

# Progress Report

## Link Light Rail Program

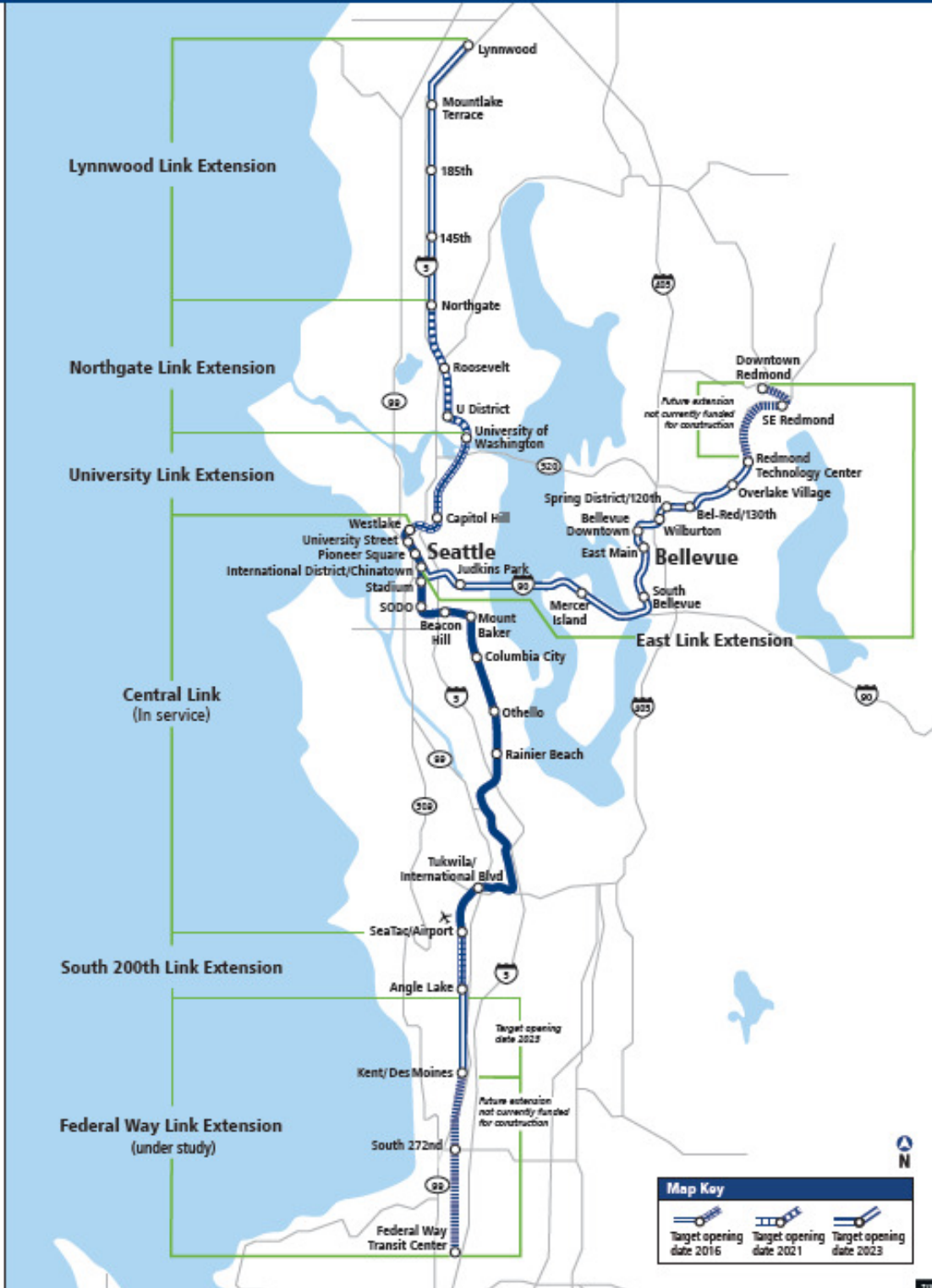


OCS pole installation—South 200th Link Extension

September | 2015



## LINK LIGHT RAIL CURRENT SERVICE AND APPROVED EXTENSIONS



## Projects

**University Link Extension:** The University Link Extension work program with \$1.76 billion capital budget was approved by the Board in July 2008. The 3.15-mile light rail segment 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 Lake Washington Ship Canal to an underground station on the University of Washington campus, near Husky Stadium. Revenue Service is projected in the 1st QTR 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.

**Lynnwood Link Extension:** This project entails the planning, design and construction of an extension of Northgate Link from Northgate to Lynnwood in Snohomish County with additional service in the cities of Shoreline and Mountlake Terrace.

**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.

**South 200th Link Extension:** S. 200th Link Extension consists of a 1.6-mile extension of the light rail from the SeaTac/Airport Station to an elevated station at South 200th Street. The Project is being developed through a design-build (DB) delivery strategy and the anticipated service launch is September 2016.

**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 Expansion:** In partnership with the City of Tacoma and Pierce Transit, Sound Transit is studying the potential of expanding Tacoma Link in the context of the City and Pierce Transit service and capital plans.

**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.



# Link Light Rail Program Overview

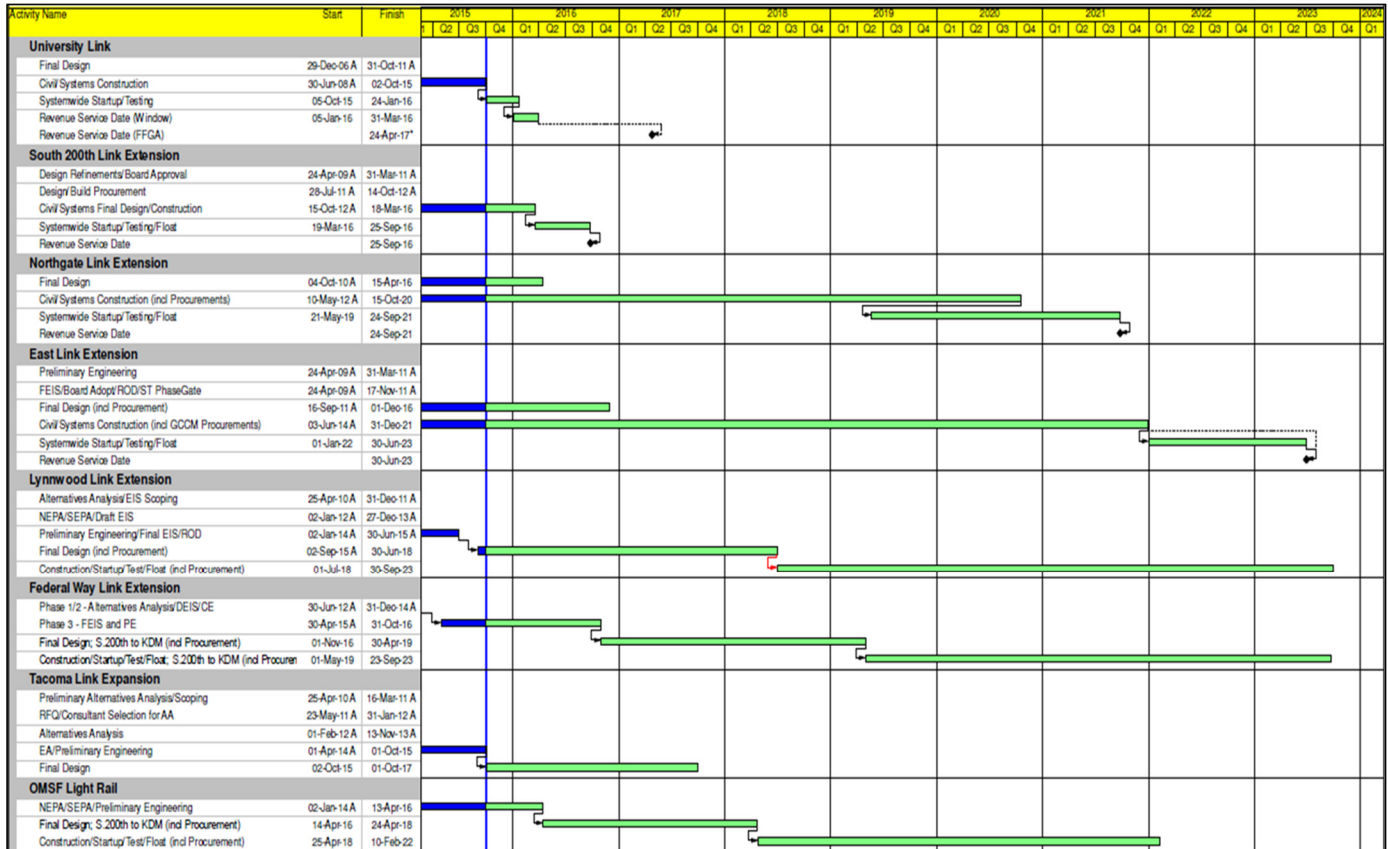
## Program Budget

Project	Adopted Budget	Committed to Date	Incurred to Date	Estimated Final Cost	Adopted Budget vs. EFC
University Link	\$1,756.0	\$1,484.8	\$1,442.3	\$1,605.4	\$150.6
Northgate Link Extension	\$1,894.5	\$809.3	\$575.5	\$1,894.5	0
Lynnwood Link Extension	\$64.1	\$52.7	\$49.0	\$64.1	0
East Link Extension	\$3,677.2	\$432.2	\$368.2	\$3,677.2	0
South 200th Link Extension	\$383.2	\$315.0	\$260.3	\$362.7	\$20.5
Federal Way Extension	\$42.9	\$32.0	\$16.3	\$42.9	0
Tacoma Link Expansion	\$7.8	\$7.1	\$6.7	\$7.8	0
Link O & M Satellite Facility	\$36.8	\$33.0	\$30.3	\$36.8	0
ST2 LRV Expansion	\$733.0	\$4.8	\$0.9	\$733.0	0
<b>Total Link</b>	<b>\$8,595.5</b>	<b>\$3,170.9</b>	<b>\$2,749.4</b>	<b>\$8,424.4</b>	<b>\$171.1</b>

Table in millions.

## Program Schedule

Schedules for active projects are summarized below.



Changes this period: None.



# Link Light Rail University Link Extension

## Scope

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

**Tunnels:** Two twin bored tunnels. Two contract segments: U220 starts at Husky Stadium, continues beneath SR 520 and the Lake Washington Ship Canal and 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:** Project completion in the 1st QTR 2016



## Key Project Issues

- *U830 Systems* - SCADA software development continues to be the highest risk critical path in Systems. The interim milestones: MS5A (Beacon Hill Cutover) and MS5B (DSTT EVS/BMS & U-Link EVS Cutover) were met on 3/29/15 and 6/7/2015. Due to slower than anticipated tunnel radio system development, Sound Transit has started implementing alternative radio system to mitigate schedule impacts during integration testing and pre-revenue testing. ST is also monitoring the detection of 26kV splice failures in the redundant feeds.
- *U240 Capitol Hill Station / U250 UW Station* - Level 3 inter-station testing on the Emergency Ventilation System seems to be challenging. Testing has identified excessive forces in stair pressurization and stair doors. With Final Designer's recommendation, ST is mitigating this issue with additional stair and elevator dampers, power door operators. This issue continues to put pressure on the schedule for Pre-Revenue activities.
- *LRV Fleet Wide Repairs* - Fleet wide defect was discovered in the LRVs' traction motor/gearbox unit. Priority are given to repair the older LRV. Without sufficient reliable LRVs by Revenue Service or Pre-Revenue Service, U-Link will be challenged to operate with six-minute headways. Cost is tracked and isolated from U-Link project. The goal is to complete all repairs by Opening Day or at minimum, sufficient LRV with required spares to operate six-minute headways. As of this writing, 17 repaired car sets has been put into service and is being monitored for performance.
- *Early Opening*: Projection for Revenue Service beginning in the 1st QTR 2016 continues to be on target. All project float has been released. Testing and Start-Up Period is compressed - any impact or delay will be day by day. Coordination with regional stakeholders continues. Link Operation has initiated 6 minutes peak headways in the DSTT. Newly imposed new federal requirement for additional safety oversight responsibilities - "System Safety Readiness Review" for U-Link alignment will add more pressure on an already compressed schedule because ST does not know what is the expectation of this review.

