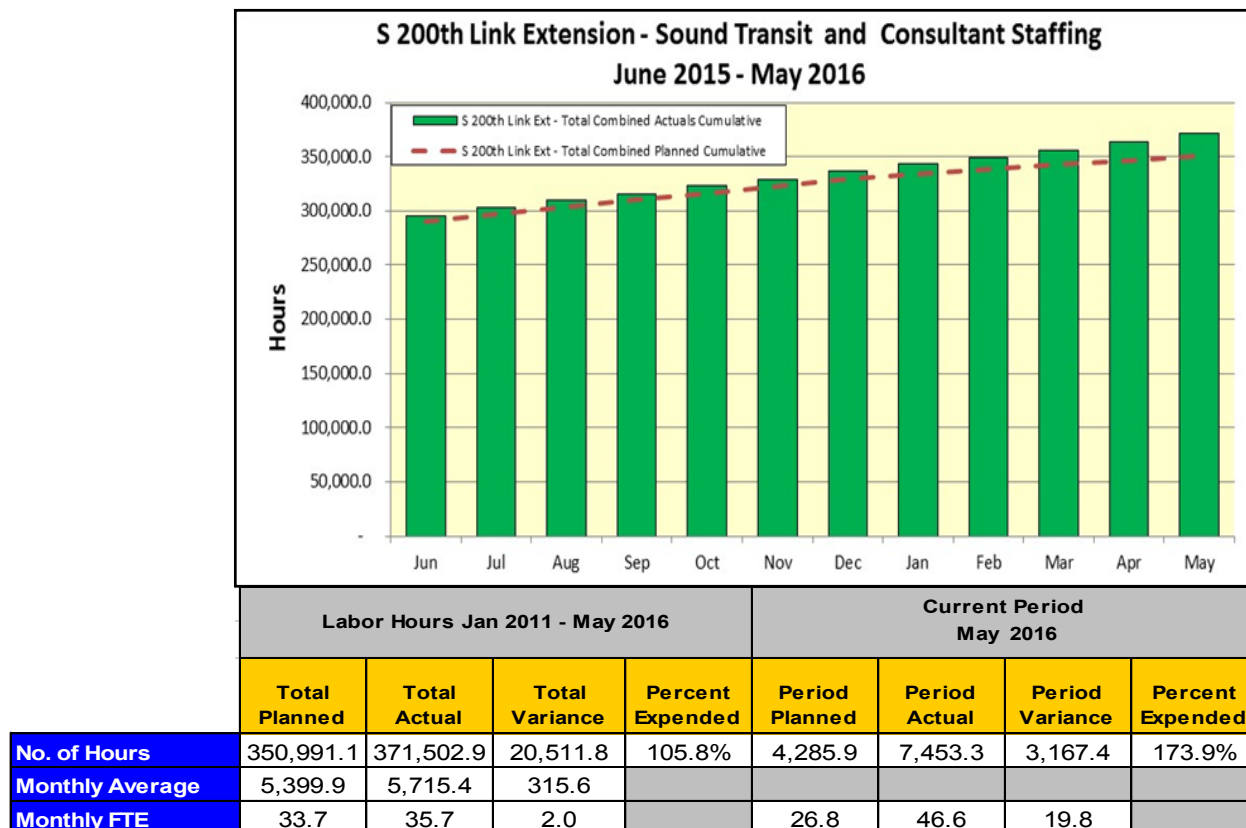
# Link Light Rail Staffing Report



## S. 200th Link Extension Staffing

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

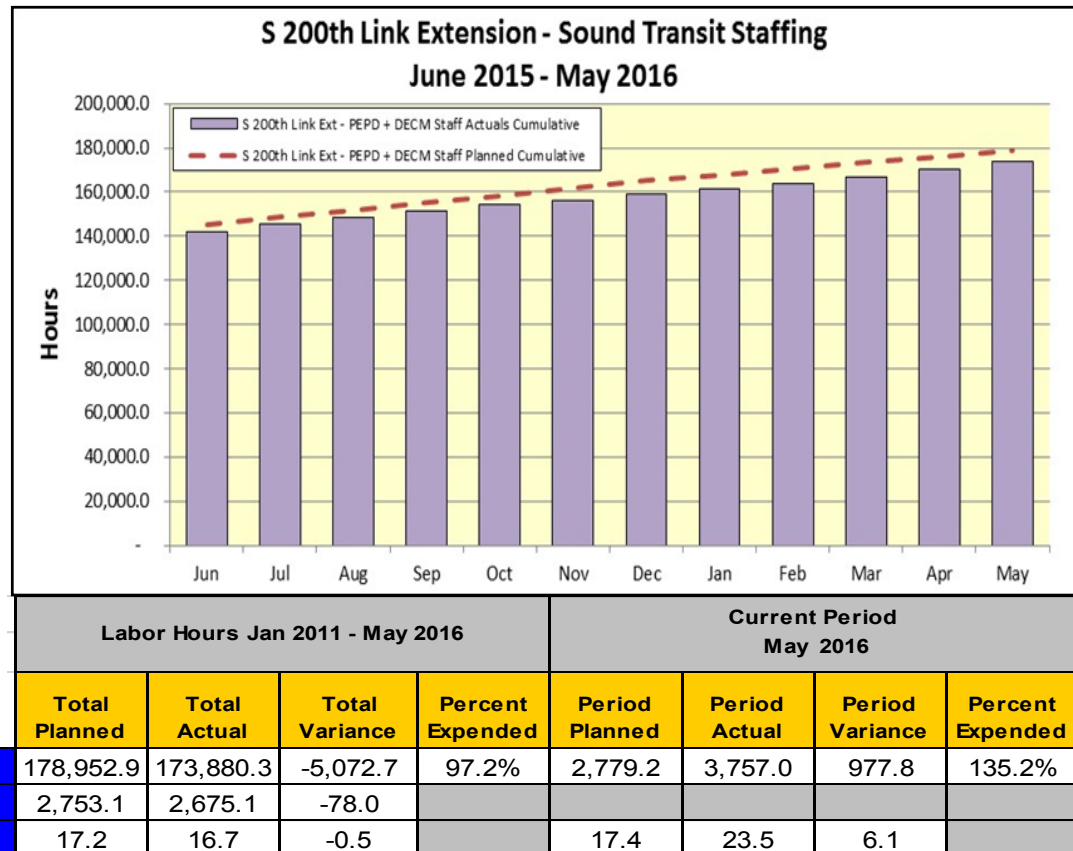
Staffing for the South 200th Link Extension in May (46.6 FTE) was 74% (19.8 FTE) above plan and 5% (2.5 FTE) below April staffing. Year-to-date staffing is 46 FTE/mo. and is 72% (19.2 FTE/mo.) above plan. Since January 2011, average monthly internal and consultant staffing (35.7 FTE/mo.) is 6% (2 FTE)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



## S. 200th Link Extension Staffing

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

Internal staffing in May (23.5 FTE) increased 10% (2.3 FTE) from April and was 35% (6.1 FTE) above plan. Cumulatively, since January 2011, average monthly internal staffing is trending 2.8% (0.5 FTE/mo.) below plan.





