# Progress Report Link Light Rail Program



First Unpowered LRV at Angle Lake Station during Integrated Testing

# May | 2016



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



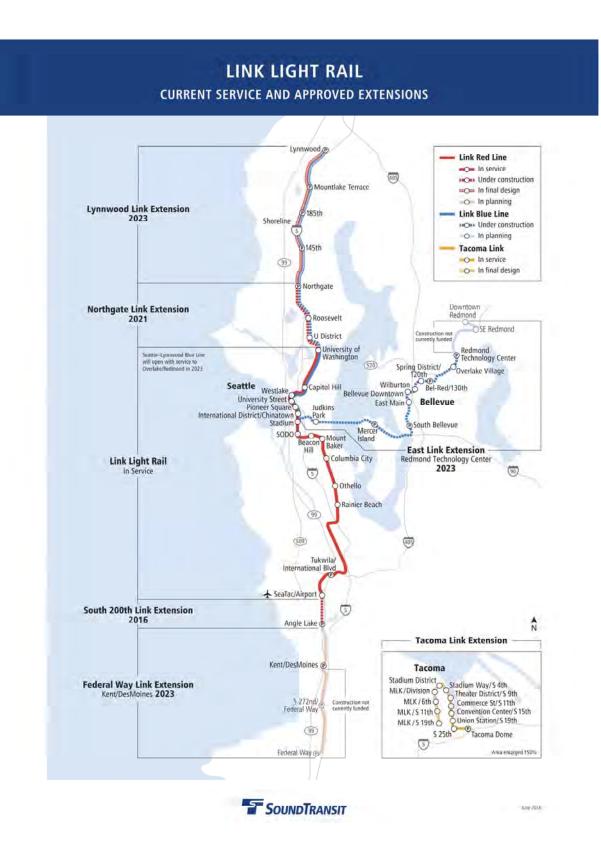




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### Projects

**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 designbuild (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	\$1,503.6	\$1,488.5	\$51.9	\$1,555.5	\$200.5
Northgate Link Extension	\$1,899.8	\$835.9	\$678.4	\$1,063.9	\$1,899.8	0
Lynnwood Link Extension	\$487.9	\$135.9	\$55.9	\$352.0	\$487.9	0
East Link Extension	\$3,677.2	\$762.9	\$468.1	\$2,914.2	\$3,677.2	0
South 200th Link Extension	\$383.2	\$324.0	\$303.0	\$19.2	\$343.2	\$40.0
Federal Way Extension	\$48.8	\$36.1	\$27.9	\$12.7	\$48.8	0
Tacoma Link Extension	\$33.0	\$8.1	\$7.9	\$24.9	\$33.0	0
Link O & M Satellite Facility	\$133.6	\$35.1	\$32.3	\$98.5	\$133.6	0
ST2 LRV Expansion	\$733.0	\$4.8	\$1.6	\$728.2	\$733.0	0
Downtown Redmond Link Ext.	\$28.6	\$0.0	\$0.0	\$28.6	\$28.6	0
Total Link	\$9,181.1	\$3,646.5	\$3,063.6	\$5,294.0	\$8,940.6	\$240.5

Table in millions.

### **Program Schedule**

Schedules for active projects are summarized below.

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#### 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 to achieve acceptance in their contracts.
- Since Revenue Service commenced, access for follow-on activities by the contractors poses to be challenging and may increase inefficiency among them as they now have to work under Operations' rules and not Construction protocols which they were used to.
- *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 encounter some issues related to this infancy period.
- *Certification of Occupancy*: University Link is operating under a temporary certification of occupancy until all permit requires are fully met. The only outstanding item is the UL certification of low voltage cables in the tunnel particularly the radiax cables that works as an antenna to the radio communication system.
- Commercial issues with prime contractors are being negotiated as the project proceeds 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	Ad	Current opted Budget	Co	mmitment to Date*	In	curred to Date	B	st. Final Cost (EFC)	Ad	opted Budget vs.EFC
ADMINISTRATION	\$ 115.23	\$	113.55	\$	<b>79.1</b> 1	\$	78.17	\$	88.23	\$	25.32
PRELIMINARY ENGINEERING	\$ 24.39	\$	24.26	\$	24.26	\$	24.26	\$	24.26	\$	-
FINAL DESIGN	\$ 77.94	\$	90.31	\$	87.18	\$	85.30	\$	88.66	\$	1.65
CONSTRUCTION SERVICES	\$ 68.53	\$	94.81	\$	86.14	\$	85.53	\$	88.72	\$	6.10
3rd PARTY AGREEMENTS	\$ 18.65	\$	18.65	\$	12.01	\$	11.26	\$	13.55	\$	5.10
CONSTRUCTION	\$ 1,180.00	\$	1,158.18	\$	989.28	\$	978.34	\$	1,022.58	\$	135.60
VEHICLES	\$ 103.91	\$	103.91	\$	99.20	\$	<b>99.19</b>	\$	101.91	\$	2.00
ROW	\$ 167.33	\$	152.33	\$	126.44	\$	126.43	\$	127.62	\$	24.71
Capital Total	\$ 1,755.97	\$	1,756.01	\$	1,503.62	\$	1,488.48	\$	1,555.53	\$	200.47
FINANCECOST	\$ 191.71	\$	191.71	\$	1 <b>91.7</b> 1	\$	167.78	\$	191.71	\$	-
Project Total	\$ 1,947.68	\$	1,947.72	\$	1,695.33	\$	1,656.26	\$	1,747.24	\$	200.47

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

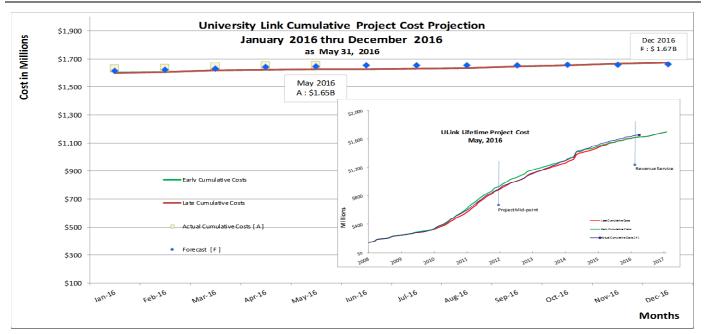
In May, the projected Estimated Final Cost (EFC) including Finance Cost remains at about \$1.75B. In this period, approximately \$3.15M was incurred and inching the project's Incurred to Date amount closer to \$1.5B (Finance Cost excluded). Direct construction cost accounted for about 53% of the cost incurred in May 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 \$978M with a current commitments about \$989M. Cost for LRV is at about \$999.2M 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 May is at \$2.3M. 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 \$965M. 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 Bements by SCC	Basel	ine Budget	Ad	Current lopted Budget	Co	ommitment to Date*	Ind	curred to Date	Es	timated Final Cost (EFC)	Ad	opted Budget vs.EFC
10 Guidew ay & Track Elements	\$	626.83	\$	450.46	\$	455.38	\$	455.62	S	461.51	\$	(11.05)
20 Stations	S	366.33	S	350.75	\$	343.04	\$	341.53	S	352.96	\$	(2.21)
30 Support Facilities: Yards, Shops	\$	7.01	\$	24.83	\$	23.23	\$	23.04	\$	24.50	\$	0.33
40 Sitew ork & Special Conditions	\$	59.03	\$	67.39	\$	56.79	\$	54.01	\$	56.68	\$	10.71
50 Systems	\$	69.63	\$	116.42	\$	99.89	\$	95.02	\$	102.89	\$	13.53
Construction Subtotal (SCC 10-50)	\$	1,128.82	\$	1,009.85	\$	978.33	8	969.22	\$	998.54	8	11.31
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	\$	298.98	\$	293.52	\$	318.75	\$	27.83
90 Unallocated Contingency	\$	53.65	\$	173.64	\$	=	\$	-	\$	11.48	\$	162.16
Capital Cost Total (SCC 10-90)	\$	1,755.97	\$	1, <b>756.0</b> 1	\$	1,503.62	\$	1,488.48	\$	1,555.53	\$	200.47
100 Finance Cost	\$	191.71	\$	1 <b>91.7</b> 1	\$	191.71	\$	167.78	\$	191.71	\$	-
Project Total	\$	1,947.68	\$	1, <b>947.72</b>	\$	1,695.33	\$	1,656.26	\$	1,747.24	\$	200.47

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

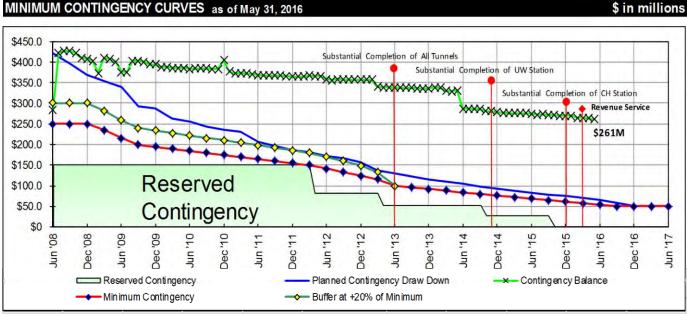
# Link Light Rail **University Link Extension**



Total project cost incurred to date at April 2016 close including Finance Cost is at \$1.65B. The financing cost incurred to date is about \$168M. 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 \$263M due to the favorable construction bidding climate, ROW acquisition cost trends, diligent project risk management practices, and excellent tunneling conditions. April'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 75% of these contingencies will be remain unused; thereby, generating approximately \$200M of budget savings excluding financing cost.



# \$ in millions

SoundTransin



### **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 and finalizing elevator installation will continue into next period.

### **Quality Assurance Activities**

Activities

• *U810*: Material Review Board has dispositioned as Acceptable One Notification of Change Report.

<u>Issues</u>

• None to report.

<u>Summary</u>

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

# **Community Outreach**

• None to report.

### **Sound Transit Board Actions**

Board motions and resolutions directly related to University Link are summarized in the table below.

Motion Number	Description	Date
	None to report.	



### U240 Contract – Capitol Hill Station

#### **Close-out Progress**

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

### **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 and work directive items throughout the station in an effort to achieve acceptance.
- 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 is working on leak remediation which continues to develop new leaks on a weekly basis. ST remains concerned about schedule to complete leak remediation work. A definitive date for completion of this work has not been determined.

Present Financial Status	Amount
U240 Contractor - Turner Construction	
Co	
Original Contract Value	\$104,850,276
Change Order Value	\$10,775,326
Current Contract Value	\$115,625,602
Total Actual Cost (Incurred to date)	\$113,127,366
Financial Percent Complete:	98%
Physical Percent Complete:	98%
Authorized Contingency	\$11,742,514
Contingency Drawdown	\$10,775,326
Contingency Index	1.07



Commuters admiring the artwork at CHS.



### 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.
- Achieved acceptance on April 26, 2016.

#### 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.

Present Financial Status	Amount
U250 Contractor - Hoffman Construction	
Co.	
Original Contract Value	141,745,898
Change Order Value	8,147,231
Current Contract Value	149,893,129
Total Actual Cost (Incurred to date)	149,852,165
Financial Percent Complete:	<b>99</b> %
Physical Percent Complete:	<b>99</b> %
Authorized Contingency	8,452,295
Contingency Drawdown	8,147,231
Contingency Index	1.03



Signage and artwork at UWS.



### 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. Elevator and Crane Bridge are still outstanding but expected to be completed by end of May.

### **Close-out Activities**

#### Current Period

- Continued closing out punch list items.
- Completed elevator installation in the main building and obtained L&I inspection and sign off.
- Continued processing outstanding commercial issues.
- Continued closing out of all outstanding NCR's.

#### 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.

Present Financial Status	Amount
U810– Forma Construction (Design/ Build)	
Original Contract Value	\$11,998,725
Change Order Value	\$650,914
Current Contract Value	\$12,649,639
Total Actual Cost (Incurred to date)	\$12,438,546
Financial Percent Complete	98%
Physical Percent Complete:	98%
Authorized Contingency	\$959,898
Contingency Drawdown	\$650,914
Contingency Index	1.44



View of MOW site with striping.



### **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

- Contractor working to complete remaining submittals (final as-built and system assurance) and punch list items.
- Ongoing leak repairs of tunnel and cross passages.

#### 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

- Trackwork scheduled to initiate final inspection.
- 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.

Present Financial Status	Amount
U830 GC/CM Contractor - Stacy & Witbeck	
Original Contract Value	\$119,167,433
Change Order Value	\$3,680,715
Current Contract Value	\$122,848,149
Total Actual Cost (Incurred to date)	\$118,684,797
Financial Percent Complete	96.5%
Physical Percent Complete:	99.0%
Authorized Contingency	\$5,958,373
Contingency Drawdown	\$3,680,715
Contingency Index	1.6

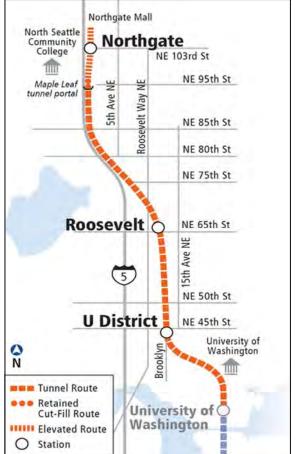


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# Link Light Rail Northgate Link Extension

### Scope

Limits:	The Northgate Link Extension consists of 4.3 miles of light rail extending from the University of Washington to Northgate.
Alignment:	The extension begins at the UW Station, boring tunnels under campus then continues north to a portal located north of NE 94 <sup>th</sup> Street on the east side of I-5, then transition- ing to an aerial structure running north to the Northgate Mall.
Stations:	The <i>U District Station</i> is an underground sta- tion located on the west side of the UW campus near Brooklyn Ave. and NE 45 <sup>th</sup> St. The <i>Roosevelt Station</i> is an underground station located near NE 65 <sup>th</sup> St. and 12 <sup>th</sup> Ave NE. The <i>Northgate Station</i> 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**

- Contractor performed remedial drilling and grouting in response to a sinkhole discovered above the SB tunnel in the Roosevelt neighborhood. ST and Contractor are evaluating data to identify other areas of potential concern.
- ST and the N125 Contractor held a partnering session followed y a meeting with the Disputes Review Board to discuss sinkhole issues and ross passage ground freezing plans.
- Progressing various Final Design contract packages. (See Final Design section for details.)
- For N105 Advance Demo and Site Prep, NTP scheduled next period with Pellco Construction.
- *For N125 TBM Tunnels*, Crews completed relocation of TBM #1 backup gantries to SB tunnel and continued installation of supporting utilities to gantries. Cutter-head and TBM #1 refurbishment continues. Following TBM #1 retrieval, JCM handed over UWS site to UW; the site is ready for UW Commencement on June 11. In cross passages, dewatering activities and freeze down continued.

• For N180 Trackwork, preparation for responses to bidder questions on bid documents continue.

### **Closely Monitored Issues**

• The initial phase of remedial work for the Roosevelt sinkhole was completed. Sound Transit instructed the contractor to explore three additional bore holes south of the area. Sound Transit is closely monitoring the issue.





### **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	\$38.3	\$38.2	\$147.9	\$0.0
PRELIMINARYENGINEERING	\$15.1	\$15.1	\$15.1	\$15.1	\$15.1	\$0.0
FINAL DESIGN	\$129.2	\$129.2	\$108.5	\$97.6	\$129.2	\$0.0
CONSTRUCTION SERVICES	\$118.3	\$118.3	\$81.7	\$35.2	\$118.3	\$0.0
3rd PARTY AGREEMEN TS	\$11.8	\$11.8	\$9.9	\$5.5	\$11.8	\$0.0
CONSTRUCTION	\$1,328.0	\$1,328.0	\$489.2	\$394.2	\$1,328.0	\$0.0
ROW	\$127.3	\$127.3	\$93.1	\$92.6	\$127.3	\$0.0
PROJECT CONTINGENCY	\$22.2	\$22.2	\$0.0	\$0.0	\$22.2	\$0.0
Total	\$1,899.8	\$1,899.8	\$835.9	\$678.4	\$1,899.8	\$0.0

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 \$8.2M was incurred, of which \$5.1M was for the N125 tunneling contract, the N111 Utility Relocation project at Northgate and other miscellaneous construction, \$0.9M was incurred for civil and systems final design and design support during construction, and \$1.4 M 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	\$329.1	\$268.8	\$598.0	\$0.0
20 STATIONS	\$376.1	\$386.7	\$41.1	\$33.8	\$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	\$102.8	\$80.8	\$175.6	\$14.9
50 SYSTEMS	\$110.9	\$93.7	\$0.9	\$0.9	\$108.7	(\$15.0)
Construction Subtotal (SCC 10 - 50)	\$1,228.7	\$1,274.2	\$479.1	\$389.5	\$1,274.2	\$0.0
60 ROW, LAND, EXISTING IMPROVEMENTS	\$119.9	S119.9	\$93.1	\$92.6	\$119.9	\$0.0
80 PROFESSIONAL SERVICES	\$420.7	\$427.1	\$263.7	\$196.3	\$427.0	\$0.1
90 CONTINGENCY	\$130.4	\$78.6	\$0.0	\$0.0	\$78.6	(\$0.1)
Capital Total (SCC 10 - 90)	\$1,899.8	\$1,899.8	\$835.9	\$678.4	\$1,899.8	\$0.0

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 \$16.8M to \$379.4M, which is 31.1% of project work remaining. During this reporting period, a net increase of \$7.7M in the overall project contingency occurred. Detailed information is provided below.

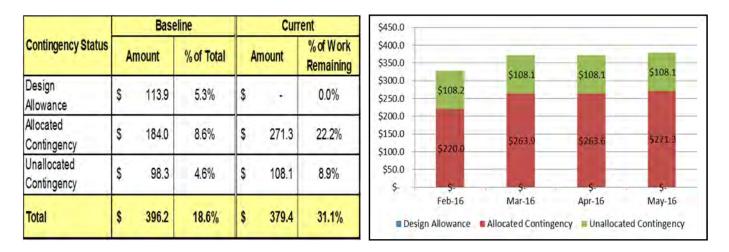
*Design Allowance* – The baseline Design Allowance of \$113.9M has been fully depleted following the receipt of updated construction cost estimates on the N140, N150, and N160 Station Finishes contracts. DA has been utilized as scope development has progressed to 90% on N140, and 100% on N150 and N160. 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 \$87.3M to \$271.3M. During this reporting period, AC was increased by a total of \$7.7M following board action to increase the Systems FD by \$1.0M and the Systems DSDC by \$6.8M, and use of \$0.1M due to the issuance of change orders on the N125 Tunneling contract and N111 Utility Relocation 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.