## 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.)

Project Elements by SCC	Baseline Budget	Current Adopted Budget	Commitment to Date*	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 Guideway & Track Elements	\$ 626.83	\$ 450.46	\$ 455.89	\$ 455.07	\$ 463.44	\$ (12.98)
20 Stations	\$ 366.33	\$ 350.75	\$ 339.64	\$ 334.62	\$ 353.49	\$ (2.73)
30 Support Facilities: Yards, Shops	\$ 7.01	\$ 24.83	\$ 21.94	\$ 17.35	\$ 24.83	\$ 0.00
40 Sitework & Special Conditions	\$ 59.03	\$ 67.49	\$ 55.77	\$ 51.38	\$ 60.58	\$ 6.91
50 Systems	\$ 69.63	\$ 116.42	\$ 98.24	\$ 81.34	\$ 104.09	\$ 12.33
<b>Construction Subtotal (SCC 10-50)</b>	<b>\$ 1,128.82</b>	<b>\$ 1,009.95</b>	<b>\$ 971.47</b>	<b>\$ 939.77</b>	<b>\$ 1,006.42</b>	<b>\$ 3.53</b>
60 Row, Land, Existing Improvements	\$ 167.33	\$ 125.77	\$ 125.61	\$ 125.60	\$ 125.77	\$ -
70 Vehicles	\$ 99.76	\$ 100.06	\$ 99.32	\$ 99.31	\$ 100.06	\$ -
80 Professional Services	\$ 306.41	\$ 346.18	\$ 288.37	\$ 277.65	\$ 342.53	\$ 3.66
90 Unallocated Contingency	\$ 53.65	\$ 174.04	\$ -	\$ -	\$ 30.63	\$ 143.41
<b>Capital Cost Total (SCC 10-90)</b>	<b>\$ 1,755.97</b>	<b>\$ 1,756.01</b>	<b>\$ 1,484.78</b>	<b>\$ 1,442.33</b>	<b>\$ 1,605.41</b>	<b>\$ 150.60</b>
100 Finance Cost	\$ 191.71	\$ 191.71	\$ 191.71	\$ 151.77	\$ 191.71	\$ -
<b>Project Total</b>	<b>\$ 1,947.68</b>	<b>\$ 1,947.72</b>	<b>\$ 1,676.48</b>	<b>\$ 1,594.10</b>	<b>\$ 1,797.12</b>	<b>\$ 150.60</b>

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

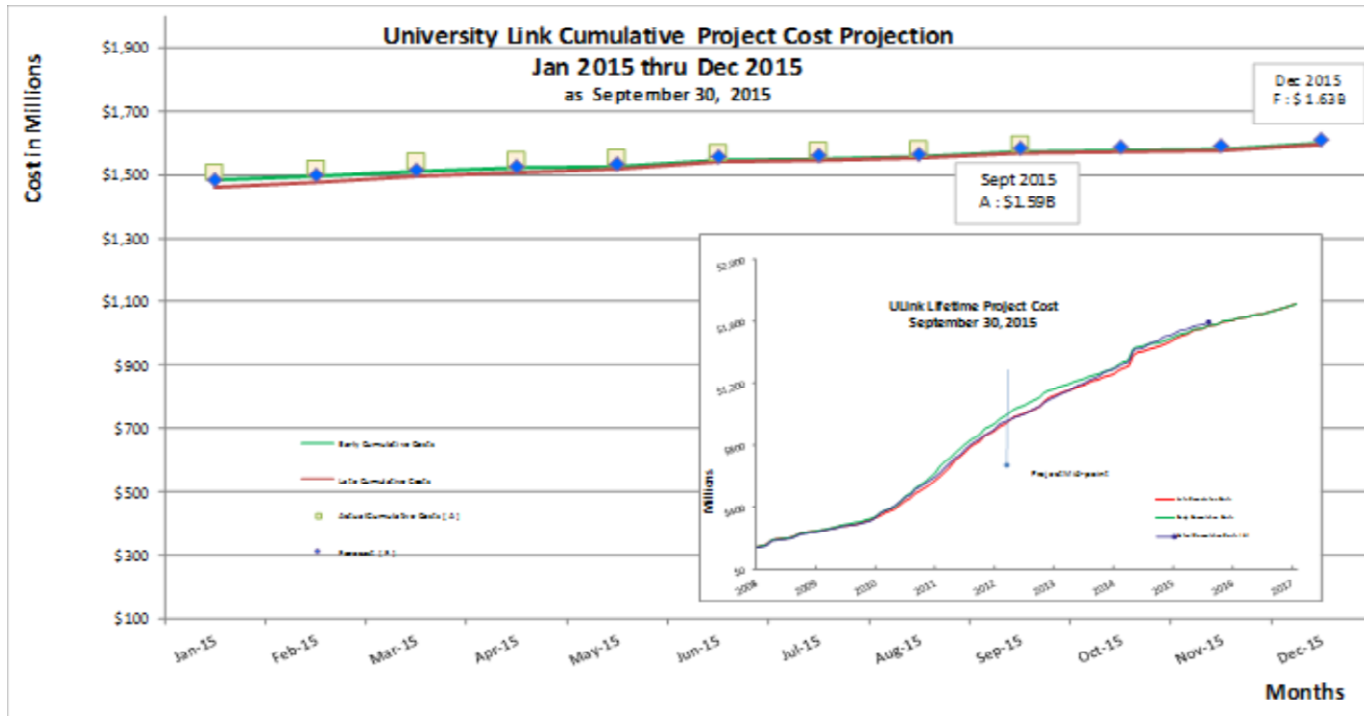
In September, the projected Estimated Final Cost (EFC) including Finance Cost continues to be about \$1.8B. This period, approximately \$8M was incurred, increasing the project Incurred to Date amount to over \$1.4B (Finance Cost excluded). Direct construction cost accounted for about 65% of the cost incurred in September at \$5M with the majority of the cost largely in Station Finishes. The direct construction EFC trends approximately \$1B. This trend continues to be intact as both the high risk tunnel scope and all excavation are now completed. The Capitol Hill Station (U240) Contractor continues station finishes and station mechanical/electrical work and commissioning testing, the Systems (U830) Contractor continues end device installations, system integration and testing. Maintenance of Way continues on erection of the metal structure. The Total Incurred to Date for the Construction Phase approaching \$946M with a current commitments exceeding \$979M. Cost for LRV is approximately \$99.2M and continues to be working on repairs to the traction motor and gear unit. Cost on this scope is 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 phase expenditures in September is at approximately \$6.2M. This period, the bulk of U-Link construction cost is attributed Station finishes and Systems work at \$3.8M. U240 station continues station finishes and commissioning testing, mechanical and electrical work. All systems work are on schedule towards completion in 4th QTR 2015 and the Maintenance of Way Building trending the mid-2016.

WBS Phase Elements	Baseline Budget	Current Adopted Budget	Commitment to Date*	Incurred to Date	Est. Final Cost (EFC)	Adopted Budget vs. EFC
ADMINISTRATION	\$ 115.23	\$ 113.55	\$ 73.85	\$ 71.97	\$ 103.55	\$ 10.00
PRELIMINARY ENGINEERING	\$ 24.39	\$ 24.26	\$ 24.26	\$ 24.26	\$ 24.26	\$ -
FINAL DESIGN	\$ 77.94	\$ 89.31	\$ 86.54	\$ 84.24	\$ 89.31	\$ (0.00)
CONSTRUCTION SERVICES	\$ 68.53	\$ 95.81	\$ 84.20	\$ 80.44	\$ 93.80	\$ 2.01
3rd PARTY AGREEMENTS	\$ 18.65	\$ 18.65	\$ 12.01	\$ 10.90	\$ 17.61	\$ 1.03
CONSTRUCTION	\$ 1,180.00	\$ 1,158.18	\$ 979.12	\$ 945.73	\$ 1,047.67	\$ 110.51
VEHICLES	\$ 103.91	\$ 103.91	\$ 99.20	\$ 99.19	\$ 101.91	\$ 2.00
ROW	\$ 167.33	\$ 152.33	\$ 125.61	\$ 125.60	\$ 127.29	\$ 25.04
<b>Capital Total</b>	<b>\$ 1,755.97</b>	<b>\$ 1,756.01</b>	<b>\$ 1,484.78</b>	<b>\$ 1,442.33</b>	<b>\$ 1,605.41</b>	<b>\$ 150.60</b>
FINANCE COST	\$ 191.71	\$ 191.71	\$ 191.71	\$ 151.77	\$ 191.71	\$ -
<b>Project Total</b>	<b>\$ 1,947.68</b>	<b>\$ 1,947.72</b>	<b>\$ 1,676.48</b>	<b>\$ 1,594.10</b>	<b>\$ 1,797.12</b>	<b>\$ 150.60</b>

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

# Link Light Rail University Link Extension



Incurred to date for Construction under the SCC is almost \$940M. Total capital cost incurred to date including non-construction cost (SCC 60 thru 90) exceeds \$1.44B or about 82% of total project budget scoped (excluding Finance Cost).

Total cost incurred at the end of September 2015 including Finance Cost is nearing \$1.58B. The project financing cost incurred to date about \$151.8M with an annual projection of \$32M to incur in 2015. In the 3rd QTR 2015, \$6.2M of interest cost was recorded under. The next finance cost update will be for the end of 3rd QTR 2015. Overall, University Link cost to date is projected to be approximately \$1.63B by December 2015.

The EFC for project Finance Cost continues to be projected at \$191.7 million. This cost represents booked financing cost and is generated based on allocation of appropriate level of financing cost to each capital project at Sound Transit. Despite an earlier than anticipated release of \$44 million of the FFGA funds due to the American Recovery Reinvestment Act that was used to pay down finance charges, it is premature to project any savings at this time.

## Overall Construction Progress Summary

9/30/2015

### Early Works

U210 Early Utility Work 100%

U211 Demo & Remediation 100%

U215 I-5 Undercrossing 100%

### Tunnels

U220 UWS to CHS 100%

U230 CHS to PSST 100%

### Stations

U240 Capitol Hill Station 98.6%

U250 University of WA Station 100.0%

### Systems

U820 Yard Expansion 100%

U830 Systemwide & Trackworks 97.8%

Other Systems Contracts 70.0%

**Overall Major Construction** **98.7%**

Note: The overall construction progress above is based on a weighted combination of duration, schedule and cost % complete for individual construction contracts as compared to the overall U-Link construction contracts.