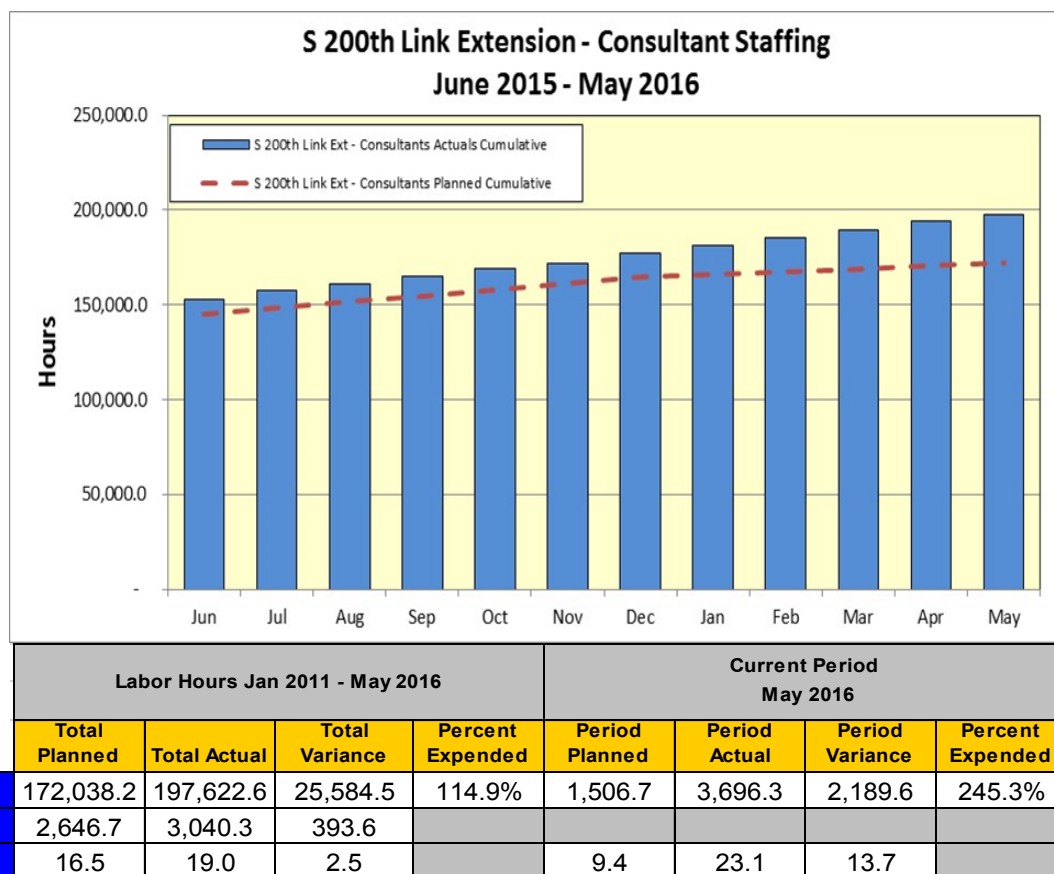
# Link Light Rail Staffing Report



## S. 200th Link Extension Staffing

### Consultant Resource Commitments to S. 200th Link Extension

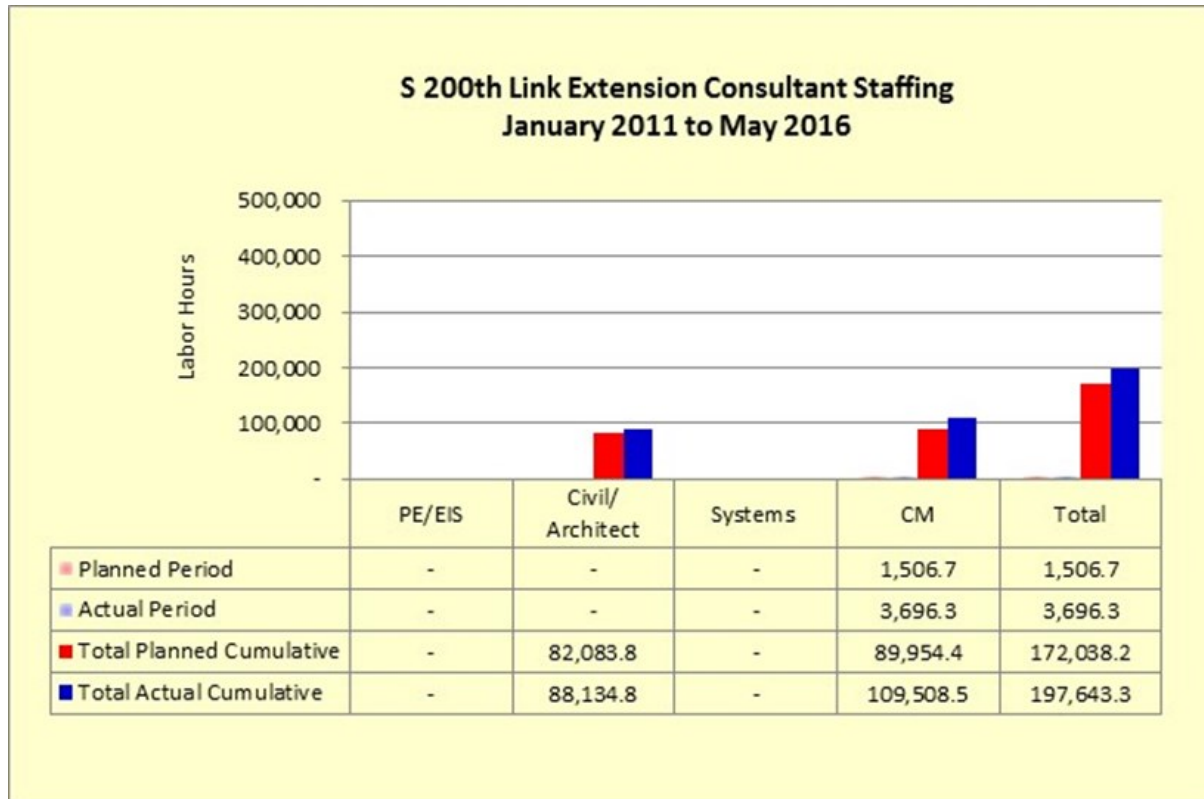
Consultant staffing on the S. 200th Link Extension in May (23.1 FTE) decreased 17% (4.8 FTE) from April and was 145% (13.7 FTE) above plan. Cumulatively since January 2011, average consultant staffing is trending 14.9% (2.5 FTE/mo.) above plan.



## 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 May.



# Link Light Rail Staffing Report



## Lynnwood Link Extension Staffing

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

During May Lynnwood Link Extension staffing was 67.6 FTE (44% of plan) and included 36.9 consultant FTE (32% of plan) and 30.7 internal FTE (76% of plan). Year-to-date staffing (38.9 FTE/mo) for the Lynnwood Link Extension is 25% of plan.

Internal staffing for May was 14% (4.3 FTE) above April staffing while consultant staffing was 230% (25.7 FTE) above April staffing. There were 8 PE and 28.9 civil engineering consultants respectively assigned to the project; cumulatively since January 2013, average project staffing for the Lynnwood Link Extension ( 19.2 FTE/mo.) is 30.4% below plan.

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

	Labor Hours Jan 2013 - May 2016				Current Period May 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	413,048.1	287,320.1	-125,728.0	69.6%	24,849.6	10,816.5	-14,033.1	43.5%
<b>Monthly Average</b>	10,074.3	7,007.8	-3,066.5					
<b>Monthly FTE</b>	63.0	43.8	-19.2		155.3	67.6	-87.7	

## Tacoma Link Extension

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

During May, there were 8.1 FTE (34% of plan) assigned to the Tacoma Link Expansion including 2.5 consultant FTE (28% of plan) and 5.6 internal FTE (43% of plan). Year-to-date staffing is 10.9 FTE/mo. (45% of plan). The plan assumed that the final design 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 May 2016			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	19,224.0	8,684.0	-10,540.0	45.2%	3,844.8	1,292.1	-2,552.7	33.6%
<b>Monthly Average</b>	3,844.8	1,736.8	-2,108.0					
<b>Monthly FTE</b>	24.0	10.9	-13.2		24.0	8.1	-16.0	

### 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
LNTP	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

### 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



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