### **Project Schedule**

The Notice to Proceed (NTP) for the N105 Advanced Demolition & Site Prep contract will be issued to Pellco Construction in early June. Work at Site C in Northgate will likely be completed by the end of September and work at the Key Bank site completed by December 2016.

With the exception of a few punchlist items the N111 contract work is complete and the ductbanks and vaults have been handed over to SCL. Change Order resolution is continuing. The final schedule update from Walsh was found to be incomplete and has been rejected.

The Notice to Proceed for the N113 SCL 115kV Relocation project was issued on May 31, 2016. Substantial Completion is now February 21, 2017. Anchor bolt cages are scheduled for delivery to the site July 11th with poles arriving no later than July 18th. Potelco will be submitting their Preliminary Baseline schedule in mid-June.

The N125 Tunneling contractor is completing the refurbishment of TBM No. 1 and is planning to re-launch the machine in mid-June. Cross passage construction continues. Preparations for in-tunnel ground freezing at Cross Passages 34-38 is underway. JCM is expected to provide a revised schedule, updated through the end of May that reflects the agreement reached in Change Order 146.

The N140 U District Station 100% Design is scheduled to be delivered to ST on July 29, 2016. ST has received and is reviewing the 90% Construction Cost Estimate from the GC/CM (Hoffman). A 90% Construction Schedule is still expected and will likely be received in early June. MACC negotiations are expected to finish in early November, with NTP in early to mid-March 2017 and site access planned for June 2017. 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 to provide their 100% Construction Estimate which was expected by the end of May. Submission will now be in June. MACC negotiations are still planned to conclude in mid-July, with NTP in early October 2016 and site access in January 2017.

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



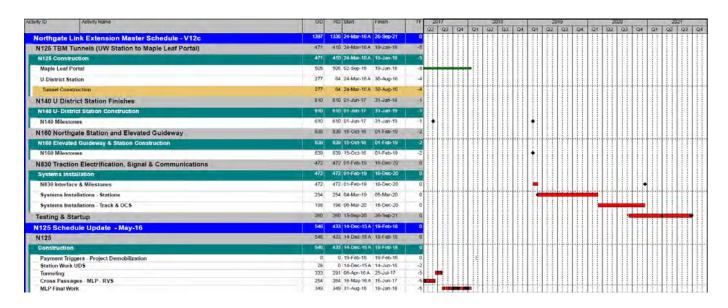
# Project Schedule, continued

stivity Name	Orig	Start	Finish	2011 2012	2013	2014	2015	2016 QQQQC	2017	2018	2019	2020	2021
Northgate Link Extension Master Schedule - V12c						- alalala							
N105 Advanced Demolition & Site Prep			-		1		-						-
N105 Final Design	350	16-Jun-14 A	02-Nov-15 A	1 1 1		-	-						
N105 - Contract Procurement	205	13-Aug-15 A	06-Jun-16				-	-					
N105 IFB	26	28-Sep-15 A	02-Nov-15 A										
N105 Construction Summary	192	07-Jun-16	15-Dec-16				10.00				-		
N110 Advanced Utility Relocation, Roosevelt Area		1000		1	1				1		1000	1 1	
N110 - Roosevelt Advance Utility Relocation Construction	0	06-Mar-13 A	28-May-13 A	C	-							1111	
N111 Advance Utility Relocation, Northgate Area					1		1		1			1	
N111 Advance Utility Relocation Final Design	447	31-May-12 A	14-Feb-14 A		-	-							
N111 Prepare IFB, AD, Bid & Award	201	17-Feb-14 A	16-Jan-15 A	0		-							
N111 Advance Utility Relocation Construction	464	19-Jan-15 A	26-Apr-16 A			1	-			-		-	
N112 Advanced Demolition & Site Prep, U District & R	loosev	elt							1	1		· · · · · · · ·	-
N112 Roosevelt Station Site Prep	114	01-Aug-12 A	15-Mar-13 A	-	-								
N112 U District Station Site Prep	90	08-Apr-13 A	31-Aug-13 A	1					1.000		10.1	1.116	
N113 115kV Relocation at Northgate					1				1			1000	
N113 SCL 115kV Relocation Final Design & Procurement	587	18-Dec-14 A	26-Jul-16			1.1	-	-					
N113 Preconstruction & Mobilization	121	31-May-16 A	28-Sep-16					-					
N113 SCL 115kV Relocation Construction	266	31-May-16 A	20-Feb-17			-	-		10			1	
N125 TBM Tunnels (UW Station to Maple Leaf Portal)	-				1			11			-	1 - 2	
N125 TBM Tunnels (MLP to UW)	979	07-Oct-13 A	24-Jan-18		<b>-</b> -	-	-	-		Þ	1		
Tunneling - NB Bore/TBM No. 1 - UDS to UW	100	04-Jan-16 A	26-May-16 A										
Tunneling - SB Bore/TBM No. 1 - UDS to UW	277	07-Mar-16 A	11-Apr-17					-					
Roosevelt Station - Utilities & Box Excavation	379	07-Oct-13 A	17-Mar-15 A			-	-	100					
Maple Leaf Portal - Utilities/Portal Construction/Launch Prep	379	28-Oct-13 A	15-Aug-14 A			-	1						
U-District Station - Utilities & Box Excavation	379	10-Dec-13 A	12-Aug-15 A		0	-	-						
Tunneling - NB Bore/TBM No. 1 - MLP to RVS	158	09-Jul-14 A	25-Mar-15 A			-	-						
Tunneling - NB Bore/TBM No. 1 - RVS to UDS	162	03-Apr-15 A	16-Jul-15 A				-						
Tunneling - SB Bore/TBM No. 2 - MLP to RVS	168	20-Nov-14 A	13-Aug-15 A				-						
Tunneling - SB Bore/TBM No. 2 - RVS to UDS	102	21-Jul-15 A	10-Jan-16 A				-						
Cross Passages - RVS-UDS	363	19-Jun-15 A	06-Dec-16				9						
Cross Passages - MLP-RVS	197	12-Oct-15 A	10-Jun-16				-	-					
Cross Passages - UDS-UW	320	24-Nov-15 A	07-Mar-17					-					
Maple Leaf Portal - Post-Tunneling	575	29-Jun-16	24-Jan-18		1.0		-	-		•	-		
N140 U District Station Finishes				100.0									
N140 U District Station Final Design	750	05-Jul-11 A	26-Aug-16	-	-	-							
N140 Prepare Bid Packages, Negotiate MACC	194	08-Feb-16 A	09-Nov-16				1 1 3	<b>.</b>					
N140 U District Station Construction	1165	20-Oct-16	28-Dec-19	· · · · · · · · · · · · · · · · · · ·						-	-	2	
N150 Roosevelt Station Finishes								1.0	11	1		1	1
N150 Roosevelt Station Final Design	657	21-Jul-11 A	15-Apr-16 A	-		-	-	-					
N150 Prepare Estimates, Negotiate MACC	50	18-Apr-16 A	11-Jul-18		·			-		-			
N150 Roosevelt Station Construction	968	17-Jan-17	11-Sep-19					14 ( <sup>1</sup> )	-	1	•	1.000	
N160 Northgate Station and Elevated Guideway		1	and a start		1			-				1 - 14	
N160 Northgate Station & Guideway Final Design	637	04-Jun-12 A	18-Mar-16 A	-	-	-		-					
N160 MACC Negotiations & Construction Contract Approval	143	17-Jul-15 A	12-Feb-16 A				-						
SPG Nordstrom Deck Construction	250	25-Nov-15 A	23-Nov-16						>			-	
N160 Northgate Station & Guideway Construction	1203	14-Oct-16	29-Jan-20					<b>v</b>	1	-	-	D I	
N180 Advertise, Bid & Award	131	14-Mar-16 A	15-Sep-16		-						-		-
N180 Trackwork			the second		1			- 12	1			'r ==1'	·
N180 Trackwork Final Design	1008	16-Feb-12 A	19-Feb-16 A		1	-	-					1 1	
N180 Prepare IFB Plan Set	24	19-Jan-16 A	19-Feb-16 A										
N180 Advertise, Bid & Award	139	23-Feb-16 A	07-Sep-16										
N180 Trackwork Procurement & Construction	797	08-Sep-16	28-Oct-19					<b>○</b>			-		
N180 Northgate Track Construction	383	26-Feb-18	30-Aug-19							0	-		
N830 Traction Electrification, Signal & Communicatio	ns	2000				1.2		1		1			
N830 Systems Final Design	973	21-Dec-12 A	04-Nov-16		-	-	-	70					
N830 Systems GC/CM Contract Procurement	199	09-Apr-15 A	19-Jan-16 A				-						
N830 Systems Installation		19-Oct-18	18-Dec-20							9			k
Testing & Startup									1		-		
Northgate Link Testing, Commissioning, Start-up	250	15-Sep-20	28-Sep-21									-	-



# Critical Path Analysis

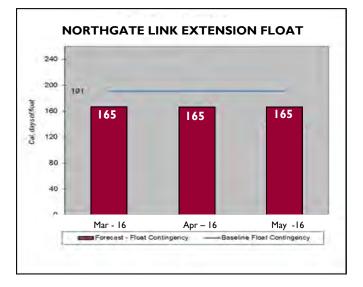
The longest path through the Northgate projects is now driven by the Cross Passage construction in the N125 contract, turnover of the UDS box to N140 through handover of the UDS station and tunnels to the N830 Systems contract. The N160 contract remains a near-critical scope of work.



### **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	May 2016	Year to Date	Project to Date
Recordable Injury/Illness Cases	3	3	38
Days Away From Work Cases	1	1	3
Total Days Away From Work	5	5	219
Restricted or Modified Work Cases	0	0	18
Total Days Restricted or Modified Work	0	0	863
First Aid Cases	0	9	34
Reported Near Mishaps	2	3	44
Average Number of Employees on Worksite	280	-	-
Total # of Hours (GC & Subs)	50,000	259,622	1,528,822
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	12.00	2.31	4.97
DART Rate	4.00	0.77	2.75
Recordable National Average	3.60	3.60	3.60
DART National Average	2.00	2.00	2.00
Recordable WA State Average	7.20	7.20	7.20
DART WA State Average	3.30	3.30	3.30

# **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.

**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.

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

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	4	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	I	0	2	6	13	13
Total	235	233	I	0	2	227	43	42



# **Quality Assurance Activities**

Activities

• N125-MRB has dispositioned as Acceptable one NCR

Issues

• None to report.

### <u>Summary</u>

Description	Mar 2016	Notes
No. of Audits Planned	0	None
No. of Audits Com- pleted	0	None
Reports in Progress	0	None
No. of Audits Post- poned	0	None

### **Sound Transit Board Actions**

Board Action	Description	Date
	None to report.	

### **Community Outreach**

- Distributed various construction alerts regarding decommissioning of wells at cross passage 34; drilling operations in the Ravenna neighborhood along 12th Avenue NE; ground freezing activities; and preparation for the TBM launch.
- Hosted an information booth at the U District Street Fair and over 1,700 people stopped by the booth with questions/comments regarding ST projects.
- Met with impacted property owners and residents and provided updates related to the sinkhole.
- Provided a project update at the Roosevelt Neighborhood Association.

### 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 N105 – Advance Demolition and Site Prep:

• IFC set issued May 13; further design activities are not anticipated on this contract.

<u>Contract Package N113</u> – *115kV Relocation at Northgate Station:* 

• IFC set issued May 6; further design activities are not anticipated on this contract.

<u>Contract Package N140</u> - U District Station Civil and Finishes:

- Continued 100% design effort including incorporation of ST N150 review comments into the N140 package.
- Completed shear wall detailing for TOD Overbuild.

• Continued work on seepage management measures. Contract Package N150 - Roosevelt Station Civil and Finishes:

• Continued bid support services and GC/CM coordination. <u>Contract Package N160</u> - Northgate Station, Aerial Guideway and Parking Garage Civil and Finishes:

• Advertised for bids on April 20, bid date July 1. Bid support including RFI responses and issuance of addenda ongoing.

Contract Package N180 - Trackwork:

• Advertised for bids April 12; with anticipated bid date in early July. Bid support including RFI responses ongoing.

<u>Contract Package N830</u> – *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.

	<u>6</u>	0%	<u>ç</u>	00%	<u>100%</u>	<u>6 to ST</u>
Work Packages	<u>Plan</u>	<u>F/A*</u>	Plan	<u>F/A*</u>	<u>Plan</u>	<u>F/A*</u>
N105 Key Bank Demolition and Remediation	7/31/2014	7/31/2014A	10/3/2014	10/3/2014A	2/23/2015	6/18/2015A
NIII 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
NI40 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
NI80 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

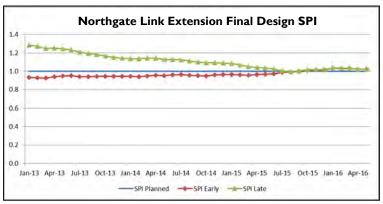


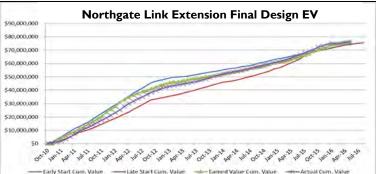
### **Final Design Schedule Performance**

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%
СРІ	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.
- <u>Permits</u>
- 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.
   <u>Ground Borne Noise and Vibration</u>
- None to report.

Construction Cost Estimating

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

#### <u>Illustrative Graphics</u>

• None to report.

<u>Quality Assurance</u>

• 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.

Package	Bid Advertisement	NTP	Substantial Completion			
N105-Advance Demolition & Site Prep	Mar 2016A	June 2016	Dec 2016			
NIII-Advanced Utility Relocation	Sept 2014A	Jan 2015A	Mar 2016A			
N113-SCL 115kV Relocate	Feb 2016A	June 2016	Mar 2017			
N125-Station Box Exc. & TBM Tunnels	Jan 2013A	Sep 2013A	Feb 2018			
NI40-U District Station Finishes	Oct 2013A (GC/CM-Precon)	Mar 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)	Oct 2020			

### **Construction Schedule Highlights**

A = Actual



# Link Light Rail Northgate Link Extension

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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

- ontractor worked on addressing the punch list items identified in the formal reviews by SCL, SDOT and WSDOT.
- Contractor and ST continued gathering confirmations from City departments that the punch list work is complete.
- Seattle City Light (SCL) made significant progress towards installing conductors and equipment in the duct bank system.
- Continued negotiating open change items and finalizing all remaining costs into Change Orders Contractor began demobilization from the project.

#### Next Period

- Execute remaining Change Orders.
- 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.

Present Financial Status	Amount
NIII Contractor - Walsh Construction	
Original Contract Value	\$9,370,000
Change Order Value	\$859,676
Current Contract Value	\$10,229,676
Total Actual Cost (Incurred to date)	\$10,124,361
Financial Percent Complete:	99%
Physical Percent Complete:	99%
Authorized Contingency	\$937,000
Contingency Drawdown	\$859,676
Contingency Index	1.08



### **Contract N125 – TBM Tunnels**

### **Current Progress**

JCM is expected to submit a revised schedule in early June, which will be updated through the end of May. This revised/updated schedule is intended to take into account the conditions agreed upon in Change Order No. 146. Currently JCM is completing refurbishment of TBM No. 1 at UDS Station. TBM No. 2 has been removed from the site. Installation of the in-tunnel freezing pipes for Cross Passages (CP) 32-38 is underway. Invert concrete, ductbank and cable troughs are continuing to be poured in the southbound and northbound tunnels between MLP and UDS. It is anticipated that the critical path will continue to be driven by the tunneling for the southbound bore between UDS and UWS.

*Tunneling Operations* -TBM No. 1 is currently undergoing refurbishment at UDS with anticipated launch date of June 13 to start the final southbound tunnel bore to UWS. JCM is forecasting hole-through at UWS in late August. However, removal of the TBM may not take place until November due to interference with scheduled events at Husky Stadium.

*Cross Passage Construction* -At the end of May, cross passage activities in various cross passages include freeze pipe drilling, invert rebar, in-tunnel freezing, excavation and propping, end cap rebar and formwork.

#### **Schedule Summary**

The longest path now runs through two paths within the schedule. 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. ST, 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.

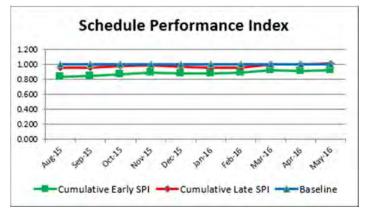
Activity ID	Activity Name	Start	Finish		2016													20	017						
				Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
N125 Schedu	le Update - May-16	26-Aug-13 A																							l
N125		26-Aug-13 A	19-Feb-18																						l
Construction		26-Aug-13 A	19-Feb-18																						ľ
😥 Payment Trigge	rs - Project Mobilization	26-Aug-13 A	30-Apr-14 A																						
🔋 Payment Trigge	rs - TBM #1 TBM Mobilization	07-Apr-15 A	11-May-15 A																						
🕂 Payment Trigge	rs - TBM #2 TBM Mobilization	13-May-15 A	16Jun-15A																						
🕂 Payment Trigge	rs - TBM #3 TBM Mobilization	01-Mar-16 A	31-Mar-16 A																						
🕂 Payment Trigge	rs - Project Demobilization	22-Jan-18	19-Feb-18																						1
+ Submittals - Pre	pare	26-Aug-13 A	28Jun-16																						
+ Submittals - Re	view & Approve	28-Aug-13 A	28-Jul-16																						
+ Procurement Ta	isks	26-Aug-13 A	13-Jul-16																						
⊕ Construction / S	ound Wall - Construction	31-Oct-13 A	12-Feb-15 A																						ľ
+ Station Work M	LP	30-Sep-13 A	06-0ct-16				1																		
+ Station Work R	oosevelt	07-0ct-13 A	01-Jul-16																						
	N	21-Dec-16	15-Mar-17																						
+ Station Work U	S	10-Dec-13 A	30-Jun-16			11	]																		
🕂 UW Campus EN	l System	01-Sep-15A	31-0ct-15 A																						
<b>∓</b> Tunneling		06-Mar-14 A	09-Jan-18					1 10				ш													
+ Cross Passage	s - MLP - RVS	13-Jan-15 A	27-Jun-17																						
+ Cross Passage	s - RVS - UDS	19Jun-15A	09-Jan-17																						
+ Cross Passage	s - UDS - UW	24-Nov-15 A	17-Mar-17					III					 			     									
+ Cross Passage	s - Additional SEM Measures	01-Mar-16 A	01-Jun-16																						
H MLP Final Work		01-Jul-15 A	19Jan-18																						
Trench Safety S	ystems	01-Apr-14 A	30-Jun-14 A																						
	•																								

# Link Light Rail Northgate Link Extension - Construction



### Schedule Performance Index

The revised May schedule update reports a Performance Percent Complete of 83% with a Cost Percent Complete of 82%. The SPI for this period remains 0.9, essentially unchanged from the 0.9 obtained in April and the schedule continues tracking to the Baseline Late SPI curve.