## Cost Contingency Management

Project contingencies continue to remain at a healthy level of a little under \$273M due to the favorable construction bidding climate, ROW acquisition cost trends, diligent project risk management practices and excellent tunneling conditions. August's overall contingency notched down by about \$100K due to change orders and some administrative adjustments due to the budget transition from the previous fiscal year to the current. Contingency level continues to trend well above the Planned Contingency Drawdown; the projected planned balance between the end of 2nd QTR and the end of 3rd QTR 2015 ranges from \$83M and \$78M and the Contingency Buffer is now projected to at the minimum \$100M from this point until project completion. The projected planned Reserved Contingency balance is now planned at \$25M (see contingency curve at the bottom of page). Construction has now surpassed 98% complete. Barring any catastrophic event, there is a high likelihood that this contingency trend will remain intact.

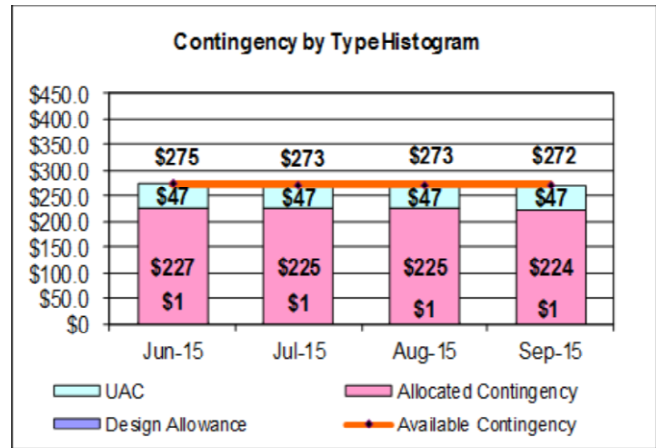
*Design Allowance:* The balance of design allowance has been reduced to less than \$1M and is consistent with the project cycle as all the major design has been completed. The level of design allowance currently represents less than one-half percent of the total remaining scope in the project that has not been procured.

*Allocated Contingency:* Allocated Contingency continues to remain stable approximately at \$225M.

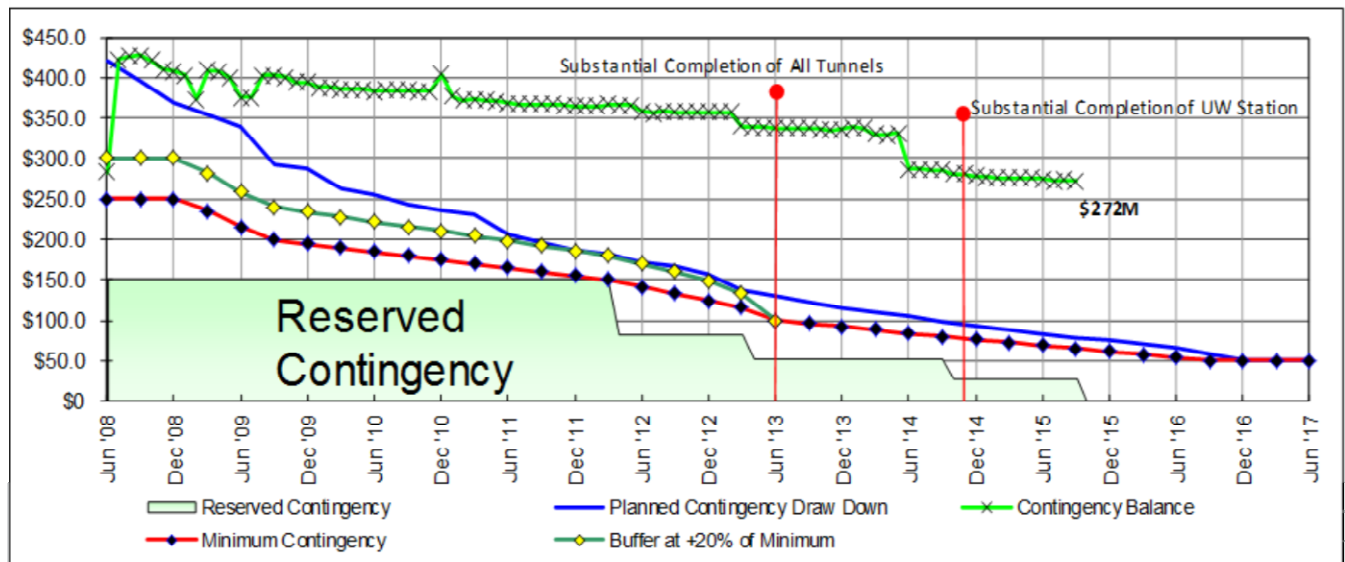
*Unallocated Contingency (UAC):* The total UAC balance is at \$47M and continues to remain stable compared to the Baseline Cost Estimate amount of \$53.7M considering that the construction is now approaching 98% complete.

Contingency Status	BCE		Current Status	
	Amount	% of Total	Remaining Amount	% Remaining Work
Design Allowance	\$103.9	7.8%	\$0.9	2.1%
Allocated Contingency	\$264.3	19.8%	\$223.9	534.3%
Unallocated Contingency	\$53.7	4.0%	\$46.9	111.9%
<b>Total:</b>	<b>\$421.9</b>	<b>31.6%</b>	<b>\$271.7</b>	<b>648.3%</b>

Percentage = Contingency \$ / (EFC or Remain Work \$ ex Contingencies)



### MINIMUM CONTINGENCY CURVES as of September 30, 2015 \$ in millions





## Risk Management

The University Link Risk Management Plan (RMP) established a risk management and oversight process for identifying, assessing, and monitoring risks and develop risk reduction/mitigation plans. On a quarterly basis, the risk register is reviewed and risks are updated to reflect condition at the end of the current quarter. The RMP is also executed in compliance to the Federal Transit Administration's (FTA) guidance laid out as part of FTA's Program Guidelines sub-task 40E.

### Project Risk Overview:

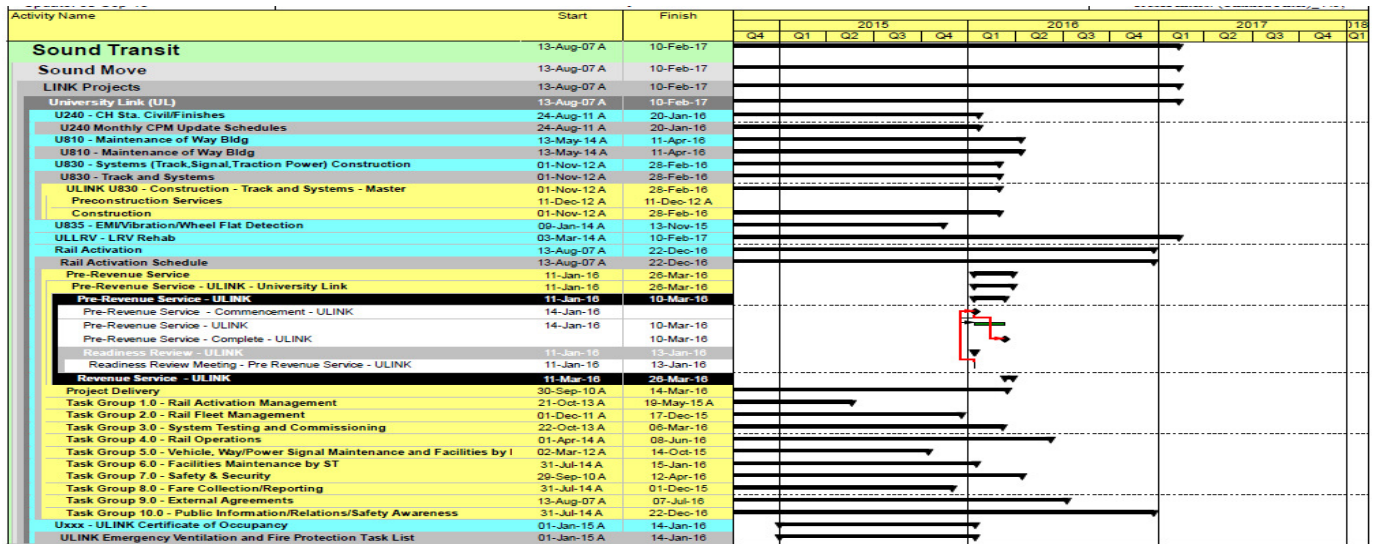
At the end of the 2nd QTR 2015, U-Link project represents about 96% construction completion with U220 and U230 Tunnels at Acceptance; U240 Station is about 88% complete. U250 achieved Substantial Completion, and is now working on punch list and the pedestrian bridge. U830 Systems approaches 80% complete with continued work on the SCADA development and installation as well as ongoing verification for current communication and signaling elements before the full system integration anticipated to place between 2nd and 3rd QTR 2015. Rail Activation Phase is now in full swing. Sound Transit completed updating and identifying risks on the register that were both within the current management time horizon and posed considerable risk to project objectives by having both relatively high probability and impact. The report will be issued shortly to FTA and the PMOC. Prior to this update, the register contained a total of 653 risks, of which 132 were active (521 closed). This quarterly update resulted in a total of 664 risks, of which 122 are active (542 closed). Closed risks were those that no longer presents a potential impact, e.g., risks associated with surface and tunnel excavation at the stations and design risks that have been resolved since the last update. The increase new risks registered for this quarter is due to activities in the Rail Activation phase is fully commenced. University Link team will manage the Rail Activation phase with careful deliberation to avoid any "down stream effect" as these are follow-on work and some of the risk may have already been captured upstream in the current active construction phase.

The top remaining risk subjects that will require at least partial mitigating action in the upcoming quarter are provided below along with their planned risk management strategies:

- **Civil to Systems Contract Interfaces**  
Risk subjects pertaining to the transitioning interface between Station Finishes contractors (U240 and U250) to Systems contractor (U830)
- **Systems Software Development**  
Development of the software systems to operate U-Link and the integration of the current operating system
- **Systems Final Design, Installation, and Testing (U830, U835, System-wide Testing)**  
All phases U-Link systems integration between the cut over of the current operating systems through to the commissioning and occupancy of the U-Link program
- **Rail Activation**  
As the project moves closer towards the transition from construction to rail activation, identification new risks and its potential to impact cost and schedule needs to be more visible.
- **LRV Fleet wide Repair**  
A latest defect was discovered in the Traction Motor/Gear Unit in the LRVs. Repairs require long lead materials and careful coordination to minimize any impacts to current operations. If there are insufficient reliable LRVs by Revenue Start, the six-minute headways promised for U-Link will be at risk.
- **FTA's System Safety Readiness Review**  
Late recommendations and findings of the FTA SSRR team allows insufficient time to respond and/or mitigate findings, delaying Revenue Service date.