### **Key Activities**

#### Current Period

- Completed welding of TBM No. 1 cutter-head to front shield at UDS and completed relocation of backup gantries 1 to 11 to SB tunnel.
- Completed removal of NB blind rings and began breaking out SB tunnel eye at south end of UDS.
- Completed handover UWS site back to UW.
- Completed various cross passage activities including installation of propping plates, excavation with support, installation of propping, ground freeze piping and rebar installation.
- Continued modification of endcaps rebar and installation of sleeves for the electrical conduits at CP41 and CP43.

### Next Period

- Continue various cross passage activities throughout the tunnels.
- Relaunch SB TBM No 1 at UDS.

### **Closely Monitored Issues**

• Sound Transit has issued an NCR for the sinkhole at 12th Ave NE between NE 62nd St and NE 63rd St. As a result of the first TBM data review, ST will direct JCM to perform additional borehole investigation along 1st Ave NE and finalize locations on 12th Ave NE, south of RVS.

Present Financial Status	Amount
N125Contractor - JCM Northlink	
Original Contract Value	\$440,321,000
Change Order Value	\$ 5,292,890
Current Contract Value	\$445,613,890
Total Actual Cost (Incurred to date)	\$358,185,863
Financial Percent Complete:	80.4%
Physical Percent Complete:	80.4%
Authorized Contingency	\$66,049,150
Contingency Drawdown	\$5,292,890
Contingency Index	10.03



Lifting NB TBM No. I cutterhead from the UWS shaft.



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# Link Light Rail Lynnwood Link Extension

#### Scope

Limits:	North Seattle to Shoreline, Mountlake
Alignment:	Terrace, and Lynnwood Transit Center 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 in- cludes at-grade, elevated, and retained cut/fill alignment.
Stations:	NE 145th (Shoreline), NE185th (Shoreline), Mountlake Terrace Transit Center, Lynnwood Transit Center
Systems:	Signals, traction power, and communica- tions (SCADA).
Budget:	\$487.9 Million Phase Gate 4 budget; ex- cludes Construction (Year of Expenditure Dollars)
Phase:	Final Design
Const. Starts:	2018
Service:	Late 2023



Map of Lynnwood Link Extension Alignment.

# **Key Project Activities**

#### Final Design

- Executed Civil Final Design contract with HNTB Jacobs in April 2016.
- Procuring consultant for Systems Final Design. Anticipate starting work in 3rd QTR 2016.

#### **Pre-Construction Services**

- Executed Civil Construction Management contract with PGH Wong in May 2016.
- Procuring GC/CM contractors for pre-construction services. Anticipate starting civil pre-construction services in 2nd QTR 2016 and systems pre-construction services in 2017.

#### Third Parties

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

#### **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	\$9.3	\$9.0	\$88.3	\$0.0
Preliminary Engineering	\$42.0	\$39.9	\$39.3	\$42.0	\$0.0
Final Design	\$111.5	\$70.3	\$0.8	\$111.5	\$0.0
Construction Services	\$104.9	\$7.5	\$0.0	\$104.9	\$0.0
3rd Party Agreements	\$17.4	\$0.8	\$0.6	\$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	\$8.0	\$6.2	\$123.8	\$0.0
Total	\$487.9	\$135.9	\$55.9	\$487.9	\$0.0

#### Cost Summary by SCC

SCC Element	Current Adopted Budget	Commit- ment 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
Construction Subtotal (10 - 50)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
60 Row, Land	\$123.8	\$8.0	\$6.2	\$123.8	\$0.0
70 Vehicles (non-revenue)	\$364.1	\$127.9	\$49.7	\$364.1	\$0.0
80 Professional Services	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
90 Unallocated Contingency	\$487.9	\$135.9	\$55.9	\$487.9	\$0.0
Total (10 - 90)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0

### <u>Risk Management</u>

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.

sivty Name	886	Finish	2015	2016	2017	2018	2019	2020	2021	2022	20
LLE Master Schedule	01-Sep-15A	29-Nov-23				10101031					
Project Management and Milestones	01-Jan-16 A	29-Nov-23	1								
Phase Gates and Board Actions	2.8-Dec-17	29-Nov-23				<u> </u>	-				
Federal Approvals	01-Jan-16 A	08-Feb-16 A	1 🕈	1						-	1
Budget Actions	23-Feb-17	23-Aug-18			-	<del></del>					
Alternatives Analysis/Environmental Review/PE	01-Sep-15A	10-Apr-16		+		1	1		1		
Engineering Contracts and EIS	01-Sep-15A	10-Apr-16	1 -	+							
Procurement	01-Sep-15A	19-Nov-22			1	1	1		1		r
Civil Contracts	06-Dec-15A	19-Jan-17	1 7		7						
Civil FD	15-Dec-15A	25-Mar-16	1 🔻	+		1					1
Civil CM	12-Dec-15A	03-May-16		-		1	1		1		1
Civil GC/CM	06-Dec-15A	19-Jan-17		-	-						
Norting ate-L ynnwood Connector (L100)	01-Nov-16	19-Jan-17		•	÷.						
South Package (L200)	06-Dec-15A	05-Jun-16	<b>•</b>	<b>-</b>							
North Package (L 300)	2 1-Mar - 16	27-Sep-16	1 :								1
Systems Contracts	20-Jan - 16 A	27-Jun-17		1	<del></del> .	1	1		1		1
Systems FD	20-Jan-16 A	29-Jul-16	1 3				1		1	1	
Systems CM	07-Sep-16	28-Mar-17			<del>.</del>				1		1
Systems GC/CM (L800)	06-Nov-16	27-Jun-17			<del></del>		1				1
Light Rail Vehicle Procurement	01-Sep-15A	19-Nov-22		-	-	-	-		-		r -
Final Design	01-Nov-15A	10-Aug-22									-
ROW/Property Acquisition	19-Jan-16 A	29-Dec-18		1			<b>•</b>				
Permits and Agreements	01-0a-15A	04-Nov-22		-	-						
Utlity Relocations/External Interfacing Projects	01-Feb-16A	08-Jul-20		+		-	-	÷ • •			1
Construction	24-Dec-16	02-Jun-23		1							÷

### **Sound Transit Board Actions**

Board Action	Description	Date
M2016-51	Execute a contract with Stacy and Witbeck-Kiewit-Hoffman, a Joint Ven- ture, to provide pre-construction ser- vices for the Northgate Station to NE 200th Street contract within the Lynnwood Link Extension in the amount of \$5,114,580, with a 10% contingency of \$511,458, for a total authorized contract amount not to exceed \$5,626,038.	May 26

# **Community Outreach**

- Met with City of Shoreline staff to review early designs for park impacts and replacement parking. Outreach for parks impacts was also discussed and a community involvement process.
- Attended the City of Lynnwood Open House with project handouts. Approx. 30 attendees spoke with ST staff and viewed the video animation for the final route and stations.
- Attended the final design kick off meeting for the south segment that included staff from the cities of Seattle and Shoreline.
- Continuing to contact community groups to offer project updates.

# Environmental

• None to report.

### **Quality Assurance Activities**

Activities/Issues

• None to report.

<u>Summary</u>

Description	Mar 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



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### **Phase 3 Preliminary Engineering and Final EIS**

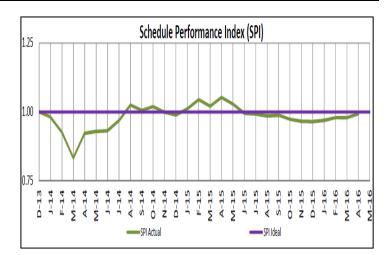
Sound Transit executed a contract amendment for Phase 3, Preliminary Engineering and Final EIS for Lynnwood Link, in December 2013.

### **Phase 3 Key Activities**

• Continuing final Preliminary Engineering documentation in preparation for the start of the Final Design Phase.

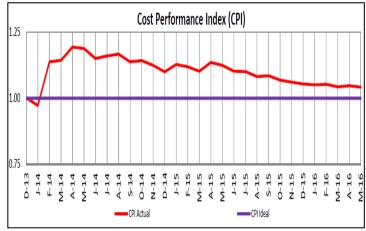
### **Phase 3 Schedule Performance**

The cumulative Schedule Performance Index (SPI) for the Phase 3 contract is 1.00 through May. All work is complete.



### Phase 3 Cost Performance

\$38.0 M of the total contract amount, approximately 98%, has been spent through May. Phase 3 contract expenditures through May totaled \$21.6 M, approximately 96% of the Phase 3 contract total. The Phase 3 contract percent complete reported at the end of May is 100%, with an earned value of \$22.5 M. The cumulative Cost Performance Index (CPI) through May is 1.04; indicating final Phase 3 costs are 4% lower than the budget planned.



Phase 3 Performance	Previous Period	Current Period	Cumulative To-date
Amount Invoiced	\$21,316,554	\$270,244	\$21,586,798
% Spent	95%	1%	96%
Earned Value	\$22,323,406	\$152,391	\$22,475,797
% Complete	<b>99</b> %	۱%	100%
SPI	0.99	0.00	1.00
СРІ	1.05	0.56	1.04



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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, safe-ty, 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	Major Contracts				
Phase:	Construction					
<b>Construction Start:</b>	January 2015		Scope	Agreement/Contract Amount		
<b>Construction Completes:</b>	June 2017	WSDOT	Final Design	\$ 20,942,000		
F		WSDOT	CM Services	\$ 16,358,000		
		IMCO	Construction	\$122,021,000		

# **Key Project Activities**

- Mercer Island Tunnel: Install ceiling at EP Nozzle, Grout Supply fans, motor bases, and repair valve station #5 leak.
- Work outside the tunnels: ICW drainage and roadway excavation work, Dowel bar retrofit slot fill back.
- *Mount Baker Ridge Tunnel:* Work on stairwell, doors, and DDW supports in hollow core slab ceiling, exterior piping fabrication and installation, apply pigmented sealer at walkway exterior in NFR. Install feeder wires, emergency lighting conduit runs, install divider wall columns & hanger brackets, MIT generator room modifications.
- *SCADA*: Existing panel retrofit design, control strategy and design, VMS/ITS subpanel production system has passed endurance testing.
- Simplex: Upgrade mock-up system to new 4100ES panels, testing software, MIT Foam Tank system upgrade.



## **Closely Monitored Issues**

- *Contractor's Progress Schedule updates*: ongoing discussion and partnering continues in an effort to resolve progress methodology issues; an acceptable schedule update has not been submitted since December.
- *Fire/Life Safety submittal and coordination of approvals, & RFI response,*: additional staff support has been brought on board to assist with issues; currently only a few remain to be caught up.
- The fan installation at Mercer Island was delayed due to a switch gear malfunction. Contractor is currently implementing a repair plan to bring the additional fans online.

## **Project Cost Summary**

Total Project Costs expended this period is \$7.52M. 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	Commit- ment 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.I	\$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	\$88.8	\$198.3	\$0.0
Total	\$225.6	\$225.6	\$188.0	\$109.7	\$225.6	\$0.0

### 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	\$88.8	\$180.6	\$0.0
80 Professional Services	\$26.3	\$26.3	\$21.6	\$20.9	\$26.3	\$0.0
90 Unallocated Contingency	\$18.7	\$18.7	\$0.0	\$0.0	\$18.7	\$0.0
Project Total (SCC 10-90)	\$225.6	\$225.6	\$188.0	\$109.7	\$225.6	\$0.0



# **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 WSDOTcontrolled 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*).

	Base	eline	Current			
Contingency Status	Amount	% of Total	Amount	% of Work Remaining		
Design Allowance	\$.0.0	0.0%	\$0.0	0.0%		
Allocated Contingency	\$17.0	7.5%	\$15.8	13.6%		
Unallocated Contingency	\$18.7	8.3%	\$18.5	16.0%		
Total	\$35.7	15.8%	\$34.3	29.6%		

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		nal Tunnel ning Period	Final Tunnel Commissioning Complete		Substantial Completion			nal Pavement king	Physical Completion & Center Roadway Turnover	
1-90 Two-Way	Baseline	Forecast / Actual	Baseline	Forecast / Actual	Baseline	Forecast / Actual	Baseline	Forecast / Actual	Baseline	Forecast / Actual
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



# What goes on during the I-90 roadway closures?





Installing loops prior to oerlay of floating bridge.

Stage exhaust fans



Installing signs at Rainier Ave. off-ramp.



Installing Saccardo nozzle at the Mercer Island Tunnel.

# Link Light Rail East Link Extension





Map of East Link Extension Alignment.

#### Scope

Limits:	Downtown Seattle to Mercer Island, Bellevue and the Overlake area of Redmond.
Alignment:	East Link extends light rail 14 miles to East King County from Downtown Seattle serving Mer- cer 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.
Stations:	Judkins Park (formerly Rainier), Mercer Island, South Bellevue, East Main, Bellevue Down- town, Wilburton (formerly Hospital), Spring District/120th, Bel-Red/130th, Overlake Village and Redmond Technology Center (RTC).
Systems:	Signals, traction power, and communications (SCADA).
Budget:	\$3.677 Billion Baseline Budget (Year of Expenditure Dollars)
Phase:	Construction
<b>Construction Starts:</b>	2016
Service:	June 2023

# **Key Project Activities**

### Seattle to South Bellevue

- *Floating Bridge:* PT and Flood Assessment Report Review comments received from detailed design (90%) progressing.
- *Permits*: Seattle Shoreline permit has been submitted. Hydraulic Permit has been issued.
- GC/CM submitted the draft site access, traffic control, and subcontract packaging, and outreach plans as part of preconstruction services.
- Completed fabrication of plinths for the floating bridge track attachment mock-up.
- Began demolition for the off-site floating bridge track attachment mock-up.

### 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.
- ST and Microsoft continued working to finalize agreements for the temporary construction easements for guideway and pedestrian bridge construction
- Coordinating with City of Bellevue to implement the demolition agreement (Teledesic building).



#### South Bellevue to Redmond (continued)

- *E320*: Advertised for construction. PSE advanced utility relocation work being planned.
- *E330*: All demolition is complete in the vicinity of the south portal; CLSM to start mid-June: continue three drift SEM design; working with PSE on vault relocation along 110.
- *E335*: Preparing for RFQ of station buy out subcontract package with notice in DJC with tentative RFQ next month; Working with City of Bellevue on mitigating impacts of their Zone 1B contract; Independent estimate continues for sub-packages.
- *E340*: Working on MOT presentation in contract documents; working with private utility owners on temporary and final configurations; review contract specifications; preparing special conditions.

## **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 \$11.2M was incurred this period.

Cost Summary by Phase

Project Phase	Baseline Budget	Current Adopted Budget	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
Administration	\$186.2	\$186.2	\$46.0	\$45.5	\$186.2	\$0.0
Preliminary Engineering	\$55.9	\$55.9	\$54.5	\$54.4	\$55.9	\$0.0
Final Design	\$283.0	\$283.0	\$222.2	\$172.3	\$283.0	\$0.0
Construction Services	\$257.5	\$257.5	\$115.7	\$11.7	\$257.5	\$0.0
3rd Party Agreements	\$52.2	\$52.2	\$26.7	\$6.7	\$52.2	\$0.0
Construction	\$2,544.3	\$2,544.3	\$145.1	\$28.6	\$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	\$152.7	\$148.9	\$298.2	\$0.0
Total	\$3,677.2	\$3,677.2	\$762.9	\$468.1	\$3,677.2	\$0.0

#### Cost Summary by SCC

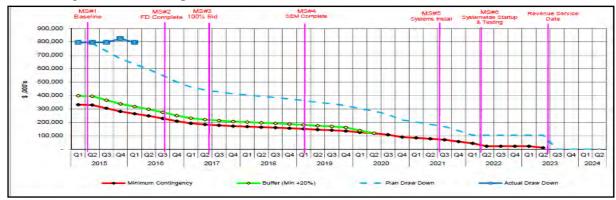
SCC Element	Baseline Budget	Current Adopted Budget	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 Guideway & Track	\$744.6	\$744.6	\$109.0	\$9.4	\$744.1	\$0.5
20 Stations	\$397.7	\$397.7	\$0.0	\$0.0	\$397.7	\$0.0
30 Support Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$808.5	\$808.5	\$34.7	\$19.2	\$809.0	(\$0.5)
50 Systems	\$353.8	\$353.8	\$1.4	\$0.0	\$353.8	\$0.0
Construction Subtotal (10 - 50)	\$2,304.6	\$2,304.6	\$145.1	\$28.6	\$2,304.6	\$0.0
60 Row, Land	\$288.5	\$288.5	\$152.7	\$149.0	\$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	\$465.1	\$290.5	\$900.2	\$0.0
90 Unallocated Contingency	\$182.9	\$181.0	\$0.0	\$0.0	\$181.0	\$0.0
Total (10 - 90)	\$3,677.2	\$3,677.2	\$762.9	\$468.1	\$3,677.2	\$0.0



# **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 another \$0.6M, to a new total amount of \$793.9M. The contingency balance remained higher than the anticipated draw down.

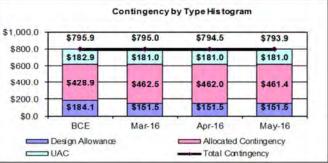


**Design Allowance** is used to account for scope that could not be quantified at the time of the cost estimate. The total amount of design allowance in the baseline cost estimate was \$184.1M. Design allowance had been drawn down in the prior periods to offset the increase in the base cost estimate 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 \$0.6M. This was due to the execution of change orders on the E335 GC/CM Pre-construction contract to extend the pre-construction period to coincide with the baseline schedule, and on the South Bellevue to OTC Final Design contract to address various design changes in Contract Package E340. Total allocated contingency balance is now \$461.4 M.

**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 \$182.9 million. UAC had been drawn down to \$181.0M in the Fall of 2015, but has not been changed since then.

Contingency	BC	E	Current	Status
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%	\$461.4	14.4%
Unallocated Contingency	\$182.9	5.0%	\$181.0	5.6%
Total:	\$795.9	21.6%	\$793.9	24.7%



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 has finalized the Risk Management Report for the 1st QTR 2016, and began the preparation for the 2nd QTR 2016 Risks Review. Sound Transit has participated contractors who are already under contracts (E130, E330 and E335).