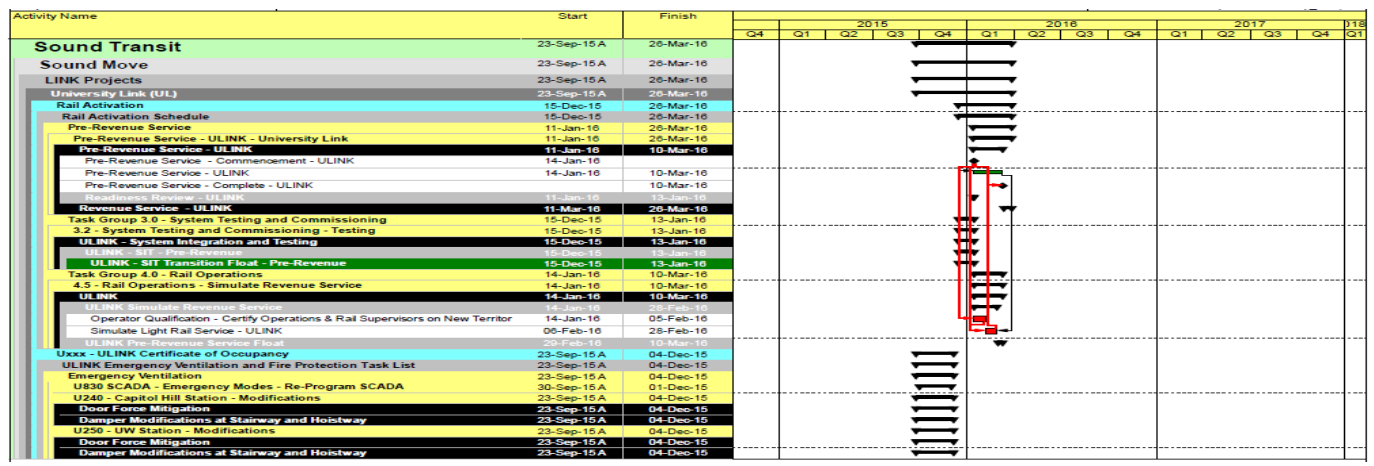
## Project Schedule Summary

The University Link schedule is provided below. The U210, U211 and U215 early work contracts have been completed. The U820 LRV Storage Yard Expansion Contractor has also completed all work. The U220 and U230 TBM mining is complete. At U250 UW Station, Substantial Completion was granted in November 2014 and the Contractor is working through the punch-list, expected completion is July 2015. The U240 Contractor has returned the Pine Street site to U830. The U830 Contractor has completed rail installation; OCS installation is nearing completion and OCS tie in at Pine St. is expected to commence next period. Demising wall has been removed. System Integration Testing will continue into Fall 2015. U835 EMI/Vibration design is underway and Factory Testing is complete. All U860 Fiber Retrofit, upgrades and fiber installation have been completed. The U810 MOW BLDG contract is now well underway; structural steel erection is well underway. The targeted Revenue Service window is the 1st QTR 2016 with the removal of 169 days of float contingency from the Master Schedule. The Rail Activation and the LRV rehabilitation schedules have been linked to the U-Link Master Schedule and the critical path will now be tracked as the Master Schedule is updated monthly.



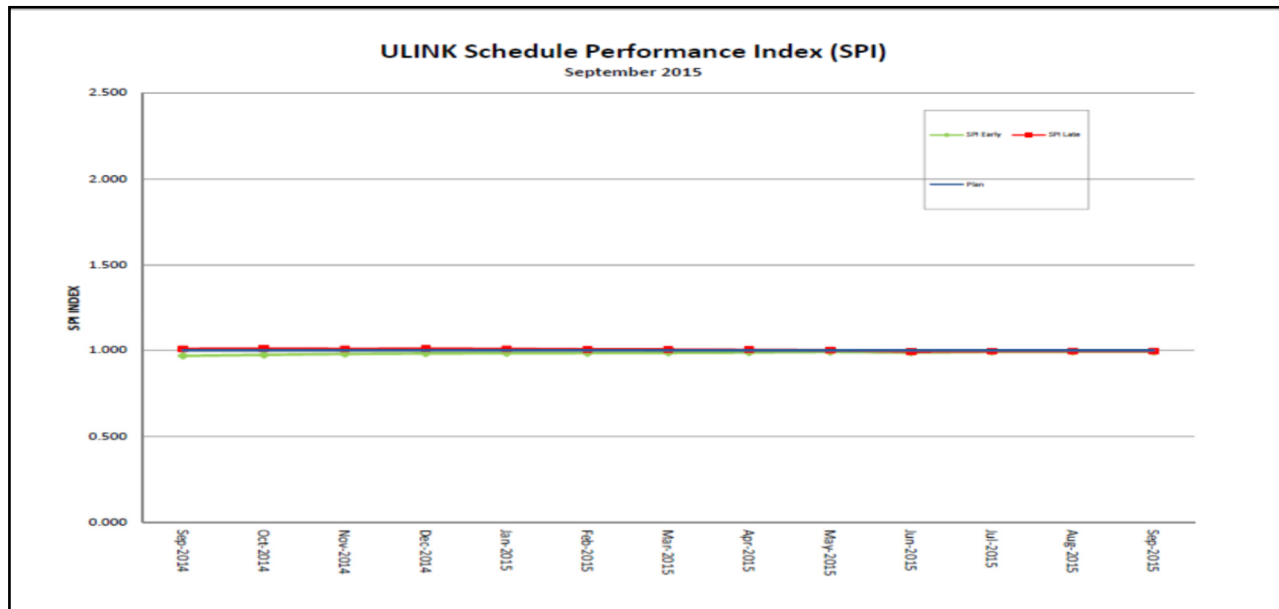
## Progress and Critical Path Analysis

The U-Link Master Schedule update contains the tunnel contractors' schedules and interfaces with the stations and U830 (Track, Signal, Traction power and Communications System) schedules. TBM Mining, U220, U230 and U250 UWS Station have achieved Substantial Completion. U830 Plinth and rail installation is complete and Demising wall has been removed and the Pine St. tie in is complete. The critical path, this period, is tracking through the Door and Damper modifications in the stations and System Integration Testing by U830 and to the commencement of Pre-Revenue Service and Revenue Service for U-Link. U240 and Emergency Ventilation testing is driving the Pre-Revenue Service as the design team considers options for tunnel ventilation. Revenue Service date this period with the delays incurred at CHS and continues to forecast in 1st QTR 2016.



## Schedule Performance Index

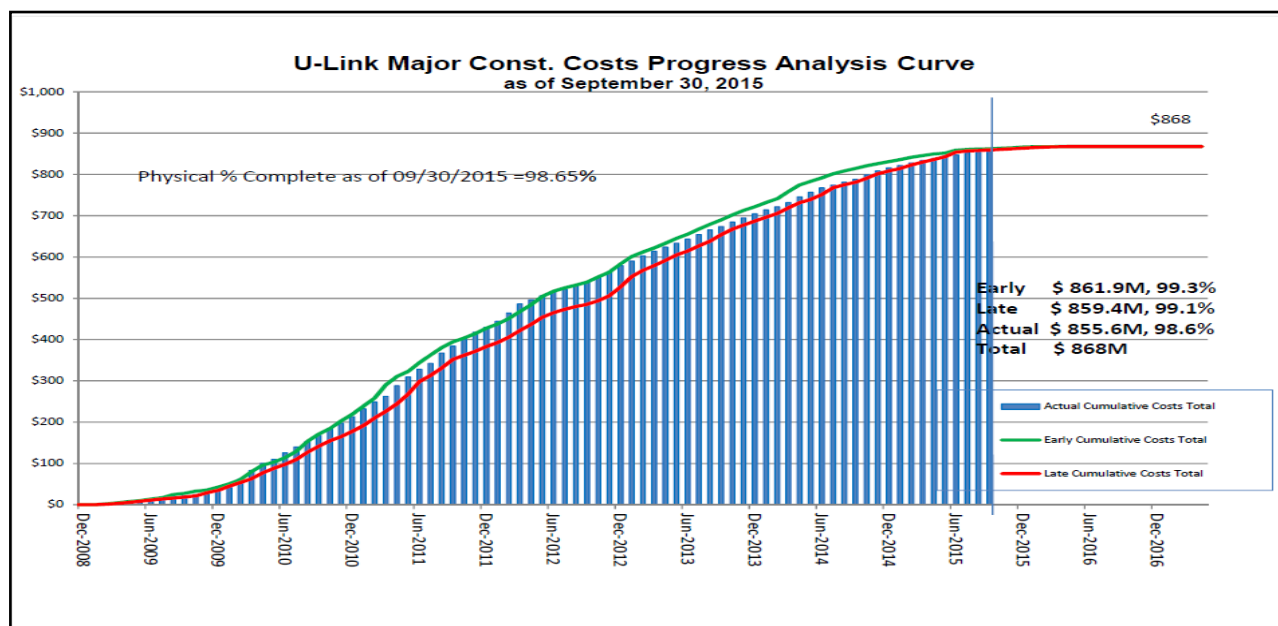
The Schedule Performance Index (SPI) for U-Link remains at 0.99 this period. U830 is preparing for final system integration testing in the Fall 2015 and U240 station finishes and commissioning are nearing completion. (See details on individual contract sections.) Progress will continue to be monitored closely.



## Cost Progress Analysis

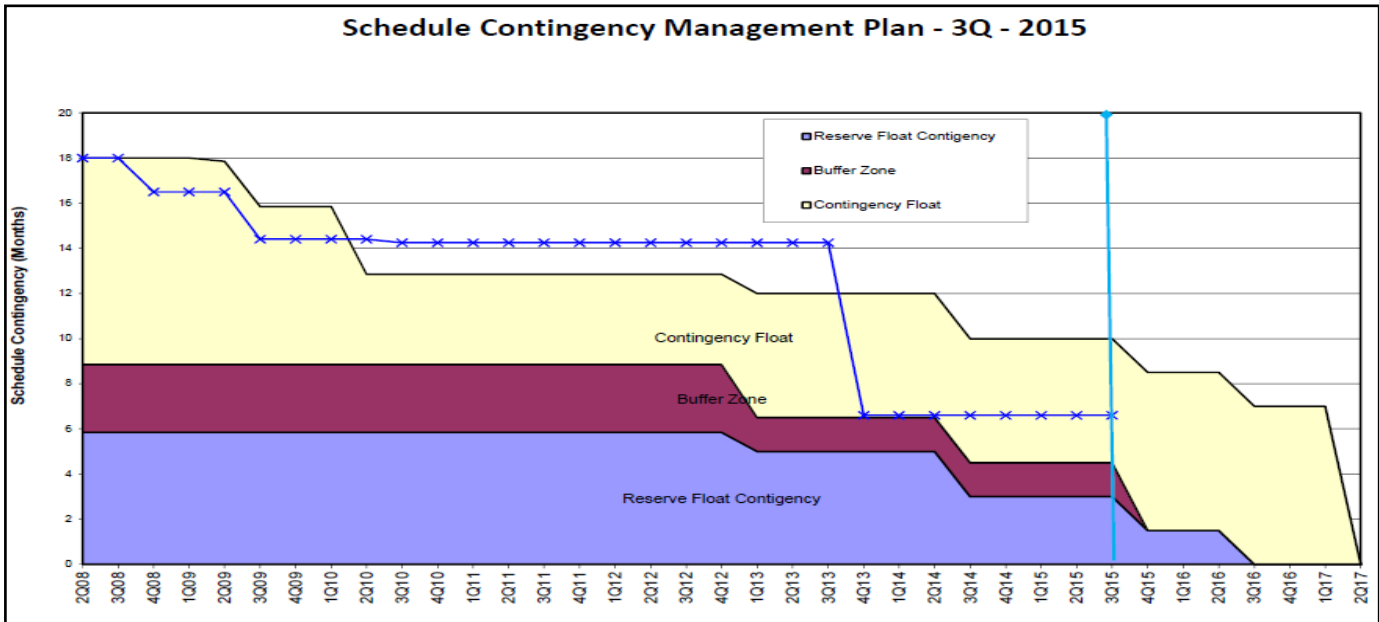
U220 and U230 are complete. U250 is complete with punchlist and Montlake Triangle Project (MTP) pedestrian bridge handrail still outstanding.

Overall U-Link physical % complete is at 98.7% against 96.5% of contract time expended. The graph below shows the progress of major construction contracts cost compared to the early/late projections.



## Schedule Contingency Management

The “Minimum Schedule Contingency Curves” were established in the Project Execution Plan (PEP). The PEP segregated Schedule Contingency into “Forced Lag,” which is a built-in float on the Critical Path; “Buffer Float,” which is the duration between Sound Transit’s targeted Revenue Operation Date and the Schedule Revenue Operation Date; “Contingency Float,” which is the duration between Sound Transit targeted Revenue Operation Date and the FFGA Revenue Operation Date, and “Desired Minimum Float” which is the amount of schedule float the FTA requires Sound Transit to maintain. The current schedule contingency balance was reduced by six months in November 2013. All contingency float was removed based on the completion of the tunneling contracts in the 3rd QTR 2013.



## Right-of-Way

The U-Link project involved the acquisition of a range of property interests, including fee takings for stations and staging areas, tunnel easements for the running tunnels, acquisitions from the University of Washington and airspace leases with the Washington Department of Transportation. These acquisitions required relocation of 141 owners and tenants. The right-of-way program status is summarized below.

Line Section	Total Parcels Certified	Offers Made	Signed Agreements	Admin. Settlements	Possession and Use	Closings to date	Relocations Required	Relocations Completed
Capitol Hill Station	19	19				19	140	140
Tunnel Easements	223	222				222	1	1
<b>TOTAL</b>	242	241				241	141	141

Capitol Hill Station: The acquisitions and relocations for the station site are complete.

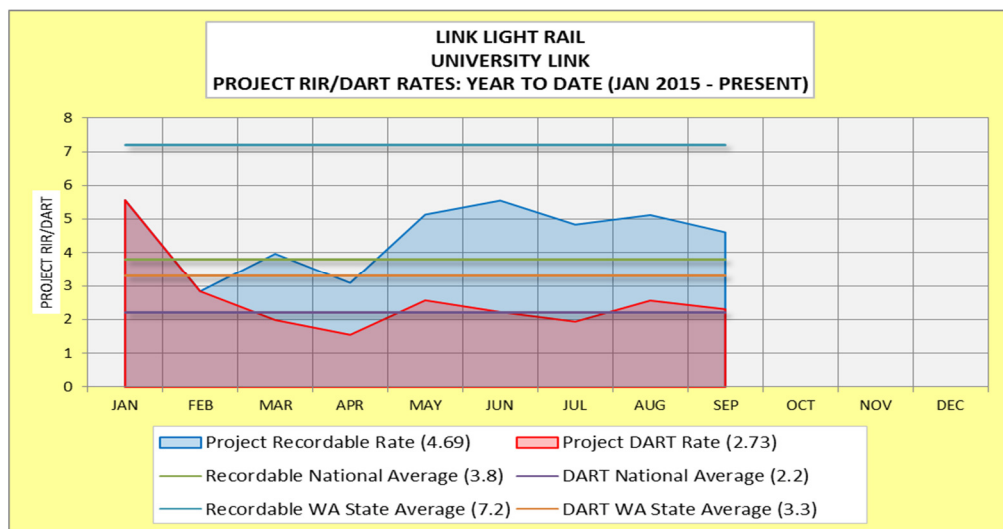
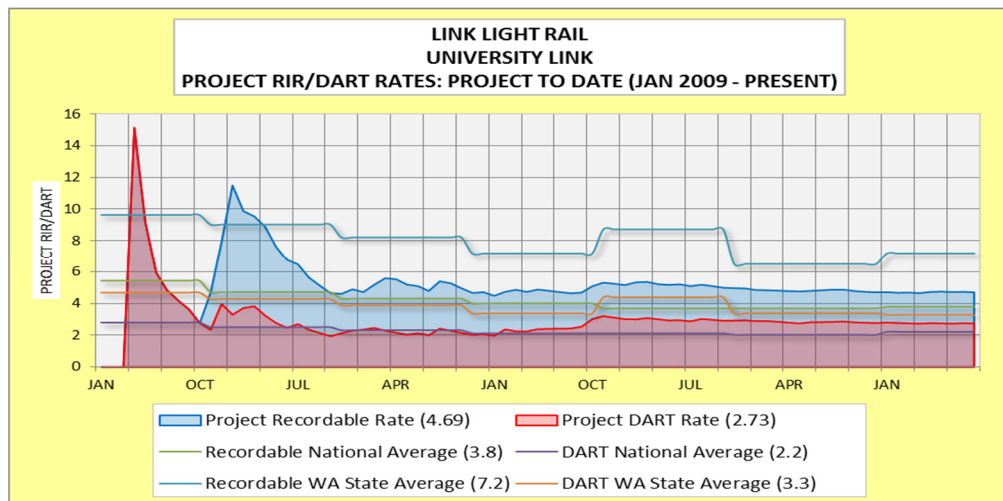


## Construction Safety

Safety statistics for the reporting period and year-to-date are summarized in the table and charts.

Data/Measure	September 2015	Year to Date	Project to Date
Recordable Injury/Illness Cases	0	6	91
Days Away From Work Cases	0	2	19
Total Days Away From Work	0	210	922
Restricted or Modified Work Cases	0	1	34
Total Days Restricted or Modified Work	0	3	1561
First Aid Cases	1	6	152
Reported Near Mishaps	1	13	241
Ave. Nos. of Employees on Worksite	124	-	-
Total # of Hours (GC & Subs)	<b>26,105</b>	<b>260,299</b>	<b>3,879,249</b>
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	0.00	4.61	4.69
DART Rate	0.00	2.31	2.73
Recordable National Average	<b>3.80</b>	<b>3.80</b>	<b>3.80</b>
DART National Average	<b>2.20</b>	<b>2.20</b>	<b>2.20</b>
Recordable WA State Average	<b>7.20</b>	<b>7.20</b>	<b>7.20</b>
DART WA State Average	<b>3.30</b>	<b>3.30</b>	<b>3.30</b>

The charts to the right show University Link's Recordable Injury Rates (*RIR*) and University Link's Days Away, Restricted or Modified (*DART*) Injury Rate as compared to the national average.



## Quality Assurance Activities

### Activities

- *U240*: MRB has dispositioned as Acceptable two “Repair” NCRs: regarding south underside of mezzanine slab honeycombing and a bent plate at the north entry clerestory; MRB dispositioned as Acceptable one “Major” RFD regarding a swing check valve optional backflow device substitution.
- *U835*: approved three “Rework” NCRs: regarding a failed pull test, Radiax Cables not being installed per the manufacturer's recommendations, and 15 welds with alignment issues; rejected one NCR regarding floating slab pre-cast panels made at the Oldcastle plant not meeting the required strength.

### Issues

- *None to report.*

### Summary

Description	Sep 2015	Notes
No. of Audits Planned	0	None
No. of Audits Completed	0	None
Reports in Progress	0	None
No. of Audits Postponed	0	None

## Environmental

- Continued Environmental Oversight of construction.

## Sound Transit Board Actions

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

Motion Number	Description	Date
M2015-92	<i>Increase the and allocate contract contingency as necessary, for certain active U-Link contracts using contingency funds available within the U-Link Baseline budget, for a total authorized cumulative contingency increase not to exceed \$7,000,000, or approx. 1.2% of previously authorized cumulative amount for these contracts, while not exceeding 5% of the current authorized contract amount for any individual contract.</i>	Sep 24

## Community Outreach

- Provided support for the UWS Children’s Hospital management tour.
- Distributed 40 notifications to businesses and residents regarding traffic barrier removal and stripping.
- Delivered notifications to stakeholders on Broadway and the Capitol Hill email list regarding upcoming lane closures and night work on Broadway.
- Sent U-Link project update to more than 5,000 email subscribers.

# Link Light Rail University Link Extension– Tunnels



## U220 Contract - TBM Tunnel (UWS to CHS)

The U220 contract achieved Substantial Completion on June 7, 2013. All work is done.

## U230 Contract - TBM Tunnel (CHS to PSST)

Substantial Completion was achieved in March 2013. All work is done.

### Cost Summary

Present Financial Status	Amount
<b>U220 Contractor— Traylor Frontier-Kemper Joint Venture (TFK)</b>	
Original Contract Value	\$309,175,274
Change Order Value	\$12,067,459
Current Contract Value	\$ 321,408,334
Total Actual Cost (Incurred to date)	\$ 315,071,655
Financial Percent Complete	100%
Physical Percent Complete:	100%
Authorized Contingency	\$30,917,527
Contingency Drawdown	\$12,233,060
Contingency Index*	2.53

\*Physical % complete / % contingency drawn down

### Cost Summary

Present Financial Status	Amount
<b>U230 Contractor— JCM Joint Venture</b>	
Original Contract Value	\$153,556,000
Change Order Value	\$9,866,998
Current Contract Value	\$163,452,998
Total Actual Cost (Incurred to date)	\$156,979,939
Financial Percent Complete	100%
Physical Percent Complete	100%
Authorized Contingency	\$15,355,600
Contingency Drawdown	\$9,896,998
Contingency Index*	1.56

\*Physical % complete / % contingency drawn down

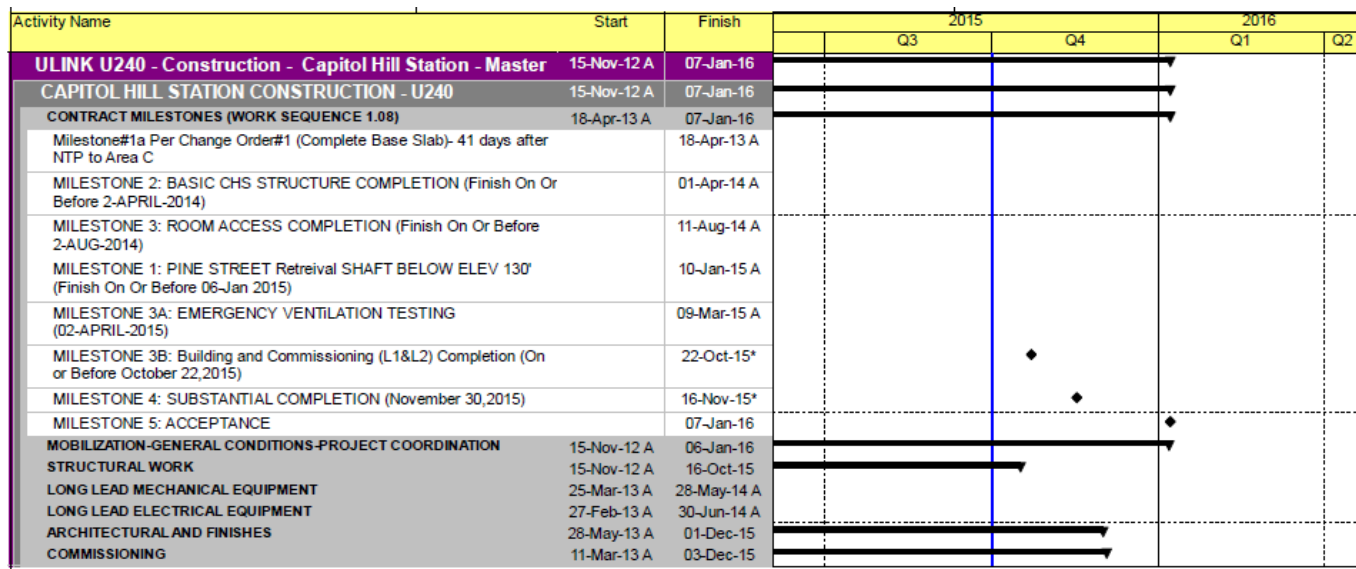
## U240 Contract – Capitol Hill Station

### Current Progress

The U240 Contractor did not achieve Substantial Completion in August 2015. The schedule submitted has been adjusted for revised milestones that ST and the contractor are negotiating. Site work and Final Inspections will continue into November for a revised Substantial completion date in November. Mechanical and electrical commissioning is well underway. Station finishes continue this period. Elevator and Escalator are nearing completion. The phased Red Wall removal is almost complete. No change to physical percent complete this period due to the changes to the schedule. Time will be extended in an upcoming change order.