# **Project Schedule**

The East Link Extension (EL) is in Final Design transitioning to Construction. Sound Transit Board baselined EL on April 23, 2015. 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.

ActivityName	Start	Finish	2011	2012 0 0 0 0	2013				2017 2 0 0 0 0						
Preliminary Engineering														////	
East Link - Board Identifies Preferred Location	28-Jul-11 A		•												
EastLink - PERelease of Design	22-Sep-11 A		+												
East Link - ST Board - Phase Gate Approval		27-Oct-11 A	•												
EastLink - Record of Decision (ROD)		23-Nov-11A	•	·											
Design/IFB Packages									······						X//
E130-DESIGN	26-Mar-12 A	14-Dec-16													
E320 - D ESIGN	26-Mar-12 A	28-Jan-16 A						•							
E330 - D ESIGN	26-Mar-12 A	15-Jun-15 A													
E335-DESIGN	26-Mar-12 A	07-Oct-16													
E340 - D ESIGN	26-Mar-12 A	23-May-16 A								1	1		1	V////	X//
E750 - D ESIGN	03-Dec-12 A	26-Jul-17													
Right of Way					-					4					
E130- ROW & TC AL/ASL	01-Oct-14 A	29-May-17													
E320- ROW & TC AL	01-Nov-13 A	28-Mar-17			1				<b>+</b>						
E330- ROW	01-Oct-13 A	21-May-16 A								1					
E335- ROW & TC AL/A SL	23-Dec-13 A	25-Dec-17													
E340- ROW	16-Jul-13 A	26-May-17				1			<b>-</b>						
E360 - ROW & TCAL/ASL	19-Jul-13 A	17-Jul-17	_						<u>+</u>						
Procurements						-			•						
E130-GCCM PROCUREMENT	16-Mar-15 A	20-Nov-15A				•									*//
E320 - PROCUREMENT	29-Jan-16 A	10-Nov-16	_												$\chi/$
E330 - PROCUREMENT	19-Aug-15 A	15-Dec-15A	-												
E335-GCCM PROCUREMENT	20-Jun-14 A	20-Jan-15 A					-								
E340 - PROCUREMENT	24-May-16 A	08-Dec-16	-												
E360-D/B PROCUREMENT	26-Aug-14 A	01-Aug-16	1			- 				+					1//
E750 SYSTEMS - GC CM PROCUREMENT	02-Jun-15 A	08-Jan-16 A						Ţ.							
Pre-Construction							<u> </u>		+-						
E130-GCCM PRE-CONSTRUCTION SERVICES	01-Dec-15 A	27-Feb-17							<b>_</b>						
E335- GCCM PRE-CONSTRUCTION SERVICES	30-Dec-14 A	07-Apr-17	_												
E750 SYSTEMS - GC CM PRE-CONSTRUCTION SERVICES	09-Jan-16 A	16-Mar-17				•		·		+		+			X//
Civil Construction													•		
E130-GCCM Construction	28-Feb-17	12-Dec-20													
E320 - Contract Duration (D/B/B)	11-Nov-16	06-Nov-20													
E330 - Contract Duration (D/B/B)	17-Dec-15 A	07-Jun-20	_						1						X/A
E335-GCCM Construction	07-Apr-17	18-Feb-21	1												
E340 - Contract Duration (D/B/B)	04-Jan-17	15-Aug-20													
E360 - D/B Contract Duration	01-Aug-16	07-Mar-20	_												
Systems	_										-			₩///	
E750 - GCCM (East Link) Construction	02-Sep-19	31-Mar-22													
Project Wide Close-Out			1					· • · · • • • • • • • • • • • • • • • •		1					1//
East Link Testing & Start Up	01-Apr-22	30-Sep-22													$\chi/$
East Link Float - 9 Months	01-Oct-22	30-J un-23													4//
East Link Target Revenue Service Date		30-Jun-23*	-											V///	X

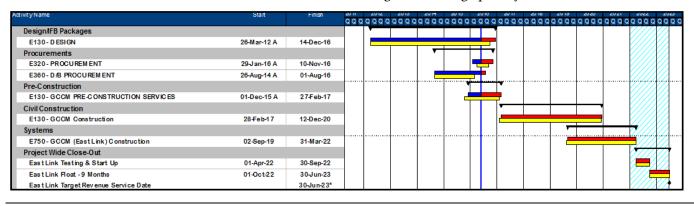
\*Note: This schedule represents East Link Schedule Progress. EL Baseline Schedule is represented by lower bar (yellow).

# Link Light Rail East Link Extension



## 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 Agree- ments	Possession and Use	Closings to date	Baseline Relocations Required	Relocations Completed		
Seattle to S. Bellevue	2	I	0	0	0	0	0		
S. Bellevue to RTC	237	207	I	13	118	231	172		
Bellevue Mile	I	l	Ι	0	I	0	0		
Total	240	209	2	13	119	231	172		

#### 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-

Four parcels granted P&U; one parcel closed. Air Space Lease discussions with WSDOT continue.

*E330 Downtown Bellevue* – No new activity.

*E335* – Three offers made, four parcels closed; one parcel vacated.

*E340 Bel-Red* - One parcel granted P&U; one parcel closed and three parcels vacated.

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



# **Quality Assurance Activities**

#### Activities

- None to report.
- <u>Issues</u>
- None to report.

#### Summary

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

# **Sound Transit Board Actions**

Board Action	Action Description				
M2016-48	Execute a design-build contract with Kiewit-Hoffman East Link Constructors to complete the final design and con- struction of the civil work for the SR-520 to Overlake Transit Center Segment within the East Link Extension in the amount of \$225,336,088 with a 10% contingency for a total authorized con- tract amount not to exceed \$247,869,697.	May 26			
M2016-49	Execute a contract amendment with LTK Engineering Services, Inc. to provide design services during construction for the East Link Extension in the amount of \$6,455,000 for a new total author- ized contract amount not to exceed \$24,361,805.	May 26			

## **Community Outreach**

- Hosted Downtown Construction drop-in session at Hilton Bellevue and 15 people attended.
- Hosted a briefing at the Ardmore Community Club and provided station design and construction timeline update to 43 neighborhood attendees.
- Presented update to Bellevue Downtown Association Board.

## Environmental

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

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



## **Final Design Scope**

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

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

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



Map of South Bellevue to Redmond Technology Center.

## **Final Design Key Activities**

#### E320 So. Bellevue

- Design of the E320 contract package is complete.
- Commenced 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 the QC review process on IFB documents.
- Prepared the E335 IFB submittal documents, 120th Station 100% documents, and Bellevue City Hall Plaza progress submittal documents.
- Continued advancement of the 100% design of 120th Station and vicinity, and participated in the weekly Task Force meetings with the City of Bellevue and Wright Runstad.

## E340 Bel-Red

- Continued coordination with private utilities to issue utility task orders.
- Supported the permit application process.
- Resolved design comments about Artist railing installation and lighting.
- Responded to property owner negotiation questions and support of private utility Task Orders.

### E360 SR 520 to Redmond Technology Center

• Prepare to begin providing Design Support for the E360 Design/Build Contract.



## **Final Design Schedule**

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

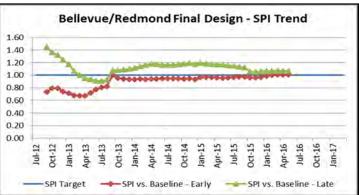
Contract	<u>60% Su</u>	<u>bmittal</u>	<u>90%</u> Si	<u>ıbmittal</u>	<u>100%</u> S	ubmittal	IFB Submittal			
Packages	Baseline*	Forecast/ Actual	Baseline*	Forecast/ Actual	Baseline*	Forecast/ Actual	Baseline*	Forecast/ Actual		
E320 So. Bellevue	12/6/2013	12/6/2013	9/19/2014	9/19/2014	4/3/2015	4/3/2015	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.)	6/13/2016 (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	5/23/2016		
	Draft RFP	Submittal	Final RFP	Submittal	*Baseline schedule dates revised to reflect final contract packaging					
	Baseline*	Forecast/ Actual	Baseline*	Forecast/ Actual	ana construction	struction delivery methods.				
E360 SR-520 to RTC	2/18/2014	2/18/2014	8/14/2015	8/14/2015	]					

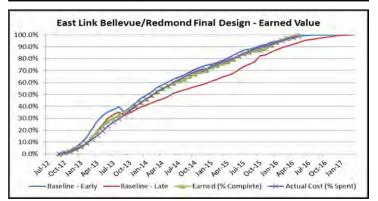
### Final Design Schedule Performance

Excluding Other Direct Expenses (ODC's), Profits and DSDC, the Schedule Performance Index (SPI) reported this period is at 1.01 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 \$82.72M, or 98.8% of the budget. Progress earned through the same period is approximately 99.7% or \$83.5M 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	Cumula- tive To Date
Labor Amt. Invoiced	\$81,812,983	\$909,923	\$82,722,906
% Spent	97.7%	1.1%	98.8%
Earned Value	\$82,215,300	\$1,279,587	\$83,494,887
% Complete	98.2%	1.5%	99.7%
СРІ	1.00	1.41	1.01

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



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:* PT and Flood Assessment Report Review comments received. Detailed design (90%) progressing. Submittal Date: July 1, 2016.
- *IRT*: WSDOT and ST have concurrence on all IRT issues. Met with FHWA for presentation on Issue B on May 26th.
- Fixed Structures: Detailed design (90%) progressing. E120 is in QC. Submittal Date: 6-17-2016.
- *Permits*: Seattle Shoreline permit has been submitted. Hydraulic Permit has been issued. DAP under review by FHWA.

#### Third Party, Agreements, & Permits

- Amendment 1 to the East Link Supplement with the City of Seattle is being finalized.
- Sound Transit met with the King County Sewer Interceptor project team to coordinate needs around the East Channel Bridge.

#### **Construction & Construction Management**

- Completed fabrication of plinths for the floating bridge track attachment mock-up, and demolition for construction of the off-site mock-up facility has begun.
- Draft plans for site access, phasing, traffic control, pedestrian access, subcontract packaging, outreach, and parking were submitted by the GC/CM (Kiewit-Hoffman) as part of preconstruction services. Also submitted and presented was the 60% floating bridge construction plan. Sound Transit conducted an I-90 Tunnel tour for representatives of Kiewit-Hoffman and WSDOT.
- Ongoing coordination continues with the E750 team regarding the International District Station tie-in, as well as other interface points along the E130 alignment.
- A workshop emphasizing the conversion of the International District Station (IDS) was conducted with King County Metro Constructability Reviews/Value Engineering:



## **Final Design Schedule**

	<u>60% S</u>	ubmittal	<u>90%</u> Su	bmittal	<u>100% Submittal</u>		
<u>Contract Packages</u>	Baseline Actual		Baseline	Forecast/ Actual	Baseline	Forecast/ Actual	
EI 30 – Rail connection & IDS upgrades; Seismic retrofits; and I-90 Civil/Arch./Elect. & Mech. Up- grades	4/4/2014	7/11/2014	6/16/2016	7/1/2016	12/14/2016	12/14/2016	

## Final Design Schedule Performance

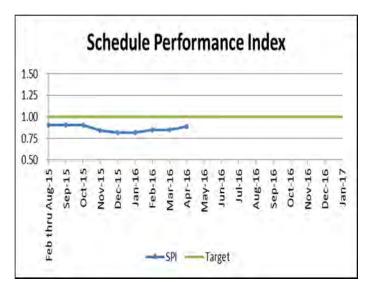
As part of the accepted Cost to Complete, a revised baseline schedule was submitted by the Consultant and subsequently rejected; it has been revised and was accepted March 19, 2016. Baseline milestones will be revised by an administrative change order to reflect the milestones as shown above. A schedule update will be submitted with the current invoice, due June 25.

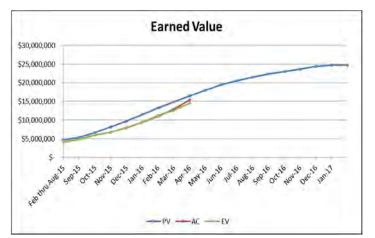
Excluding Other Direct Expenses (ODC's) and Profits, the Schedule Performance Index (SPI) reported this period is 0.88 when measuring against the Phase 2 Early Schedule Baseline, indicating the project continues to trend behind schedule but continues to stabilize. The schedule performance may be due 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**

A revised baseline cash flow for all remaining work was submitted by the consultant, and monthly cost performance reporting has resumed; 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 \$21.20M; current CPI is 0.82, down from 0.86 the previous month, indicating the project is trending over budget. This may be due to additional work efforts to achieve the "pencils down" stage prior to submitting the 90% plans, now anticipated 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, a change order for \$482,001 to include Post Tension Design in the contract has been executed; this change includes a \$399.7K credit from the Bolt Testing Program, which WSDOT requested be replaced by Post Tension design to resolve IRT issue B. Including professional fee, invoiced to-date through April 2016 for total Labor and Other Direct Costs for Final Design is \$45.9M, or 84.64% of the current authorized budget. Cost performance will be closely monitored.





Performance	Previous	Current	Cumulative To
(DL+OH only)	Period	Period	Date
Amount invoiced	\$12, <del>9</del> 49,343	\$2,451,262	\$15,400,605
% Spent	64.7%	12,2%	76.9%
Earned Value	\$11,199,787	\$1,968,782	\$12,589,751
% Complete	50.2%	9.8%	60.0%
CPi	0.86	0.80	0.82



### 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**

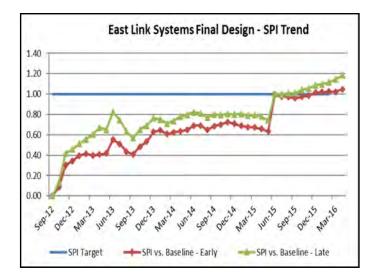
- Design integration with the OMSF project has been prescribed and coordinated with the E750.
- Attended multiple workshops to finalize the duration of the IDS work and evaluate value engineering ideas.
- ST Board aproval of Design Support During Construction Change Order.
- All ST and Contractor comments to the 90% submittal have been provided and are being evaluated Completed I-90 floating bridge cathodic protection proof of concept test.

### **Final Design Schedule**

	<u>60% Su</u>	<u>bmittal</u>	<u>90% S</u> i	<u>ubmittal</u>	<u>100% Si</u>	<u>ıbmittal</u>	<u>IFB</u>	<u>Submittal</u>
	Baseline	Actual	Baseline	e 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	8/1/2016	8/1/2016	12/1/2016	12/12/2016

### **Final Design Schedule Performance**

The project is 82.8% complete resulting in an Earned Value of \$14.6M. The project has an early SPI of 0.93 and a late SPI of 1.02 which indicates that the contract is on schedule.

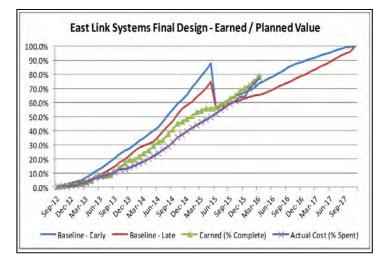




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## **Final Design Cost Performance**

Through the end this period, the project has spent 80.8% of the budget resulting in CPI of 1.02. The current Estimate at Completion (EAC) is expected to be less than the current budget of \$17.9M.



Perfor- mance	Previous Period	Current Period	Cumulative To Date
Labor Amt. Invoiced	\$13,573,878	\$660,847	\$14,234,725
% Spent	77.0%	3.8%	80.8%
Earned Value	\$13,924,685	\$660,847	\$14,585,532
% Complete	77.8%	5.0%	82.8%
CPI	1.1	1.0	1.0



# **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.

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: Reconciling 60% cost estimate and schedule. Discussing Constructability and value engineering comments with design team and GC/CM.

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-bidbuild]

Status: See following pages.

R8A Stage 3A – Modification of HOV Ramp between I-90 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-bidbuild]

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 on January 8, 2016. GC/CM reviewing design documents, and coordinating with designers.



## Contract E330 – Downtown Bellevue Tunnel

### **Current Progress**

The majority of the work for this schedule update was in the completion of abatement and demolition of properties in the South Portal area, which was followed by tree removal, clearing and grubbing, and rough grading activities of the site. Quarry spalls were placed this period concurrently with the excavation in order to control erosion.

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 but it is consistent with the SPI analysis (see below)

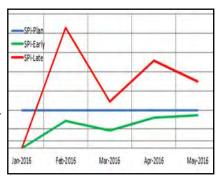
### **Schedule Summary**

Due to a change in the sequencing of Controlled Low-Strength Material (CLSM) installation on 110th Ave, work leading up to Milestone 1 is progressing ahead of schedule. The critical path for this contract currently follows the South Portal excavation through the tunnel excavation and the completion of the South Portal structure.

Activity Name	Start	Finish	2(	016			2(	017			2	018			20	19			202	0	
			Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
E330 Downtown Bellevue Tunnel	08-Feb-16 A	07-Jun-20						1	1		1		1						-		
CONSTRUCTION	08-Feb-16 A	07-Jun-20	-	-			:	-	1		-	-							-		
MILESTONESIC ON STRUCTION EASEMENTS	11-Dec-16	07-Jun-20						÷	+		<u>;</u>	<u>;</u>	<u>.</u>		<u> </u>	-	_	<del></del>	-		
MILESTONES	11-Dec-16	07-Jun-20						:	-		:		:					<u> </u>	-		
CONTRACT MILESTONES	11-Dec-16	07-Jun-20		1				<u>+</u>	-		:	<u>.</u>	:				_	<del>- :</del>	-		
MLST 1 - (NTP +300 Days = 12/3/18) Acceptance of the 110th Ave Controlled Low Streng	pt	11-Dec-16*		i	٠	MLST	1 - (NI	1P +30	0 Days	= 12/3	(18) A	speptan	¢eo fi	he 110	th Ave	Control	led Lo	v Streng	th Mate	erial Wo	ork -
MLST 3 - (NTP +1445 Days = 1/22/20) Substantial Completion of all Work from Station E		22-Jan-20*																+ MLS	т 3 - (М	NTP +14	145 I
MLST 4 - (NTP +1582 Days = 6/7/20) Substantial Completion Total Contract		07-Jun-20*																	♦ N	ALST 4 -	- (N
MOBILIZATION	08-Feb-16 A	17-Jan-19	-	-	-		-	<del>: -</del>	+		<del>: -</del>	<del>: -</del>	<del>.</del> -	+							
SITEWOR K	29-Feb-16 A	06-Jun-20	-	<u>.</u>			<u>.</u>	÷	<del>.</del> .		<u>.</u>	÷	<u>.</u>	-	<u>.</u>		_	<del>.</del>	-	1	
PRECONSTRUCTION	21-Mar-16 A	07-May-20		;				;					;						-		
TRAFFIC CONTROL	25-Mar-16 A	23-Dec-19		:			:	:	:		:	:	:		:	:					
SUR VEY & M ONITO RING	08-Mar-16 A	15-Mar-17		:				1			1		1								
NORTH PORTAL AREA	23-Jun-16	13-Mar-18	1	ę.				i.	1	•											
SOUTH POR TAL AREA	29-Feb-16 A	06-Jun-20											:						-		
SKYLINE BUILDING RETROFIT	08-Nov-16	24-Mar-17		-	-		Ę	1	-		-	-	1	1							
TUN NELING	15-Dec-16	23-Dec-19		1				1	1		1	1									
EX CAVATION	15-Dec-16	18-Dec-18				-	-	-	-		-	-		r							
FINAL TUNNEL LINING	19-Dec-18	20-Sep-19											۰.		<u>.</u>	-					
FINAL TUNNEL FINI SHES	11-Apr-19	23-Dec-19		1				1	1		1	1	1		-						
MID TUNNEL	05-Mar-18	02-May-19		÷		1		******			<u>.</u>	÷			÷.			(			
DEMOBE	15-Dec-16	07-May-20		1				÷	-		÷		÷			-		<del>  + +</del>	<b>-</b> 7		

### Schedule Performance Index

This period, the SPI early (0.87) is trending later than anticipated and the SPI late (1.7) is holding its trend on completion within the baselined schedule. The index indicates that the contractor continues facing some



challenges in completing the current tasks within the planned time frame but continues to have time to complete their remaining work within the baselined schedule.