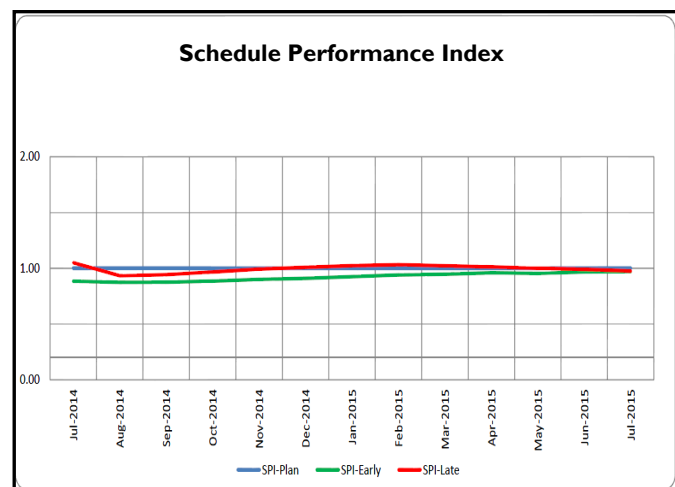
### Schedule/Critical Path

Milestone #4, Substantial Completion, is reporting 14 days of positive float based on revised milestones being negotiated. The Contractor has added late change orders and work directives to the schedules that are impacting substantial completion the critical path and commissioning activities.



### Schedule Performance Index

The U240 Schedule Performance Index (SPI) remains at 0.97 this period. Work Directives and Change Orders are now driving the work at U240. No updates to SPI.





# Link Light Rail University Link Extension– Stations



## Key Activities

### Current Period

- Completed installing the bus shelter at the North Entry.
- Commenced wall tiling the North face of the North entry structure.
- Continued fine tuning work on escalators and elevators throughout the main station and at the West Entry.
- Commenced installing code signage along platform and basement areas.
- Continued commissioning of the remaining mechanical systems throughout.
- Continued to wire up the overhead coiling doors at all entry ways.
- Continued cleaning throughout the station in preparation for punch walk through.
- Continued working off preliminary punch list items on the platform and basement levels.
- Site work continued, including forming and placing concrete sidewalk along Denny Way and Broadway Ave. Commenced installing permanent fencing along Broadway.

### Next Period

- Contractor scheduled to complete all miscellaneous tiling throughout station.
- Electrical and mechanical subcontractors will continue working on system commissioning throughout the station and continue working on stairwell and elevator pressurization issues.
- Continue installing trellis metal screens around the main station and West Entry.

- Continue intermittent work with installing and testing the fire alarm system throughout the station and West Entry.
- Contractor to continue site restoration, complete all curb, gutter and sidewalk work on site, and landscapers to complete remainder of the landscape work on site, not including Pine St. restoration.
- Remove Baker tank on site and get ready to receive approval to use permanent system

## Closely Monitored Issues

- Partition wall “inefficiencies” as outlined in RFC 96 continue to be worked through. A unilateral CO was issued to the contractor as a final settlement. The Contractor subsequently submitted Notice of Intent to Claim (NIC) 041, which includes the remaining costs from RFC 096.
- The contractual Substantial Completion milestone date was not met (Aug. 2). ST is working with the Contractor to obtain substantial completion. ST has prepared Unilateral Change Order 277 revising Milestones and has been transmitted to the Contractor.
- Two major issues regarding the emergency ventilation system that are being closely monitored include the delivery of the door assist hardware for stairs, and the motorized dampers that are required throughout the station. These items are expected to be delivered and installation to begin in October 2015.

## Cost Summary

Present Financial Status	Amount
<b>U240 Contractor - Turner Construction</b>	
Original Contract Value	\$104,850,276
Change Order Value	\$8,844,302
Current Contract Value	\$113,694,578
Total Actual Cost (Incurred to date)	\$107,219,551
Financial Percent Complete:	94%
Physical Percent Complete:	94%
Authorized Contingency	\$11,742,514
Contingency Drawdown	\$8,844,302
Contingency Index	1.25



Landscaping along north entry of CHS.

## U250 Contract – *University of Washington Station*

### Current Progress

Milestone #7, Substantial Completion, was granted in November 2014. U250 continued punchlist work and is expected to be complete by August 2015 with the installation of the handrail at the MTP Bridge and final inspections by L & I.

Work progress continued with approximately 100% physical completion against 100% contract time expended.

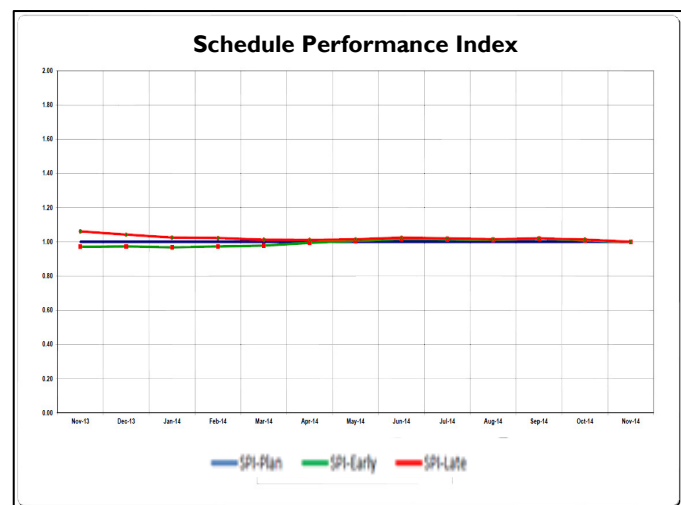
### Schedule/Critical Path

Punchlist and commissioning work is ongoing and is expected to be completed next period.

Activity Name	Start	Finish	2015								2016	
			Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2		
<b>ULINK U250 - Construction - UW Station</b>	05-Apr-11 A	19-Jan-15	[Gantt bar spanning from Q3 2014 to Q1 2015]									
<b>MILESTONES</b>	01-Apr-13 A	14-Nov-14 A	[Gantt bar spanning from Q4 2014 to Q4 2015]									
MILESTONE 1 (727d FROM NTP) (31 Mar 13) ACHIEVE BASIC STRUCTURE COMPLETION OF STATION		01-Apr-13 A	[Gantt bar spanning from Q4 2014 to Q1 2015]									
MILESTONE 2 (60d FROM OCC OF EAST BOUNDARY F3) (01 Apr 13)		06-May-13 A	[Gantt bar spanning from Q4 2014 to Q1 2015]									
MILESTONE 3 (880d FROM NTP) (31 Aug 13) UWS ROOM ACCESS COMPLETION		30-Aug-13 A	[Gantt bar spanning from Q4 2014 to Q1 2015]									
MILESTONE 4 (1031d FROM NTP) (29 Jan 14) BASIC STRUCTURE COMPLETION OF ENTIRE UWS FOR USE BY SYSTEM WIDE		29-Jan-14 A	[Gantt bar spanning from Q4 2014 to Q1 2015]									
MILESTONE 5 (1033d FROM NTP) (31 Jan 14) UWS ROOM ACCESS COMPLETION FOR ALL SYSTEM ROOMS		29-Jan-14 A	[Gantt bar spanning from Q4 2014 to Q1 2015]									
MILESTONE 6 (1160d FROM NTP) (07 Jun 14) RESTORATION OF THE SITE OUTSIDE OF THE CONSTRUCTION WORK AREA		06-Jun-14 A	[Gantt bar spanning from Q4 2014 to Q1 2015]									
MILESTONE 7 SUBSTANTIAL COMPLETION OF ALL WORK (1320d FROM NTP) (14 Nov 14) SUBSTANTIAL COMPLETION OF ALL WORK		14-Nov-14 A	[Gantt bar spanning from Q4 2014 to Q4 2015]									
<b>CONSTRUCTION</b>	05-Apr-11 A	19-Jan-15	[Gantt bar spanning from Q3 2014 to Q1 2015]									
STATION	05-Apr-11 A	19-Jan-15	[Gantt bar spanning from Q3 2014 to Q1 2015]									
CROSSOVER	01-Aug-12 A	12-Dec-14	[Gantt bar spanning from Q4 2014 to Q4 2015]									
ABOVE GRADE ENTRY	31-Aug-12 A	12-Dec-14	[Gantt bar spanning from Q4 2014 to Q4 2015]									
PEDESTRIAN BRIDGE	29-Feb-12 A	12-Dec-14	[Gantt bar spanning from Q4 2014 to Q4 2015]									

### Schedule Performance Index

Substantial Completion was granted in November 2014. Punchlist and handrail are expected to be completed next period.



## Key Activities

### Current Period

- Level 1 & 2 commissioning continued. Projected completion for Level 1-2 Commissioning is the end of October 2015, subject to completion of L&I escalator inspections.
- Continued Level 3 inter-station commissioning. The GC/CM, MC/CM, and EC/CM continue to provide support as requested.
- Continued closing out of all remaining commercial issues.

### Next Period

- Complete commission test demonstrations, Levels 1 & 2 by the end of October.
- Complete final inspections for elevator and escalator operation.
- Continue closing out of all remaining commercial issues.
- Continue Level 3 inter-station commissioning.

## Closely Monitored Issues

- Final escalator inspection and permit approval for remaining escalators (1-3, 7-8) is ongoing. L&I has provided a formal inspection report, and implementation of the corrective actions is pending.
- 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. Appeals have been received for all three claims.
- Level 3 inter-station testing performed to date has identified excessive egress door opening forces while tunnel ventilation modes are active. The Engineer of Record is working with ST Civil/Systems Integration to address the pressurization design.

## Cost Summary

Present Financial Status	Amount
<b>U250 Contractor - Hoffman Construction Co.</b>	
Original Contract Value	141,745,898
Change Order Value	6,831,298
Current Contract Value	148,577,196
Total Actual Cost (Incurred to date)	147,903,121
Financial Percent Complete:	99%
Physical Percent Complete:	99%
Authorized Contingency	7,087,295
Contingency Drawdown	6,831,298
Contingency Index	1.03



UWS at night.

## U810 Contract – *Maintenance of Way*

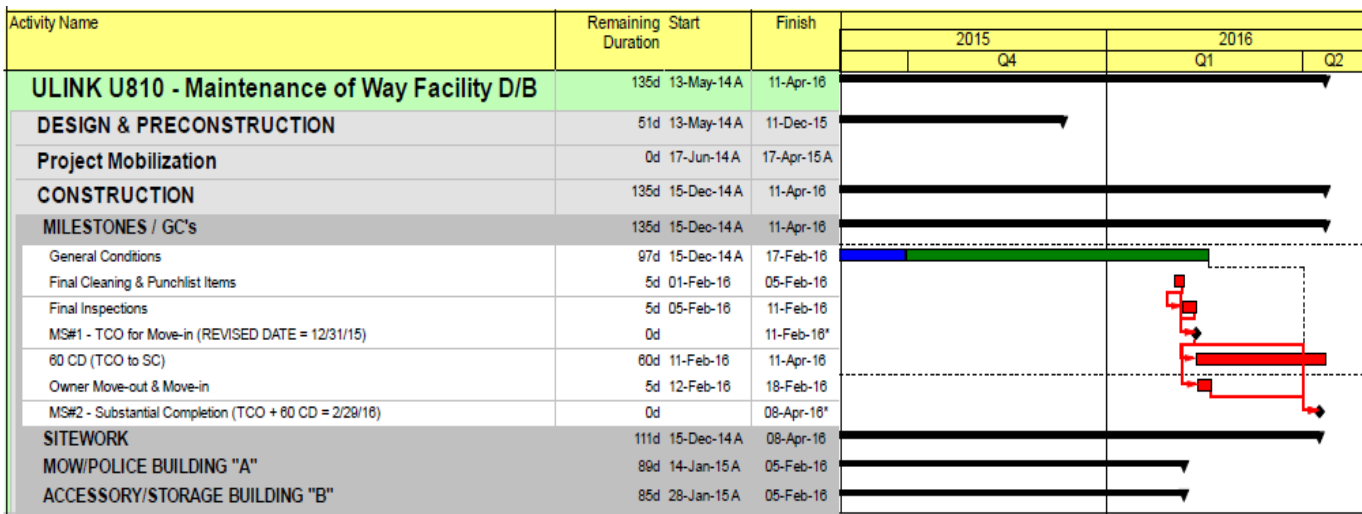
### Current Progress

The MOW steel erection is complete as well as roofing. Exterior siding is nearing completion. MEP rough-in and interior framing are now underway.

Work progress continued with approximately 64% physically complete against 85% contract time expended.

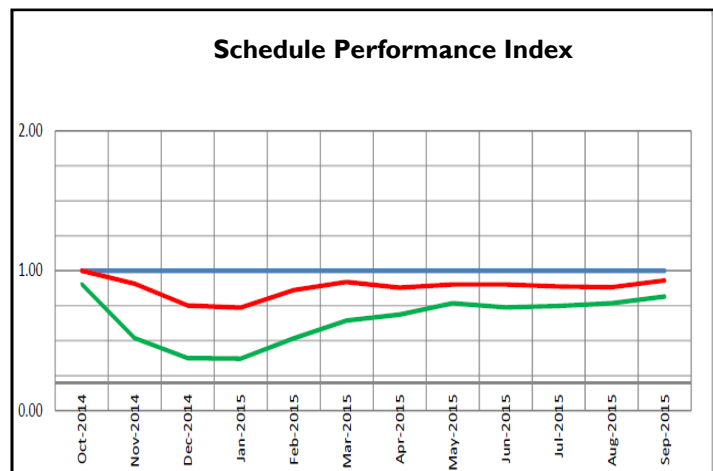
### Schedule/Critical Path

Milestone revisions are expected to be negotiated with the contractor due to permit issuance delays. Milestone #1 is currently reporting 42 days of negative float.



### Schedule Performance Index

The SPI based on early forecasts and is reporting below 1.00 this period to 0.82. The delays to the permit issuance and the start of construction continues to impact SPI but has risen slightly this period as the contractor recovers from early project delays.





## Key Activities

### Current Period

- Continued work on the LEED certification.
- Continued metal stud framing and drywall installation on the first and second floor of the main building.
- Continued early MEP rough-in for the first & second floor of the administrative area.
- Windows and door openings for the main building were framed in. Window tracks and flashings were installed.
- CMU installation commenced around the perimeter of the high bay area.
- Completed with insulation and roofing over the high bay area.
- Commenced metal siding on the administrative portion of the main building.

### Next Period

- Continue work on the LEED certification.
- Metal stud framing and drywall activities on the second floor.
- MEP rough-in for fire lines, HVAC, electrical, and plumbing continued in the main building.
- Windows to be delivered and installation to begin on the main building.
- Metal siding will continue on the administrative portion and high bay area of the main building.
- CMU installation will continue around the perimeter of the high bay area.

- Structural steel for the accessory building to be delivered and steel erection to begin.

## Closely Monitored Issues

- Contractor submitted a claim for the removal of hazardous and contaminated material, which ST continues to review for possible merit.
- Several items on the Project Requirements Equipment List are not available per “Buy America” requirements. A resolution for these items is being researched.

## Cost Summary

Present Financial Status	Amount
<b>U810– Forma Construction (Design/Build)</b>	
Original Contract Value	\$11,998,725
Change Order Value	\$22,278
Current Contract Value	\$12,021,003
Total Actual Cost (Incurred to date)	\$7,156,708
Financial Percent Complete	70%
Physical Percent Complete:	70%
Authorized Contingency	\$959,898
Contingency Drawdown	\$22,278
Contingency Index	35.25



Installing wall board of 2nd floor.

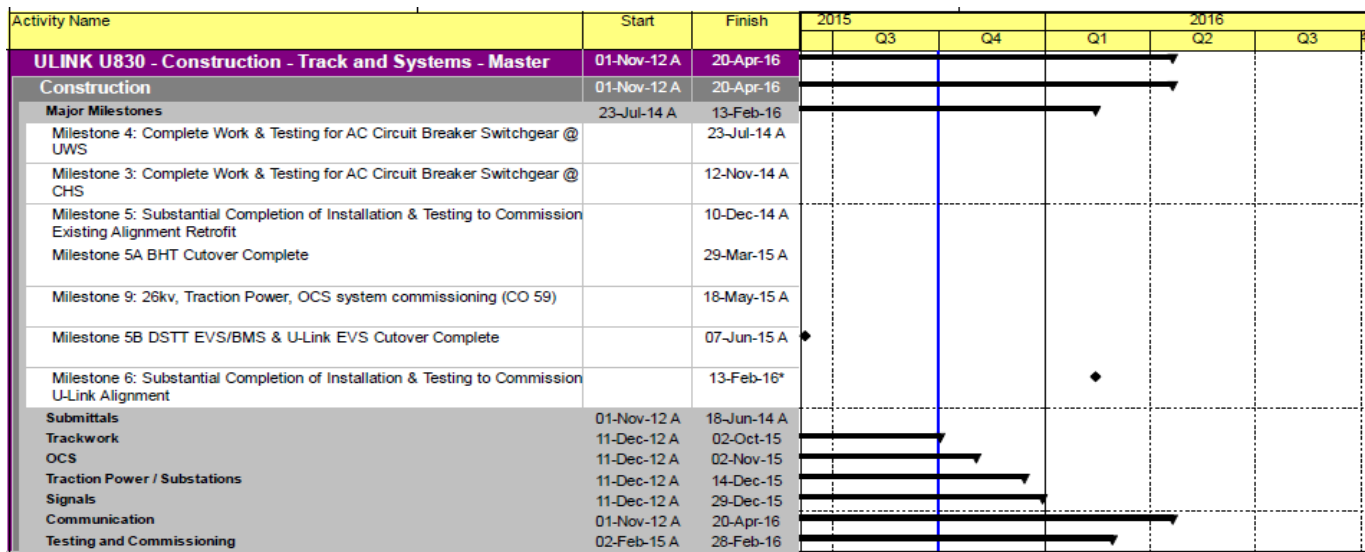
## U830 Contract – Track, Signal, Traction Power and Communications

### Current Progress

Track construction is now 100% complete. OCS tie in at Pine St. is complete and testing is expected to commence in October 2015. Coordination between station contractors continues. Delays to radio procurement continue but mitigation opportunities have been identified and will be implemented in October 2015 prior to the commencement of System Integration Testing. Work progress continued with approximately 97.8% physically complete against 98% contract time expended.

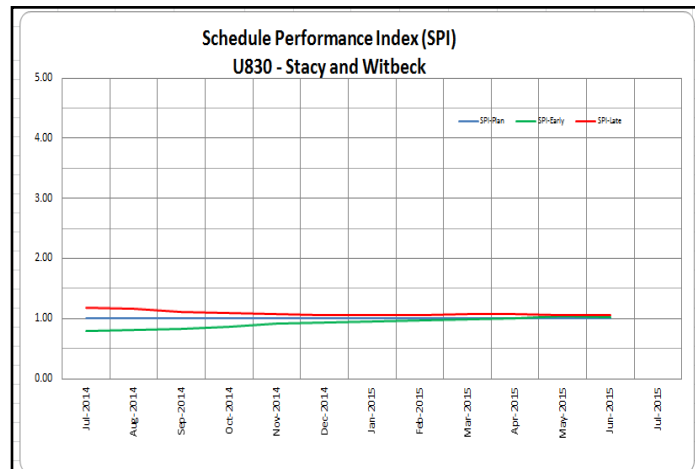
### Schedule/Critical Path

A status schedule for September has been received. System Integration Testing will re-commence in October with Pine St. tie in complete and radio installation underway. Pre-Revenue service Milestone #6 (Substantial Completion) is reporting 116 days of negative float based on forecasts. It is expected that Milestone 6 will need to be re-defined as the contractor and ST identify the necessary System Integration Tests for Pre-Revenue Service and Revenue Service.



### Schedule Performance Index

No application for payment has been formally submitted this period. SPI has not been updated.



### Key Activities

#### Current Period

##### *Trackwork*

- Completed installation of tunnel signage.
- Ongoing repair of tunnel leaks.

##### *Traction Power/Signal/Com-SCADA Systems*

- Continued terminating and testing cables.
- Continued installing communication devices at stations.
- Continued installing and terminating cables and devices at stations.
- Continued system signal testing.
- Ongoing OCS punchlist. Continued OCS tie-in to PSST.
- Continued systems integration tests.

#### Next Period

- Continue terminating and testing cables.
- Continue installing communication devices at stations.
- Continue installing and terminating cables and devices at stations.
- Continue signal systems testing.
- Continue OCS tie-in to PSST.
- Continue systems integration testing.
- Continue repair of tunnel leaks.

### Closely Monitored Issues

- Current focus is on the completion of the communications systems installation at stations.
- Working closely with contractor to complete outstanding test reports.
- Closely monitoring ongoing systems testing and commissioning.