### **Cost Summary**

Present Financial Status	Amount
E330 Contractor	
Original Contract Value	\$121,446,551
Change Order Value	\$500,000
Current Contract Value	\$121,946,551
Total Actual Cost (Incurred to date)	\$9,769,264
Financial Percent Complete:	8.05%
Physical Percent Complete:	8.05%
Authorized Contingency	\$12,144,655
Contingency Drawdown	\$500,000
Contingency Index	2.0



## Next Period's Key Activities

- Begin installation of the construction site sound wall and gates around the south portal site.
- Begin installation of the Controlled Low-Strength Material (CLSM) Phase I work.
- Continue addressing unforeseen utilities/utility line configurations uncovered during CLSM work.
- Begin trenching and installation of sanitary sewer line along 112<sup>th</sup> Ave.

### **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 regrading tunnel fire suppression standpipe and water in the tunnel construction is lagging.



Removing rockery at one of the demolition sites.



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# Link Light Rail S. 200th Link Extension



## Scope

- Limits: South 200th Link Extension consists of 1.6mile extension of light rail from the SeaTac/Airport Station to South 200th Street.
- Alignment: The extension continues in an aerial configuration heading south of the existing SeaTac/Airport Station, east of Air Cargo Road across South 188th Street, and continuing south along the east side of 28th Avenue South to the elevated Angle Lake Station located at South 200th Street. A passenger pickup/drop-off area, bus transfer, plaza, and a minimum 700-space structured park and ride facility will be located at Angle Lake Station. Up to 400 additional spaces may be developed for interim parking while Angle Lake Station is the interim southern terminus of the Link system. Guideway/Station and Parking Garage/ Plaza are being delivered under a Design Build contract. Angle Lake Station is located at South 200<sup>th</sup> Station:

	Street.
Systems:	Signals, track electrification, and SCADA communications
Budget:	\$383.2 Million
Service:	September 2016
Phase:	Final Design and Construction





# **Key Project Activities**

- Design Build Guideway and Station (S440): Station/Ran first test train at Angle Lake Station. Station/ Guideway finishes are nearing completion, punchlist work continues, landscape/street restoration continues. Working through issues that are impacting System Integration/Testing. Need to reconcile various cost issues (existing crack street panels, 54-inch storm repairs, and fee-in-lieu agreement) with the City of SeaTac.
- *Design Build Parking Garage (S445)*: Construction continues with garage structure/façade installation and plaza area. Garage elevator equipment to deliver in separate shipments, but September revenue service opening will still occur because the City to grant temporary occupancy.
- *Military Road / South 200th (S446):* ) WSDOT bid opening was April and contract has been awarded; NTP anticipated July 5th; 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 200<sup>th</sup> Street, 28<sup>th</sup> Ave and Angle Lake parking lot.

# **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 a commissioning and system-wide testing activities. Immediate action needs to be taken to mitigate issues to prevent further erosion of the project float.



## **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	Commit- ment to Date	Incurred to Date	Est. Final Cost (EFC)	Adopted Budget vs. EFC
Administration	\$16.1	\$16.8	\$13.5	\$13.4	\$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	\$13.8	\$16.9	\$0.4
3rd Party Agreements	\$6.9	\$7.1	\$5.7	\$3.6	\$5.9	\$1.2
Construction	\$275.7	\$282.9	\$232.6	\$220.0	\$245.6	\$37.4
Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$43.5	\$43.5	\$42.8	\$37.9	\$43.5	\$0.0
Capital Total	\$383.2	\$383.2	\$324.0	\$303.0	\$343.2	\$40.0
Finance Cost	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Project Total	\$383.2	\$383.2	\$324.0	\$303.0	\$343.2	\$40.0

The overall project Estimated Final Cost (EFC) for this period reflects \$343M, a savings projection of \$40M. This period incurred cost increased by approximately \$5.2M, of this \$4.3M was for construction activities. S440 Guideway & Station Design Build contract was \$2.1M, S445 Parking Garage Design Build contract was \$0.8M, S447was \$1.3M. Construction services were \$0.6M and the remaining expenditures for \$0.3M were related to administrative charges.

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

Project Elements by SCC	Baseline Budget	Adopted   ment to		Incurred to Date	Est. Final Cost (EFC)	Adopted Budget vs. EFC
10 Guideway & Track Elements	\$144.8	\$133.0	\$98.6	\$100.7	\$108.0	\$25.0
20 Stations	\$46.4	\$51.3	\$39.3	\$36.4	\$39.8	\$11.5
30 Support Facilities: Yards, Shops	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$34.6	\$55.3	\$54.9	\$44.1	\$57.6	-\$2.3
50 Systems	\$30.8	\$19.9	\$19.2	\$18.8	\$19.4	\$0.5
Construction Subtotal (SCC 10-50)	\$256.6	\$259.6	\$212.1	\$200.0	\$224.8	\$34.7
60 Row, Land, Existing Improvements	\$43.5	\$43.5	\$42.8	\$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	\$69.1	\$65.2	\$68.3	\$3.8
90 Unallocated Contingency	\$19.0	\$8.0	\$0.0	\$0.0	\$6.6	\$1.5
Project Total (SCC 10-90)	\$383.2	\$383.2	\$324.0	\$303.0	\$343.2	\$40.0
100 Finance Cost	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Project Total (SCC 10-90)	\$383.2	\$383.2	\$324.0	\$303.0	\$343.2	\$40.0



## **Cost Contingency Management**

The overall project contingency balance as of this period is \$59.2M.

*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 \$56.2M, a decrease of \$3.6M from the previous period. The reduction was primarily due to construction phase: WSDOT construction Task Order authorized (\$3.2M), two construction change orders from S445 and S447 (\$0.2M), startup and administration commitments of \$0.2M.

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

0	Baseline		Current		\$70.0					
Contingency Status	Amount	% of Total	Amount	% of Work Remaining	\$60.0 \$50.0	\$6.6	Contingency Histogra	m \$6.6		
Design Allowance	\$26.7	7.0%	\$-	0.0%	\$40.0			-		
Allocated Contingency	\$29.8	8.0%	\$52.6	130.8%	\$30.0 \$20.0	\$56.6	\$56.2	552.6		
Unallocated Contingency	\$19.0	5.0%	\$ 6.6	16.4%	\$10.0 \$-					
Total	\$75.5	20.0%	\$59.2	147.3%		Mar-16 In Allowance	Apr-16 Allocated Contingency Una	May-16 Illocated Contingency		

## **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).

svity Name	Start	Finish									
			-	02	2016	Q3	-	04	-	01	2017
Sound Transit	06-May-13 A	05-Dec-16	_	146		40	_		-	41	
University Link (UL)	08-Mar-16 A	05-Dec-16									
Rail Activation Schedule	08-Mar-16 A	05-Dec-16	_								
Rail Activation	08-Mar-16 A	05-Dec-16	_				-				
Pre-Revenue Service - 5, 200th Link	09-Aug-16	24-Sep-16				-	-				
Pre-Revenue Service - 5. 200th	09-Aug-16	17-Sep-16				-	7				
Pre-Revenue Service - \$200th	19-Aug-16	17-Sep-16				-	-				
Pre-Revenue Service - Commencement - S 200th	19-Aug-16*					٠					
Pre-Revenue Service - S. 200th	19-Aug-16	17-Sep-16				_	-				
Pre - Revenue Service - Complete- S 200th - W/O Float		17-Sep-16*					•				
Phasegate 7 - 5. 200th	12-Aug-16	18-Aug-16				-	*********				
Phasegate 7 - Transition to Operations	12-Aug-16	18-Aug-16									
Pre-Revenue Service - Readiness Review - \$200th	09-Aug-16	11-Aug-16									
Revenue Service Window - 5. 200th	19-Sep-16	24-Sep-16					-				
Revenue Service Window	22-Sep-16	24-Sep-16					•		_		
Revenue Service Float - S. 200th	22-Sep-16	24-Sep-16							1		
Revenue Service Start - S. 200th - with Float (Sept. 24, 2016)		24-Sep-16*					٠				
Revenue Service - Readiness Review	19-Sep-16	22-Sep-16									
Task Group 4.0 - Rail Operations	19-Aug-16	17-Sep-16				_	-				
4.5 - Rail Operations - Pre - Revenue Service	19-Aug-16	17-Sep-16				-	•		_		
Task Group 7.0 - Safety & Security	08-Mar-16 A	05-Dec-16									
7.2 - Safety & Security - Certification	08-Mar-16 A	05-Dec-16									
LRT Extension - South	06-May-13 A	14-Oct-16					-				
S440 - Guideway and Station - Design/Build	06-May-13 A	08-Aug-16	_			-					
5447 - Station Area Roadway Improvements	21-Jan-15 A	02-Sep-16	_		2.4.1.						
\$445 - Parking Garage - Design/Build	03-Mar-14 A	14-Oct-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.)

# Link Light Rail S. 200th Link Extension



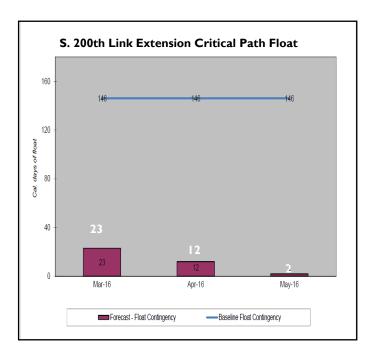
## Critical Path Analysis, continued

divity Name	Start	Finish					1			
			02	2018	03	04	Q1	2017	02	
Sound Transit	31-Jul-15 A	14-Oct-16				-		_		
University Link (UL)	19-Jul-16	24-Sep-10		-						
Rail Activation Schedule	19-Jul-16	24-Sep-16		-						
Kail Activation	19-Jul-16	24-Sep-16		-						
Pre-Revenue Service - S. 200th Link	09-Aug-16	24-Sep-16								
Pre-Revenue Service - \$ 200th	09-Aug-16	17-560-16								
Pre-Revenue Service - \$200th	19-Aug-16	17-Sep-16								
Pre-Revenue Service - Commencement - 5 200th	19-Aug-16*				•					
Pre-Revenue Service - S. 200th	19-Aug-16	17-Sep-16			-					
Pre - Revenue Service - Complete- 5 200th - W/O Float		17-Sep-16*								
Phasegate 7 - 5. 200th	12-Aug-16	18-Aug-16								
Pre-Revenue Service - Readiness Review - \$200th	09-Aug-16	11-Aug-16								
Revenue Service Window - 5. 200th	19-Sep-16	24-Sep-16								
Revenue Service Window	22-Sep-16	24-Sep-16								
Revenue Service Float - S. 200th	22-Sep-16	24-Sep-16					den son a de series			
Revenue Service Start - S. 200th - with Float (Sept. 24, 2016)		24-Sep-16*	**********		•	**********************	**********	***********		
Revenue Service - Readiness Review	19-Sep-16	22-Sep-16								
Task Group 3.0 - System Testing and Commissioning	19-Jul-10	10-Aug-16		-	-					
3.2 - System Testing and Commissioning - Testing	10-Jul-16	10-Aug-16			-					
5200th - System Integration and Testing	19-Jul-16	10-Aug-16		-	-					
Pre-Revenue Service SIT	19-Jul-16	22-Jul-16								
Revenue Service SIT	04-Aug-16	10-Aug-16			-					
Task Group 4.0 - Rail Operations	19-Aug-16	17-Sep-16								
4.5 - Rail Operations - Pre - Revenue Service	19-Aug-16	17-Sep-16								
\$200th	19-Aug-16	17-Sep-16								
\$200th Operator Qualification	19-Aug-16	02-Sep-16			-					
S200th Simulate Revenue Service	03-Sep-16	17-Sep-16			-					
Task Group 7.0 - Safety & Security	31-Jul-16	21-Sep-16			· · · · ·					
7.2 - Safety & Security - Certification	31 Jul-16	21-Sep-16								
5. 200th Safety Certification	31-Jul-16	21-Sep-16								
Safety Certification	31-Jul-16	21-Sep-16								
LRT Extension - South	31-Jul-15 A	14-Oct-16				-				
\$440 - Guideway and Station - Design/Build	31-Jul-15 A	08-Aug-16			-					
Construction	31 Jul 15 A	05-Aug-16			-					
Bystems	31-Jul-15 A	08-Aug-16								
Overhead Catenary	11-Jun-16	13-Jun-16								
Signals/Train Control	21-Mar-16 A	08-Aug-16	-		-					
Communications	31-Jul-15 A	26-Jul-16								
Commissioning Activities	21-Mar-16 A	11-Jul-16		· · · · ·		-				
\$445 - Parking Garage - Design/Build	26-Oct-15 A	14-Oct-16								

# **Critical Path Float**

The baseline float contingency for S. 200th Link Extension was 146 days. Over the past several months, it has been reported that there are a number of issues that have the potential to utilize some of that float. These issues have been closely monitored and it appeared that several of these issues cannot be mitigated and required the use of the project float.

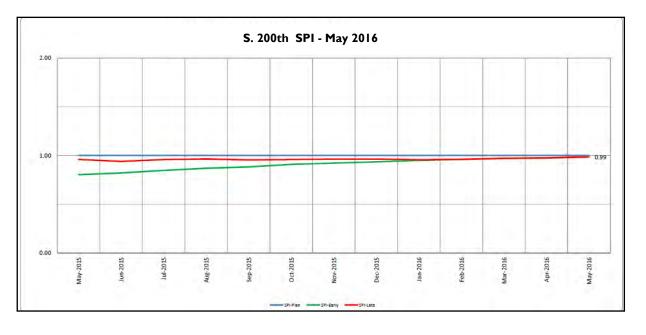
As of this period, the remaining float is now two days per the Rail Activation schedule. This reduction in float is attributable to activities in the S440 contract associated with certain civil deliverables and with OCS and Communication equipment installation as well as commissioning and system-wide 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.





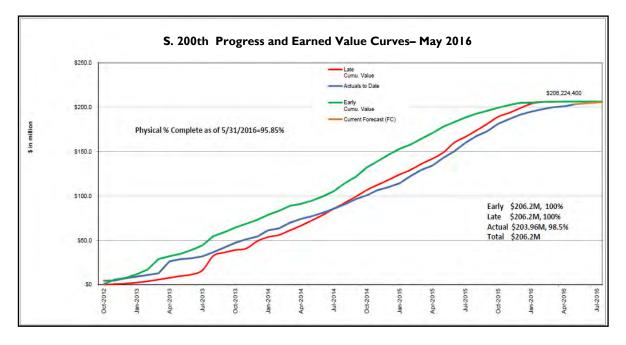
# **Schedule Performance Index**

The Schedule Performance Index (SPI) for S.200th has risen slightly this period to 0.99 as work focuses on the train systems this period. Systems Integration has commenced and OCS energization is expected next period. (Refer to individual contract sections.) Progress will continue to be monitored closely.



# **Cost Progress Analysis**

Overall S. 200th physical % complete is at 95.9%. 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	I	I	0	0	0	I	0	0
S447	27	16	0	0	0	16	0	0
Total	92	76	0	0	0	73	8	8

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	May 2016	Year to Date	Project to Date
Recordable Injury/Illness Cases	2	3	16
Days Away From Work Cases	1	1	3
Total Days Away From Work	6	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	136	-	-
Total # of Hours (GC & Subs)	25,004	158,985	1,019,749
<b>OSHA</b> Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	16.00	3.77	3.14
DART Rate	8.00	2.52	2.35
Recordable National Average	3.60	3.60	3.60
DART National Average	2.00	2.00	2.00
Recordable WA State Average	7.20	7.20	7.20
DART WA State Average	3.30	3.30	3.30

# **Quality Assurance Activities**

### Activities

• None to report.

#### <u>Issues</u>

• None to report.

### Summary

Description	Mar 2016	Notes
No. of Audits Planned	0	None
No. of Audits Com- pleted	0	None
Reports in Progress	0	None
No. of Audits Postponed	0	None

# **Community Outreach**

- Conducted a tour for Congressman Adam Smith and staff.
- Emailed construction alert regarding South 200th Street closure to project list-serve, property owners within one mile radius, Port of Seattle, City of SeaTac and local businesses.
- Updated local businesses on upcoming construction activities.
- Coordinated with the Federal Detention Center on upcoming work on South 200th Street.

# **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).



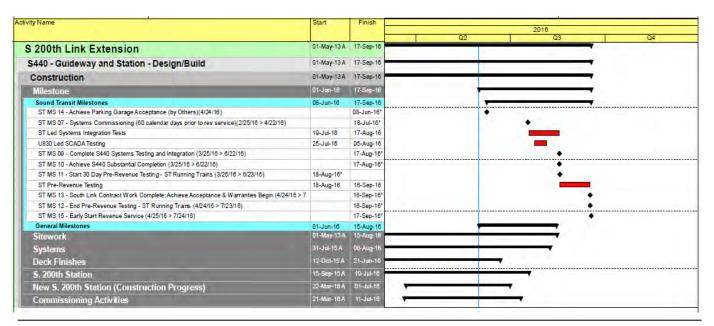
# S440 Contract—Design -Build (Guideway and Station)

## **Current Progress**

Level 1 and 2 commissioning activities are well underway. OCS is expected to be energized in June 2016 which will commence the start of 300 and 400 level System Integration Testing. Overall the progress of this contract represents 99% physical completion as compared to 98% time to date.

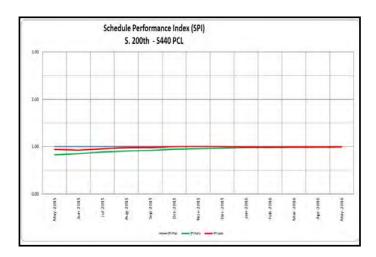
## Schedule/Critical Path

The schedule update for this period is currently under review and milestones may be adjusted for due to the availability of EIC's. Milestone #7 (Systems Commissioning) which is reporting -87days 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 56 days of negative float. Milestone #10 (Substantial Completion) is reporting 56 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.





## **Key Activities**

#### Current Period

- Angle Lake Station/Plaza activities: Escalator and elevator work continues, continue communication closet electrical work. Continued communication wire installations; system installation of phones, card readers, cameras, and door systems. Performed tile touch-up at south platform. Electrical room and electrical panel energized with daily lock-out tag-out procedures are in place, and continued hanging station signs and punchlist items. Ran first LRV test train at Angle Lake Station .
- Guideway activities: Continued various punchlist activities, Continue track access work. including permanent handrail, acoustic barrier panels, and bird netting. OCS tie-in work at Airport Station began and will continue through the weekend of June 24th. Continued PT future tendons and PT elastomeric coating, pigmented sealer on guideway spans. Continue STU high performance coating touchup repairs. Installed equipment in signal houses. Pocket track rail replacement repairs.
- Continued landscape soil restoration and planting work on 28th Ave and Port of Seattle properties; Pavement markings applied for 182nd NAE Line. Irrigation system on Port is running and being operated as needed. Began installation of pedestrian and traffic signal poles at 188th.

### Next Period

- Continue guideway work.
- Continue Station finish work.
- Continue various site work.
- Continue other miscellaneous work: punchlist work, landscaping and restoration.
- Continue to resolve U830 interface issues.
- Commissioning activities continue.

### **Closely Monitored Issues**

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

## **Cost Summary**

Present Financial Status	Amount
S440 Contractor—PCL Civil Contractors, Inc.	
Original Contract Value	\$169,000,000
Change Order Value	\$4,673,966
Current Contract Value	\$173,673,966
Total Actual Cost (Amount Billed)	\$171,278,687
Financial Percent Complete:	99%
Physical Percent Complete:	99%
Authorized Contingency	\$13,520,000
Contingency Drawdown	\$4,673,966
Contingency Index*	2.8



LRV testing 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 88% physical completion and against 97% duration complete. Milestone Revisions have been included in the update this period but do not represent the completion dates in the update.

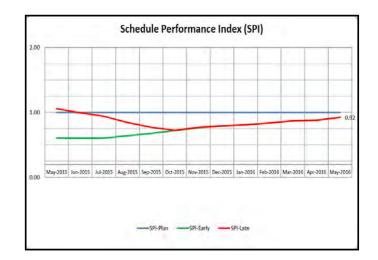
## Schedule/Critical Path

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.

tivity Name	Start	Finish		0010	
		-	02	2016 Q3	Q4
S 200th Link Extension	04-Aug-14 A	14-Oct-16			-
S445 - Parking Garage - Design/Build	04-Aug-14.A	14-Oct-16			-
DESIGN	04-Aug-14 A	29-Sep-16			,
DESIGN MILESTONES	04-Aug-14 A	29-Sep-16			
CONSTRUCTION DESIGN SUPPORT	04-Aug-14 A	02-Aug-16			
AS-BUILT DRAWINGS	20-Sep-16	29-Sep-16			
CONSTRUCTION	16-Jan-15 A	14-Oct-16			-
CONSTRUCTION MILESTONES	02-Aug-16	07-Oct-16		-	-
MS1 COMPLETE ALL SYSTEM AND UTILITY COMMISSIONING		02-Aug-16*		•	
SOUND TRANSIT CONTROLLED FLOAT	20-Sep-16	24-Sep-16			
MS2 C OF O AND SUBSTANTIAL COMPLETION		24-Sep-16*		٠	
PUNCH LIST	26-Sep-16	07-Oct-16			
STRUCTURES	01-Jun-16	01-Jun-16	<b>T</b>		
ARCHITECTURAL FINISHES	26-Oct-15A	19-Sep-16			
DEMOBE	10-Oct-16	14-Oct-16	and the second second		-
ELECTRICAL	23-Feb-16A	02-Aug-16			
MECHANICAL	01-Jun-16	20-Jun-16			
FIRE SUPPRESSION SYSTEM	31-Mar-16 A	08-Jun-16			
TOWER CRANE	16-Jan-15 A	13-Jun-16	-		
CIVIL FINISHES	30-Mar-16 A	08-Jul-16	-	-	

## Schedule Performance Index

The SPI has risen slightly this period to 0.92 based on early forecasts. Elevator procurement delays are hampering any recovery efforts.





## 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.
- Continued fire sprinkler installation.
- Continued façade support installation (Level 3, 4, 6, 8).
- Continued installation of Photovoltaic support structure.
- Continued placement of sidewalk sections along S. 200th.
- Continued waterproofing plaza deck.
- Continued site wall work along S. 200th.
- Continued exterior wall finish of elevator core.
- Continued PSE screen and chain link fence installation.

#### Next Period

- Continue coordination meetings.
- Continue with fire sprinkler installations.
- Continue PSE screen and chain link fence installation.
- Continue steel stub framing and interior wall finish of elevator core.
- Complete façade support installation.
- Complete installation of Photovoltaic support structure.
- Complete waterproofing plaza deck.
- Begin installation of plaza pavers.
- Begin installation of retail storefront glazing.

### **Closely Monitored Issues**

- The May 2016 schedule update was rejected on the basis that it is out of compliance with the approved milestone dates. 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. Contractor continues working with the elevator manufacturer to identify efficiencies and potential mitigation measures to reduce the current timeframe.

## **Cost Summary**

Present Financial Status	Amount
S445 Contractor—Harbor Pacific/Graham	
Original Contract Value	\$29,978,000
Change Order Value	\$1,990,588
Current Contract Value	\$31,968,588
Total Actual Cost (Amount Billed)	\$28,637,983
Financial Percent Complete:	89%
Physical Percent Complete:	89%
Authorized Contingency	\$2,398,240
Contingency Drawdown	\$1,990,588
Contingency Index*	1.0



Structural framing of plaza canopy ongoing.



# S447 Contract – Station Area Roadway Improvements and Surface Parking

### **Current Progress**

S447 Contractor continues to mitigate for continued constructability issues. Overall this contract is 90% physical completion and 83% duration complete as milestone revisions continue. Milestone revisions have been adjusted last period per change order but delays continued this period.

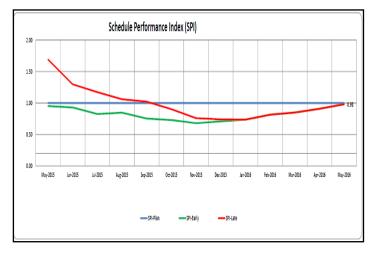
## Schedule/Critical Path

The May schedule has not been submitted. Substantial completion is now forecast for August, 31 2016 as design revisions to work on S. 200th continue. A change order has been issued to address the extent of delays. The Contractor will continue to focus efforts on adjacent Contractor interfaces.

tivity Name	Start	Finish					
			-	02	2010	03	Q4
S 200th Link Extension	19-Mar-15 A	02-Sep-16					
S447 - Station Area Roadway Improvements	19-Mar-15 A	02-Sep-16		_	-		
Construction	19-Mar-15 A	02-Sep-16	-			-	
S447 Construction	19-Mar-15 A	02-Sep-16	-				
Substantial Completion	31-Aug-16						
Project Milestones	21-Jul-16A	02-Sep-16			٧		
Contract Duration	21-Jul-16A	02-Sep-16					
Project Closeout	21-Jul-16 A	02-Sep-16					
Sound Transit Controlled Float	21-Jul-16 A	04-Aug-16 A					
Mutually Controlled Float	30-Aug-16	30-Aug-16				1	
Punch List	31-Aug-16	01-Sep-16				1	
Final Acceptance	02-Sep-16						
Contract Time	19-Mar-15A	30-Aug-16				-	
All Work of this Contract, Excluding 2-5	19-Mar-15 A	30-Aug-16					
Contract Time	19-Mar-15 A	30-Aug-16				-	
S447 South 200th St. Link Extension - Construction	19-Mar-15 A	03-Aug-16					
S447 South 200th St. Link Extension - Construction	19-Mar-15 A	03-Aug-16			_		
Project Management	19-Mar-15 A	31-Dec-15A					
Mobilization	19-Mar-15 A	30-Apr-15 A					
S447 Submittals	20-Mar-15 A	14-Jun-16		141101141001 121	•	CARLES CARLES	
S. 204th	01-May-15 A	15-Jun-15 A					
28th Ave South	01-May-15 A	01-Jun-16 A					
Angle Lake Parking	25-Jun-15 A	06-May-16 A	1	-			
200th St (South Side) East of 26th	23-Jun-15 A	11-Apr-16 A	-				
200th St (North Side) East of 26th	22-Jul-15A	08-Jun-16					
Project Electrical (East of 26th)	14-Aug-15 A	03-Aug-16		_			
All Work West of 26th	13-Aug-15 A	30-Aug-16					

## **Schedule Performance Index**

The SPI for S447 has risen slightly to 0.98 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.





## **Key Activities**

### Current Period

- Continue weekly construction progress meetings.
- Continue coordination meetings with S440 and S445 Contractors.
- Completed striping and pavement markings at S200th, 28th Ave S and Angle Lake parking lot.
- Continue constructing Wall 11 S200th south side.
- Continue raising Wall 3 to finish height on S200th east of culvert.
- Install guardrails on Wall 6, 7. 7.1 at 28th Ave.
- Final lift of asphalt placed on S200th, 28th Ave and Angle Lake parking lot.
- Grading walkway west of 26th Ave.
- Installing traffic signal poles on S200th, 28th and 26th.
- Adjust utilities to finish grade on S200th and 28th Ave.

#### Next Period

- Continue roadwork, sidewalk, and wall work.
- Continue parking lot work.
- Continue installing transportation system work on roadway.
- Begin culvert work.
- Continue utility adjustments.

## **Cost Summary**

Present Financial Status	Amount
S447 Contractor – Johansen Excavating, Inc	
Original Contract Value	\$8,426,400
Change Order Value	\$1,007,049
Current Contract Value	\$9,433,449
Total Actual Cost (Amount Billed)	\$9,433,449
Financial Percent Complete:	98.9%
Physical Percent Complete:	90%
Authorized Contingency	\$2,642,640
Contingency Drawdown	\$1,007,049
Contingency Index*	2.4



Continued street grading at S200th.

### **Closely Monitored Issues**

• Agreement reached with Contractor regarding the culvert design to settle for a lump sum price that includes culvert work and related schedule delays and plus all other change issues. City review of culvert redesign, wall 2 and footings is near completion with final calculations.



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## Link Light Rail Federal Way Link Extension

# 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	\$4.1	\$4.1	\$5.3	\$9.4	\$0.0
Preliminary Engineering	\$33.3	\$30.7	\$23.0	\$2.7	\$33.3	\$0.0
Third Parties	\$2.4	\$0.4	\$0.2	\$2.1	\$2.4	\$0.0
Right of Way	\$3.6	\$1.0	\$0.5	\$2.7	\$3.6	\$0.0
Total	\$48.8	\$36.1	\$27.9	\$12.7	\$48.8	\$0.0



SoundTransit



## **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.

ctivity Name	Start	Finish	2015	2016	2017
FWLE - Preliminary Engineering Phase 3	24-Jul-15 A	28-Feb-17			
FWLE - Phase 3	24-Jul-15 A	28-Feb-17			
Notice to Proceed	24-Jul-15 A				
1.0 Project Management	24-Jul-15 A	28-Feb-17			<b>•••</b>
2.0 Public and Stakeholder Involvement	24-Jul-15 A	30-Dec-16			•
3.0 Preliminary Engineering	24-Jul-15 A	31-Jan-17			-
4.0 Environmental Analysis and Documentation	24-Jul-15 A	28-Feb-17	Ì I I <b>∿—————</b>		
5.0 Graphics	24-Jul-15 A	24-Jan-17	<b></b>	╋╌┊╌Ŵ╌┊╴┻	<b>17</b>
6.0 TOD and Station Area Planning Support	24-Jul-15 A	30-Dec-16			•
7.0 Support Studies (Supplemental)	01-Apr-16	30-Dec-16			•

### **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.
- Provided a project update to Commute Trip Reduction employers in South King County and to the South King County Mobility Coalition.

## Environmental

• None to report.



### Phase 3 Preliminary Engineering (PE)

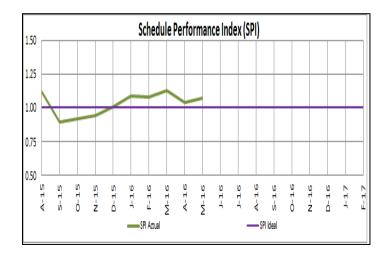
In July 2015, Sound Transit executed an amendment to the professional services agreement with HDR Engineering, Inc. for Phase 3 professional services, including completion of a Final Environmental Impact Statement (FEIS) using the preferred alternative and the other alternatives in the Draft EIS, preliminary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

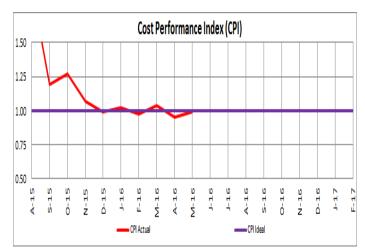
The cumulative Schedule Performance Index (SPI) is 1.07 through May 2016, indicating the overall amount of work accomplished is more than planned. Review of the consultants draft Phase 3 schedule indicates that completion of the FEIS document is currently on the critical path.





### Phase 3 Cost Performance

\$22.0M of the total contract amount, approximately 73%, has been spent through May 2016. Phase 3 expenditures through May totaled \$10.4M, approximately 57% of the Phase 3 contract total. The Phase 3 percent complete reported at the end of May is 57%, with an earned value of \$10.3M. 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.

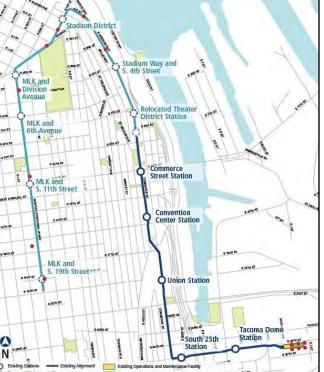


Phase 3 Performance	Previous Period	Current Period	Cumulative To Date		
Amount Invoiced	\$9,403,870	\$994,554	\$10,398,424		
% Spent	51%	6%	57%		
Earned Value	\$8,938,572	\$1,403,342	\$10,341,914		
% Complete	49%	8%	57%		
SPI	1.04	1.27	1.07		
СРІ	0.95	1.41	0.99		



### Scope

Limits:	City of Tacoma	T
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 neigh- borhood. 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, Sta- dium 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 Mainte- nance Facility; The at-grade alignment will include additional signals, OCS, trac- tion power, and communications infra- structure.	5 011 2 <sup>1</sup>
Budget:	\$33.02 Million Phase Gate 4 budget; ex- cludes Construction (Year of Expenditure Dollars)	O Existin Propos Propos
Phase:	Final Design	Мар о
Const. Starts:	2018	



Resocated Station • Geodecrivical Boring Statis
Map of Tacoma Link Extension.

Key Project Activities

### <u>Final Design</u>

• 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

• Began 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	Commit- ment 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	\$5.5	\$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	\$0.0	\$0.0	\$2.0	\$0.0
ROW	\$3.2	\$0.2	\$0.0	\$3.2	\$0.0
Total	\$33.0	\$8.I	\$7.8	\$33.0	(\$0.0)

Cost Summary by SCC

SCC Element	Adopted Budget	Commit- ment 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
Construction Subtotal (10 - 50)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
60 Row, Land	\$3.2	\$0.2	\$0.0	\$3.2	\$0.0
70 Vehicles (non-revenue)	\$2.0	\$0.0	\$0.0	\$2.0	\$0.0
80 Professional Services	\$27.8	\$7.9	\$7.8	\$27.8	\$0.0
90 Unallocated Contingency	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total (10 - 90)	\$33.0	\$8.1	\$7.8	\$33.0	(\$0.0)



### **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.

ctivity ID Activity Name	OD Start	Finish		2015			2016			2017	1		2018			2019		1	202				2021	-		202
			Q1	Q2 Q3	Q4	01 02	2 Q3	Q4 (	21 0	2 03	Q4	Q1 (	22 03	04	Q1	02 0	3 04	4 01	02	03	04 0	1 0	2 03	Q4	01 (	02
Tacoma Link Expansion - Master Schedule	1854 02-Feb-15 A	20-Apr-22					-			1 1												-				1
Project Administration	1854 02-Feb-15 A	20-Apr-22	-	-	1	- 11				1								-								
Milestones	1854 02-Feb-15 A	20-Apr-22	-			- 17								12											-	r
Project Funding	140 22-Mar-17	06-0ct-17							-																	
Project Planning & Reporting	631 02-Feb-15 A	27-Jul-17	-	1						-																
Contract Packaging	62 01-Oct-15 A	31-Dec-15 A		1	-																					
Procurement	1146 16-Mar-16 A	02-Sep-20				-		-1	×.			-	-			-		1		-						
Owner Furnished Material	373 18-Aug-17	06-Feb-19								-		-		-	-											
Light Rail Vehicles	1146 16-Mar-16 A	02-Sep-20				*	-			-			-	-		-		-		-						
Engineering	756 02-Feb-15 A	25Jan-18	-	-							-	Y														
Preliminary Design	336 02-Feb-15 A	27-May-16	-	-		11	,										1					11	11			11
Final Design	525 04-Jan-16 A	25Jan-18			1																					
Permitting	119 16-Feb-17	03-Aug-17							-	-																
Engineering Support	275 29-Apr-15 A	27-May-16		-																						
ROW & Third Parties	852 01-Oct-15 A	08-Feb-19			-							- 1		1	-											
Property Acquisition	800 04-Dec-15 A	08-Feb-19			-	- 11	-			-	-	1	-	-	-		10									1
Third Party Agreements	587 01-Oct-15 A	25Jan-18			-		-		-	-		•	-									4.				
Construction	1035 17-Oct-17	18-0ct-21								1.2	-												1			
Construction Contracts Procurement	422 17-0ct-17	12Jun-19									-		-			-										
OMF Construction	489 29-Mar-18	19-Feb-20										-		1			1	-			ч.					
Advance Utility Relocation	506 01 Jun-18	15-May-20	1.0					Cold C			11	1	7	1					7			1			1	11
Mainline Construction	613 13Jun-19	18-Oct-21															-							7		
Testing/Startup/Commissioning	333 11 Jan-21	20-Apr-22																			-	1	1			r

## **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**

- Received the Communicator of Distinction Award from the Academy of Interactive and Visual Arts for Online Videos.
- Provided update to Hilltop Business District with 20 attendees and to Stadium, Business District with 25 attendees.

### 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

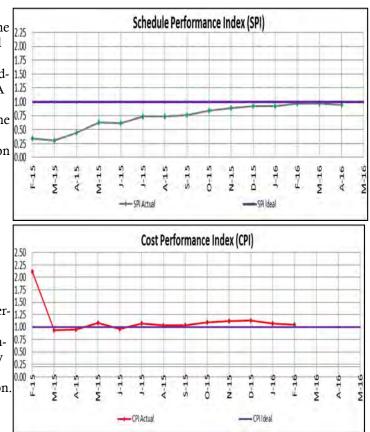
- Updated design criteria and various preliminary engineering technical memos.
- Station Refinement public outreach efforts.

### Phase 3 Schedule Performance

The cumulative Schedule Performance Index (SPI) for the Phase 3 contract is 0.96 through April, 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 April. Phase 3 contract expenditures through April totaled \$2.4 M, approximately 96% of the Phase 3 contract total. The Phase 3 contract percent complete reported at the end of March is 90%, with an earned value of \$2.4 M. The cumulative Cost Performance Index (CPI) through April is .96; indicating costs are higher than the budget planned for work accomplished. The monthly CPI for April was significantly low at 0.31, 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 In- voiced	\$2,320,952	\$51,157	\$2,372,379
% Spent	95%	1%	96%
Earned Value	\$2,282.554	\$16,066	\$2,298,620
% Complete	95%	< %	93%
SPI	0.98	0.31	0.96
СРІ	1.04	0.31	0.98



### 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**

- The City of Bellevue initiated a code amendment process to provide an administrative permitting process for land use approvals. Process finalized and became effective March 29, 2016.
- Consultant continued work on procurement documents. Next full draft review begins end of June.
- Amendment of environmental work scope description and geotech ODC underway.
- Draft DBPM RFQ document being developed. RFQ now scheduled to be issued late June 2016.
- Negotiated task orders with consultants to produce a market and TOD feasibility study as required by the MOU with Bellevue. Work completed in May 2016.
- Final Draft RFP under review by ST, Bellevue and King County
- 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.
- ST project staff met with the Bellevue stakeholders group on February 10 and March 28th, 2016, April 29th, and June 7th, 2016 and provided a project updates and engaged them in the TOD study.

## **Program Cost**

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

Phase	Adopted Budget	Commit- ment to Date	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Budget Versus EFC
Administration	\$3.2	\$1.6	\$1.5	\$1.7	\$3.2	\$0.0
Preliminary Engineering	\$10.2	\$8.8	\$7.2	\$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	\$24.6	\$23.2	\$93.3	\$117.9	\$0.0
Total	\$133.6	\$35.0	\$31.9	\$98.6	\$133.6	\$0.0



### **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.

Activity Name	Start	Finish	2015	2016	2017	2018	2019	2020	2021
OMSF - Project Master Schedule	05-Jan-12 A	08-Jul-21							
Project Management and Milestones	01-Jun-15 A	08-Jul-21							
PRELIMINARY ENGINEERING	08-Oct-15 A	08-Oct-15 A	▼						
Procurement	17-Dec-15 A	28-Apr-17	•						
Design-Build Contract Procurement	17-Dec-15 A	28-Apr-17	<b>T</b>		•				
Design-Build Project Management Consultant	01-Jan-16 A	26-Aug-16	•						
Commissioning Authority Consultant Procurement	28-Jul-16	28-Feb-17							
ROW/Property Acquisition	05-Jan-12 A	26-Dec-17				,			
Third Party Agreements and Permitting	01-Jan-16 A	14-Nov-17							
Potential Transit Oriented Development Timeline	30-Jun-17	30-Oct-20							
Design-Build Project Management	01-Sep-16	27-Apr-17							
D/B Contract	19-May-17	11-Oct-20			7				
Final Design	19-May-17	06-Aug-19			•				
Construction	27-Dec-17	11-Oct-20							
Interfacing Project Systems/Testing/Startup Windows	28-Jul-16	17-Dec-20							

## **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

• Environmental publication of the FEIS on October 2, 2015.

## **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.

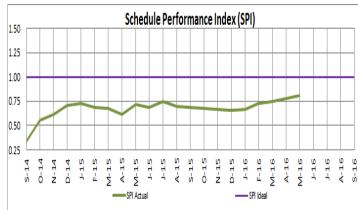
### Phase 2 Key Activities

- 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.

### Phase 2 Schedule Performance

The cumulative Schedule Performance Index (SPI) trends at 0.81 through May 2016, which means that cumulative work accomplished is less than work planned.

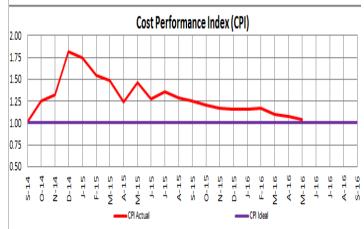
Change Order 008 incorporated Phase 2A of the project on February 2016. The remaining Phase 2 scope has been re-negotiated to reflect the recent Design Build Project Delivery decision. The consultant has been directed to focus efforts on delivering Design Build bridging documents to help inform the procurement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





## Phase 2 Cost Performance

\$4.1M of the total Phase 2 contract amount, approximately 77%, was spent through May 2016. The Phase 2 percent complete is 80%, with an earned value of \$4.3M. The cumulative Cost Performance Index (CPI) is 1.04, meaning that expenditures are less than the earned value.



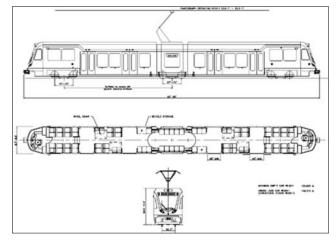
Phase 2 Performance	Previous Period	Current Period	Cumulative To Date
Amount Invoiced	\$3,808,569	\$300,080	\$4,108,649
% Spent	71%	6%	77%
Earned Value	\$4,113,146	\$169,404	\$4,282,55 I
% Complete	77%	3%	80%
SPI	0.78	6.08	0.81
СРІ	1.08	0.56	1.04

## 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.

Project Phase	Baseline Budget	Current Adopted Budget	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget Vs. EFC
Administration	\$4.7	\$4.7	\$0.0	\$0.I	\$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
Total	\$733.0	\$733.0	\$4.8	\$1.6	\$733.0	\$0.0

#### Cost Summary by Phase

Cost Summary by SCC

SCC Element	Baseline Budget	Current Adopted Budget	Commit- ment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget Vs. EFC
Construction Subtotal (SCC 10-50)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
60 ROW, Land, Existing Improvements	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
70 Vehicles	\$696.7	\$696.7	\$4.8	\$1.5	\$696.7	\$0.0
80 Professional Services	\$4.5	\$4.5	\$0.0	\$0.1	\$4.5	\$0.0
90 Contingency	\$31.7	\$31.7	\$0.0	\$0.0	\$31.7	\$0.0
Capital Total (SCC 10-90)	\$733.0	\$733.0	\$4.8	\$1.6	\$733.0	\$0.0



### **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		Baseline			Current		\$120.0	Со	ntingency by	Type Histogi	ram
Status	A	nount	%of Total	A	mount	%of Work Remaining	\$100.0				
Design Allowance	s		0.0%	\$	24	0.0%	\$60.0 —	\$31.7	\$31.7	\$31.7	\$31.7
Allocated Contingency	s	46.3	6.4%	s	46.3	6.3%	\$40.0	\$46.3	\$46.3	\$45.3	\$46.3
Unallocated Contingency	s	31.7	4.3%	s	31.7	4.3%	\$20.0 \$-	5		,	5
Total	\$	78.0	10.7%	\$	78.0	10.7%	Desi	Feb-16 gn Allowance	Mar-16 Allocated Conting	Apr-16 ency Unallocat	May-16 ted Contingency

### **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
- Bid Selection Issues
  - Availabilities of Spare Parts

• Commissioning Requirements

### **Project Schedule**

The ST2 LRV Expansion project schedule is shown below.

sivêy Name	550	Pinish	215	2016	2017	218	2019	220	2021	2022	203
ST2 LRV Procurement Schedule	24-Feb-15A	15-Nov-23	1000	9999	0 0 0 0			9999	9999	0000	0000
Light Rail Vehicle Procurement	24-Feb-15A	15-Nov-23									—
LRV Vendor Procurement	24-Feb-15A	10-0ct-15		-							
RFP Preparation Baseline Process	24-Feb-15A 25-Aug-15A	22-Sep-15.A 24-Sep-15.A	5								
Advartisement through Award	06-Nor-15A	10-Oct-16		-			1				1
LRV Engineering and Manufacture	10-0d-16	31-Mar-19					1				
LRV Delivery Schedule	01-Apr-19	15-Nov-23					-				-



## Project Staffing – Link Light Rail Program – APRIL 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. Project Control Specialist	Lynnwood/Fed. Way Extension	Feb. 2016
Corridor Design Manager	Tacoma Link Expansion	March 2016*
Real Property Agent	East/Lynnwood Extension	2015 Attrition*
Project Coordinator	Art & Architecture	2015 Attrition

\*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*
Deputy Director	Systems Engin. and Integration	2016 Attrition
Sr. Systems Engineer	LRV Procurement and Testing	2016 Attrition
Assistant Property Manager	Property Management	January 2016
Principal Construction Manager	Lynnwood Link Extension	January 2016
Deputy Project Director	Lynnwood Link	January 2016
Project Control Specialist	East Link Extension	2016 Attrition*
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 - February 2016, continued

There were 596.5 (106% 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 April. 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 24% and 35% of plan respectively; internal staffing for the Lynnwood Link Extension was 65% of plan.

During plan development it was assumed that final design for Lynnwood would begin in 4th QTR 2015 and in 1st QTR 2016 for the Tacoma Link Expansion; final design for both projects is now scheduled to begin in 2nd QTR and 3rd QTR 2016 respectively. Staffing variance to plan for the month by project follows.

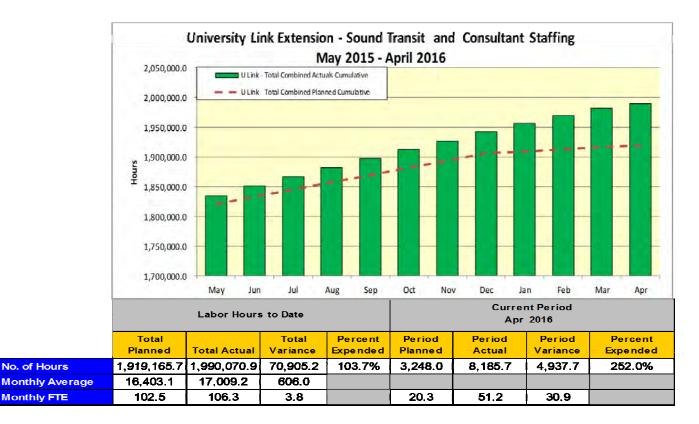
		April 2016 - Staffing Plan Variance Summary											
		Consult	ant Staff			Sound Tra	ansit Staff			Total	Total (YTD)		
	F	TE .	Vari	iance	F	ſE	Vari	ance	FI	E	Variance		
Project	Planned	Actual	FTE	% of Plan	Planned	Actual	FTE	% of Plan	Planned	Actual	FTE	% of Plan	
University Link Extension	0.0	22.1	22		20.3	29.0	9	143%	20.3	75.3	55.0	371%	
Northgate Link Extension	73.9	88.5	15	120%	47.7	36.7	-11	77%	121.6	132.2	10.5	109%	
South 200th Extension	9.4	27.9	18	297%	17.4	21.2	4	122%	26.8	45.9	19.1	171%	
East Link Eextension	132.4	258.7	126	195%	79.7	66.4	-13	83%	212.1	276.2	64.1	130%	
Lynnwood Link Extension	115.0	11.2	-104	10%	40.3	26.4	-14	65%	155.3	31.7	-123.6	20%	
Tacoma Link Expansion	11.0	3.1	-8	28%	13.0	5.3	-8	41%	24.0	11.5	-12.5	48%	
Total	341.7	411.5	70	120%	218.5	185.0	-33.5	85%	560.1	572.8	12.7	102%	

Staffing variance to plan for the month by project follows.



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

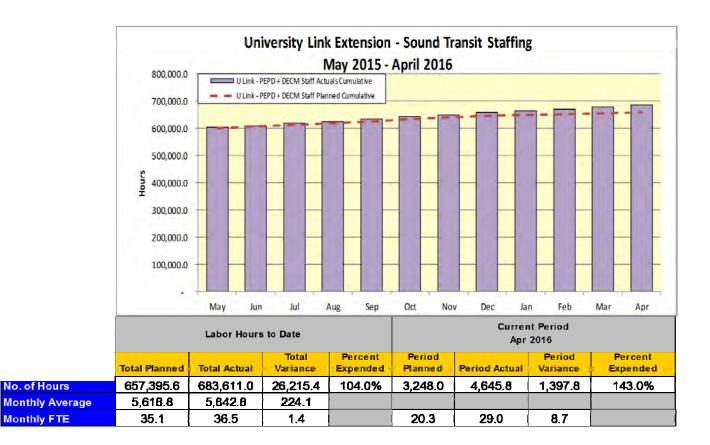
There were 51.2 FTE assigned to the University Link Extension in April including 22.1 consultant and 29 internal FTE. As was expected with the opening of the University Link Extension, staffing for the month decreased 38% (31.7 FTE) from March. Consultant staffing was well ahead of plan as the 2016 Staffing Plan assumed that all construction and system testing would be completed in late 2015 and did not account for consultants assigned to the University Link Extension. Staffing for the University Link Extension was 252% of plan. Year-to-date staffing (75.3 FTE/mo.) is trending 271% (55 FTE/mo.) above plan. Cumulatively, since August 2006, average monthly project staffing is within 4% (3.8 FTE/mo.) of plan.





#### Internal Resource Commitments to University Link Extension

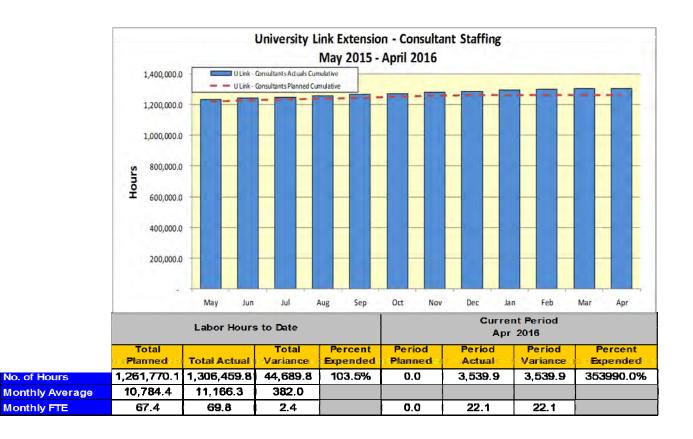
There were 29 internal FTE assigned to the University Link Extension in April. Internal staffing was 43% (8.7 FTE) above plan and 45% (23.6 FTE) below March staffing. Cumulatively, since August 2006, average monthly internal staffing is within 4% (1.4 FTE/mo.) of plan.





#### Consultant Resource Commitments to University Link Extension

During April, 22.1 consultant FTE were assigned to the University Link Extension. The 2016 Staffing Plan did not account for consultant support in 2016 and beyond; April consultant staffing was 27% (8.1 FTE) below March staffing. Cumulatively, since August 2006, average monthly consultant staffing is trending within 4% (2.4 FTE/mo.) of plan.

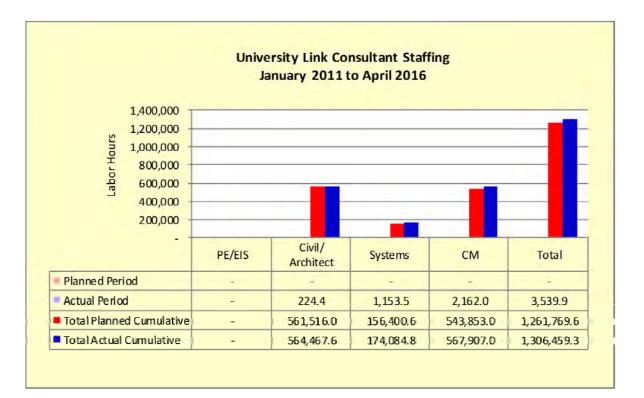




Consultant Resource Commitments to University Link Extension, continued

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

In April, civil engineering consultant staffing (1.4 FTE) for the University Link Extension accounted for 6% of consultant staffing with the remainder providing systems (33% 7.2 FTE) and construction management (61% 13.5 FTE) support. Cumulative staffing since August 2006 for civil and systems consultants are trending 0.53% (0.2 FTE/mo.), and 11.3% (0.9 FTE/mo.) above plan respectively. Cumulative construction management consultant staffing is trending 4.4% (1.3 FTE/mo.) above plan.



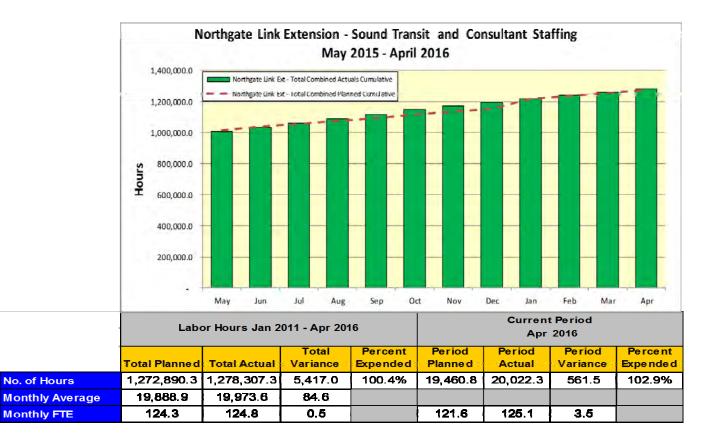
## Link Light Rail Staffing Report



### Northgate Link Extension Staffing

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

During April, 36.7 internal and 88.5 consultant FTE were assigned to the Northgate Link Extension. This is a 6% (7.3 FTE) decrease from March but is 3% (3.5 FTE) above plan; year to date staffing of 132.2 FTE/mo. is trending 9% (10.5 FTE/mo.) above plan. Cumulatively since January 2011 average monthly staffing is trending with plan.

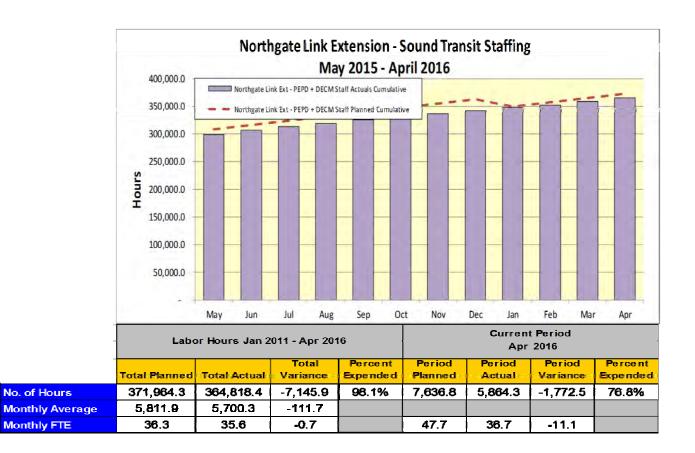




### Northgate Link Extension Staffing

#### Internal Resource Commitments to Northgate Link Extension

Internal staffing in April (36.7 FTE) decreased 10% (4.2 FTE) from March and was 23% (11.1 FTE) below plan. Cumulatively, since January 2011, average monthly internal staffing (35.6 FTE/mo. is trending within 2% of plan.



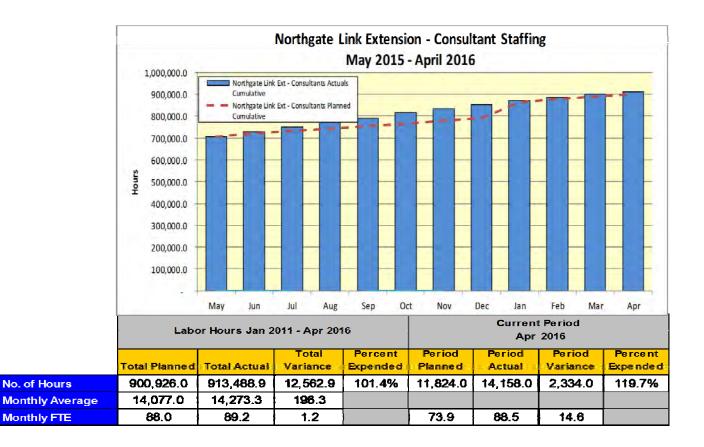
## Link Light Rail Staffing Report



### Northgate Link Extension Staffing

#### Consultant Resource Commitments to Northgate Link Extension

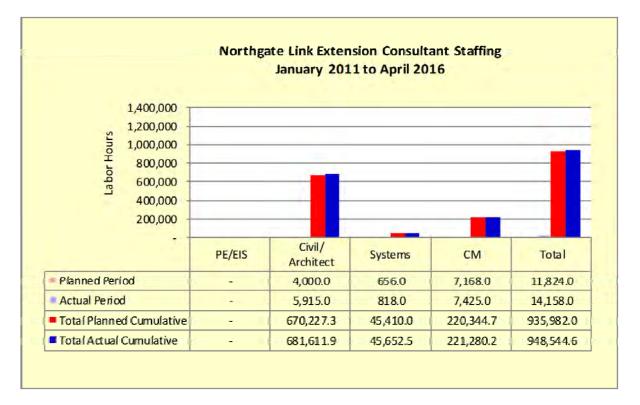
In April, 88.5 consultant FTE were assigned to the Northgate Link Extension; consultant staffing was above plan by 20% (14.6 FTE) and was 3% (3.2 FTE) below March staffing. Cumulatively, since January 2011, average monthly consultant utilization (89.2 FTE/mo.) is trending within 2% of plan.





#### Northgate Link Extension Staffing

Consultant Resource Commitments to Northgate Link Extension



Consultant utilization by discipline follows:

- Civil/architecture consultant utilization in April (37 FTE) decreased 8.3% (3.3 FTE) from March and was 48% (12 FTE) above plan. Cumulatively since January 2011, average civil engineering/architecture consultant staffing of 66.6 FTE/mo. is trending with plan.
- Systems consultant utilization (5.1 FTE) was 59.8% (1.9 FTE) above March staffing and was 25% (1 FTE) above plan. Since January 2011, average monthly Systems consultant staffing (1 FTE/mo.) is trending within 2% of plan.
- CM consultant staffing in April (46.4 FTE) was 3.6% (1.7 FTE) below March staffing and was 4% (1.6 FTE) above plan. Cumulatively, since January 2011, average monthly CM consultant staffing (21.6 FTE/mo.) is trending with plan.

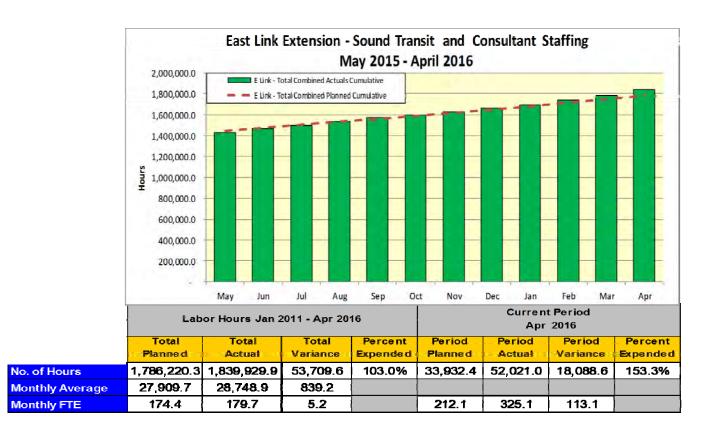
## Link Light Rail Staffing Report



### East Link Extension Staffing

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

Staffing for the East Link Extension in April (325.1 FTE) increased 12% (34.7 FTE) from March and was 53% (113 FTE) above plan. Year-to-date staffing of 276.2 FTE/mo. is 30% (64.1 FTE/mo.) above plan; cumulatively since January 2011, average monthly staffing of 179.7 FTE/mo. is 3% (5.2 FTE/mo.) above plan.

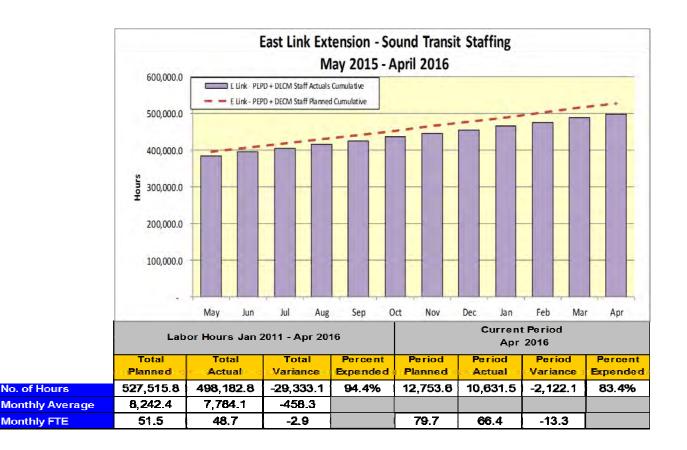




### East Link Extension Staffing

#### Internal Resource Commitments to East Link Extension

During April internal staffing for the East Link Extension (66.4 FTE) was 15% (11.4 FTE) below March staffing and was 17% (13.3 FTE) below plan. Cumulatively, since January 2011, average monthly internal staffing is trending 5.6% (2.9 FTE/mo.) below plan.



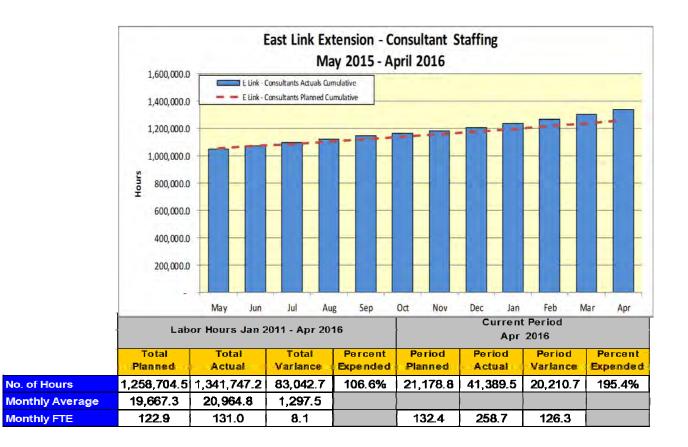
## Link Light Rail Staffing Report



### East Link Extension Staffing

#### Consultant Resource Commitments to East Link Extension

There were 258.7 consultant FTE assigned to the East Link Extension during April. Consultant staffing increased 22% (46.1 FTE) from March and was 95% (126.3 FTE) above plan. Cumulatively since January 2011, average monthly consultant staffing is trending 6.6% (8.1 FTE/mo.) above plan.

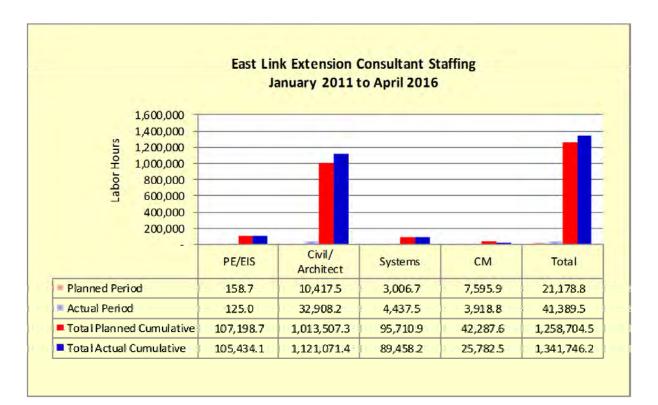




### East Link Staffing

### Consultant Resource Commitments to East Link, continued

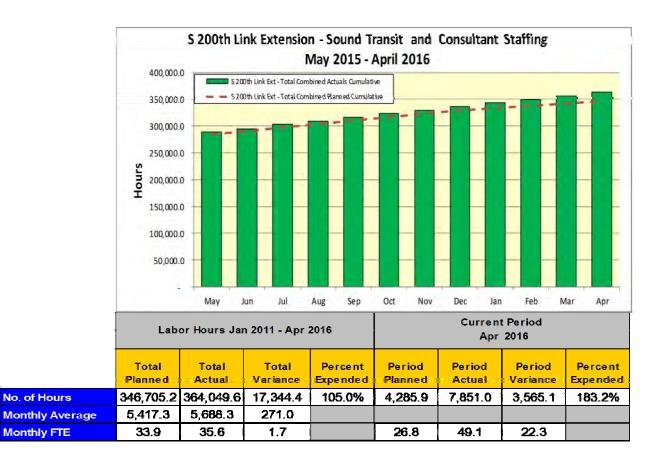
In April, civil engineering consultant staffing (205.7 FTE) was 80% of consultant staffing. Civil engineering consultant staffing was 21% (35 FTE) above March staffing and 116% (140.6 FTE) above plan. Systems consultant staffing (27.7 FTE) was 10.8% of consultant staffing and was 52% (9.5 FTE) above March staffing. Systems consulting was 48% (8.9 FTE) above plan. There was 0.8 consultant FTE performing Preliminary Engineering (PE) and 24.5 FTE (48% below plan) providing construction management.





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

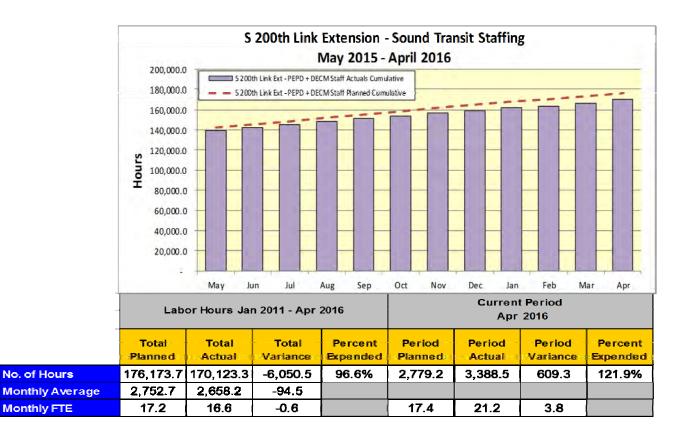
Staffing for the South 200th Link Extension in April (49.1 FTE) was 83% (22.3 FTE) above plan and 15% (6.4 FTE) above March staffing. Year-to-date staffing is 45.9 FTE/mo. and is 71% (19.1 FTE/mo.) above plan. Since January 2011, average monthly internal and consultant staffing (35.6 FTE/mo.) is 5% above plan.





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

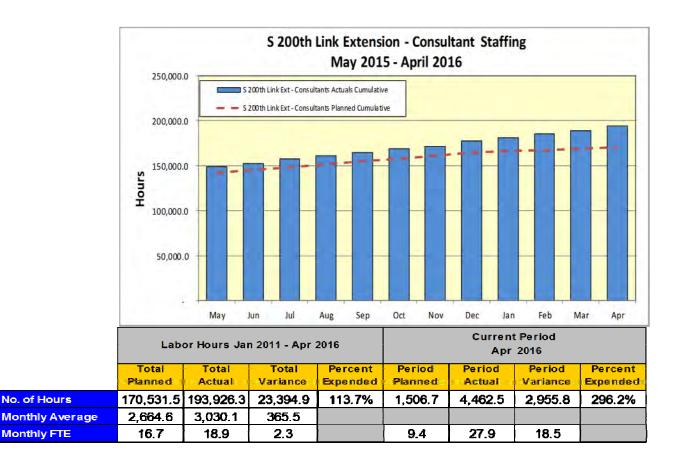
Internal staffing in April (21.2 FTE) increased 20% (3.5 FTE) from March staffing and was 22% (3.8 FTE) above plan. Cumulatively, since January 2011, average monthly internal staffing is trending 3.4% (0.6 FTE/mo.) below plan.





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

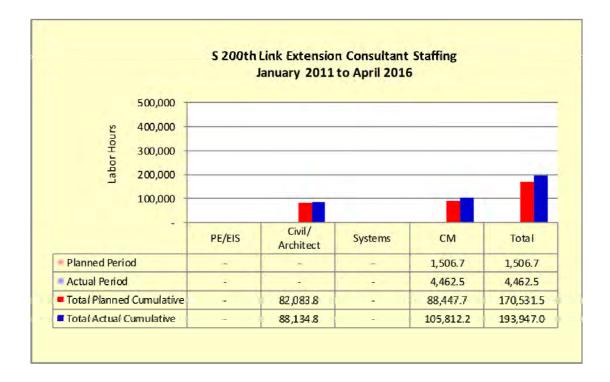
Consultant staffing on the S. 200th Link Extension in April (27.9 FTE) increased 11% (2.9 FTE) from March and was 196% (18.5 FTE) above plan. Cumulatively since January 2011, average consultant staffing is trending 13.7% (2.3 FTE/mo.) above plan.





Consultant Resource Commitments to S. 200th Link Extension

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





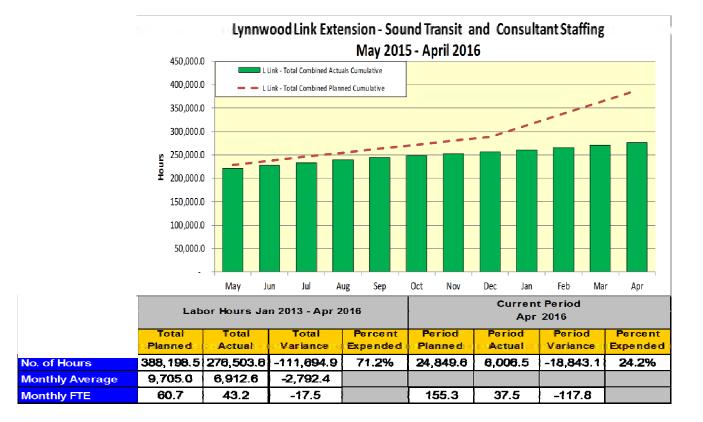
### Lynnwood Link Extension Staffing

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

During April Lynnwood Link Extension staffing was 37.5 FTE (24% of plan) including 11.2 consultant FTE (10% of plan) and 26.4 internal FTE (65% of plan). Year-to-date staffing (31.7 FTE/mo) for the Lynnwood Link Extension is 20% of plan.

Internal staffing for April was 2% (0.5 FTE) below March staffing while consultant staffing was 60% (4.2 FTE) above March staffing. There were 8.2 PE and 3 civil engineering consultants respectively assigned to the project; cumulative-ly since January 2013, average consultant staffing for the Lynnwood Link Extension (43.2 FTE/mo.) is 28.8% (17.5 FTE/mo.) below plan.

The plan assumed that the final design consultant team would be in place by January; design will begin in 2nd QTR 2016.





#### **Tacoma Link Extension**

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

During April there were 8.4 FTE (35% of plan) assigned to the Tacoma Link Expansion including 3.1 consultant FTE (28% of plan) and 5.3 internal FTE (41% of plan). Year-to-date staffing is 11.5 FTE/mo. (48% of plan). The plan assumed that the final design consultant team would be in place by January; design will begin in 3rd QTR 2016. All consultant staff assigned to the project were supporting preliminary engineering.

-		Labor Hou	rs Jan 2016		Current Period Apr 2016			
	Total		Total	Percent	Period	Period	Period	Percent
	Planned I	Total Actual	Variance	Expended	Planned	Actual	Variance	Expended
No. of Hours	15,379.2	7,391.9	-7,987.3	48.1%	3,844.8	1,348.5	-2,496.3	35.1%
Monthly Average	3,844.8	1,848.0	-1,996.8					
Monthly FTE	24.0	11.5	-12.5		24.0	8.4	-15.6	

# Link Light Rail Acronyms



ACRONYMS	
AA	Alternative Analysis
APE	Area of Potential Impact
BCE	Baseline Cost Estimate
BCWS	Budgeted Cost of Work
BIM	Building Information Modeling
BNSF	Burlington Northern Santa Fe Railway
ССВ	Change Control Board
CDF	Controlled Density Fill
CHS	Capitol Hill Station
СМ	Construction Management
CMU	Concrete Masonry Unit
СО	Change Order
CPI	Cost Performance Index
СРМ	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
РМОС	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