### Cost Summary

Present Financial Status	Amount
<b>U830 GCICM Contractor - Stacy &amp; Witbeck</b>	
Original Contract Value	\$119,167,433
Change Order Value	\$2,626,651
Current Contract Value	\$121,794,084
Total Actual Cost (Incurred to date)	\$106,681,351
Financial Percent Complete	87%
Physical Percent Complete:	92%
Authorized Contingency	\$5,958,373
Contingency Drawdown	\$2,599,701
Contingency Index	2.1



BMS testing at the OMF.

**U820 Contract - LRV Storage and Yard Expansion**

**P821 Contract - Light Rail Vehicles**

**C802 Contract - Signals Systems (Yard Expansion)**

**Other Systems - Radio Console, Fare Collection.**

**Key Activities**

*Closed Contracts*

- C802 Signals Yard Expansion
- U820 LRV Storage and Yard Expansion
- U826 Radio Console Upgrade
- U860 Network Fiber
- U820- LRV Storage and Yard Expansion

Current Period

*P821 – Light Rail Vehicles*

- Contract Close Out on hold until the completion of the Traction Motor/Gear Unit repairs.
- Completed three car sets of TM/GU.

*Other Systems*

- U835 EMI/Vibration & Wheel Flat Monitoring – continue installation and testing and submit functional installation test results
- U829 Fare Collection Contracts – TVM work continues.

Next Period

*P821 – Light Rail Vehicles*

- Contract Close Out on hold until the completion of the Traction Motor/Gear Unit repairs.
- Continue with repair collaboration with manufacturer on the TM/GU fleet.

*Other Systems*

- U835 EMI/Vibration & Wheel Flat Monitoring – Continue testing & submit test results, ships serves to Seattle.
- U829 Fare Collection Contracts – TVM work continues.

**Closely Monitored Issues**

- Timely repair of the TM/GU is critical to provide sufficient LRV units to adequately support a 6 minute headways operation when University Link commences.
- Monitor metal stud subcontractor under U810 on Buy America compliant impacts.

**P821 Cost Summary**

Present Financial Status	Amount
<b>P821 Manufacturer — Kinkisharyo Intl.*</b>	
Original Contract Value (U-Link Option)	\$94,576,095
Change Order Value	\$4,598,480
Current Contract Value	\$99,174,575
Total Actual Cost (Incurred To Date)	\$99,174,575
Financial Percent Complete:	100%
Physical Percent Complete:	100%
Authorized Contingency	\$4,608,904
Contingency Drawdown	\$4,598,480
Contingency Index	N/A

\*Change Order to Initial Segment LRV Contract

**C802 Cost Summary**

Present Financial Status	Amount
<b>C802 Train Control —GETS Global Signaling, LLC*</b>	
Original Contract Value (U-Link Option)	\$1,996,269
Change Order Value	\$15,390
Current Contract Value	\$2,011,659
Total Actual Cost (Incurred To Date)	\$2,011,659
Financial Percent Complete:	100%
Physical Percent Complete:	100%
Authorized Contingency	\$103,731
Contingency Drawdown	\$15,390
Contingency Index	N/A

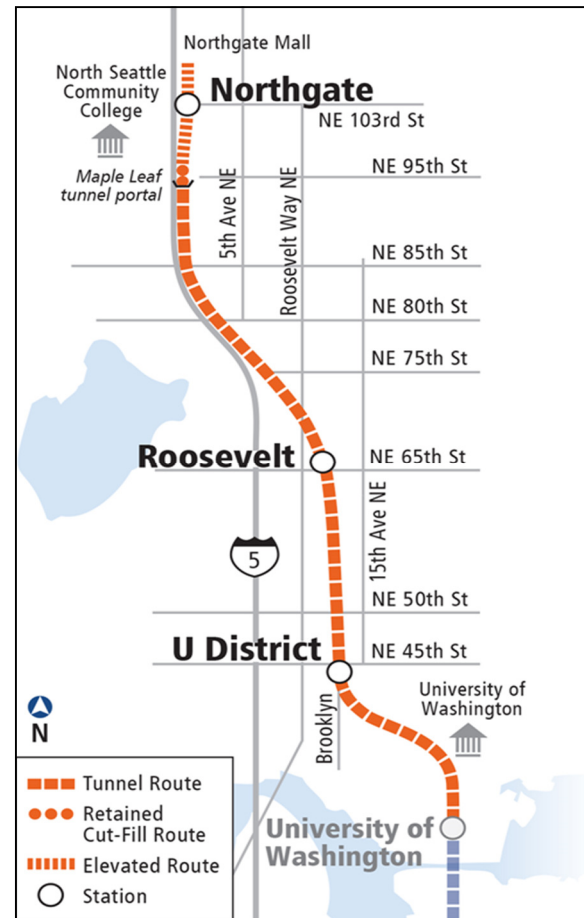
\*Change Order to Initial Segment Train Control Contract.  
55% of contract costs are assigned to U-Link 45% Northgate Link.



# Link Light Rail Northgate Link Extension

## Scope

- Limits:** The Northgate Link Extension consists of 4.3 miles of light rail extending from the University of Washington to Northgate.
- Alignment:** The extension begins at the UW Station, boring tunnels under campus then continues north to a portal located north of NE 94<sup>th</sup> Street on the east side of I-5, then transitioning to an aerial structure running north to the Northgate Mall.
- Stations:** The *U District Station* is an underground station located on the west side of the UW campus near Brooklyn Ave. and NE 45<sup>th</sup> St. The *Roosevelt Station* is an underground station located near NE 65<sup>th</sup> St. and 12<sup>th</sup> Ave NE. The *Northgate Station* is an elevated station located at the southwest edge of the Northgate Mall property.
- Systems:** Include Signals, track electrification, and SCADA communications, and an additional 40 light rail vehicles.
- Budget:** \$2.131 Billion
- Service:** September 2021
- Phase:** Final Design and Construction



Map of Northgate Link Extension route and stations.

## Key Project Activities

- Revision to the Project baseline budget (removing LRVs) was approved by ST Board on September 24.
- Held coordination meeting with SDOT, WSDOT and KCM to discuss project status of SDOT Ped Bridge, progress, WSDOT's design approval, and parking replacement requirements for the KCM Bus Layover.
- Continued to conduct quarterly risk register reviews.
- Progressing various Final Design contract packages. (See *Final Design* section for details.)
- For *N111 Advanced Utility Relocation*, The Contractor continued duct bank excavation and vault installation; completed the casing for the Thornton Creek Undercrossing.
- For *N113 SCL 115kV Transmission Line Relocation*, power pole procurement advertised this period.
- For *N125 TBM Tunnels*, continued tunneling operations on both bores between Roosevelt Station and U District Station.
- At the *U District Station (UDS)*, Contractor continued dewatering well operations; completed installation of temporary TBM working slab over filled/compacted area in excavation site. Completed freezing formation at north headwall of tunnel eyes.

## Closely Monitored Issues

- Sound Transit and the Contractor are beginning work on a joint effort to plan and forward price ground freezing works for Cross Passages CP34-CP38, north of Roosevelt Station, with the aim of negotiating a Change Order covering all of the work prior to starting installation of the first freeze pipes.
- Production at N125 has been hampered by difficult soil conditions, necessitating both a Hyperbaric and a Free Air intervention for TBM No. 1 in order to repair the cutterhead and change the cutter teeth type. TBM No. 2 slowed down in the last two weeks of September due to conveyor problems. Contractor has not submitted an updated schedule for the month of September.

## 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.

Project Phase	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
ADMINISTRATION	\$147.5	\$147.5	\$32.5	\$33.7	\$147.5	\$0.0
PRELIMINARY ENGINEERING	\$15.1	\$15.1	\$15.1	\$15.1	\$15.1	\$0.0
FINAL DESIGN	\$128.5	\$128.5	\$107.2	\$88.7	\$128.5	\$0.0
CONSTRUCTION SERVICES	\$117.9	\$117.9	\$79.8	\$25.2	\$117.9	\$0.0
3rd PARTY AGREEMENTS	\$11.8	\$11.8	\$9.9	\$4.7	\$11.8	\$0.0
CONSTRUCTION	\$1,324.2	\$1,324.2	\$478.8	\$323.2	\$1,324.2	\$0.0
VEHICLES	\$0.0	\$0.0	\$0.7	\$0.0	\$0.0	\$0.0
ROW	\$127.3	\$127.3	\$85.4	\$85.0	\$127.3	\$0.0
PROJECT CONTINGENCY	\$22.2	\$22.2	\$0.0	\$0.0	\$22.2	\$0.0
<b>Total</b>	<b>\$1,894.5</b>	<b>\$1,894.5</b>	<b>\$809.3</b>	<b>\$575.5</b>	<b>\$1,894.5</b>	<b>\$0.0</b>

The Project Budget was amended in September to remove the amount set aside for procurement of light rail vehicles to the new LRV Procurement project. This modified the Northgate Link budget from \$2,131.4M to \$1,894.5M, a reduction of \$236.9M and reduced the current commitment by approximately \$4M. The Estimated Final Cost (EFC) for the project as of this reporting period is \$1,894.5M, which is equal to the updated project budget. This period, approximately \$16.7M was incurred, of which \$9.7M was for the N125 tunneling contract, the N111 Utility Relocation project at Northgate and other miscellaneous construction, and \$2.3M was for dewatering costs associated with the stormwater discharge permit. A total of \$1.4M was incurred for civil and systems final design and design support during construction, and \$1.3M was for construction management. The remaining expenditures were for third party coordination, staff, right-of-way and other direct charges.

Project Phase	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
ADMINISTRATION	\$147.5	\$147.5	\$32.5	\$33.7	\$147.5	\$0.0
PRELIMINARY ENGINEERING	\$15.1	\$15.1	\$15.1	\$15.1	\$15.1	\$0.0
FINAL DESIGN	\$128.5	\$128.5	\$107.2	\$88.7	\$128.5	\$0.0
CONSTRUCTION SERVICES	\$117.9	\$117.9	\$79.8	\$25.2	\$117.9	\$0.0
3rd PARTY AGREEMENTS	\$11.8	\$11.8	\$9.9	\$4.7	\$11.8	\$0.0
CONSTRUCTION	\$1,324.2	\$1,324.2	\$478.8	\$323.2	\$1,324.2	\$0.0
VEHICLES	\$0.0	\$0.0	\$0.7	\$0.0	\$0.0	\$0.0
ROW	\$127.3	\$127.3	\$85.4	\$85.0	\$127.3	\$0.0
PROJECT CONTINGENCY	\$22.2	\$22.2	\$0.0	\$0.0	\$22.2	\$0.0
<b>Total</b>	<b>\$1,894.5</b>	<b>\$1,894.5</b>	<b>\$809.3</b>	<b>\$575.5</b>	<b>\$1,894.5</b>	<b>\$0.0</b>

The Estimated Final Cost (EFC) for some contract packages have been reassessed and revised as a result of updated design development estimates and the award of Contract N125 at an amount lower than the adopted budget. The current adopted budget values have been updated to reflect the 2015 budget revisions and updated contingency amounts. The variances associated with some of the SCC groups shown above reflect the updated EFC due to these revisions.

## Cost Contingency Status

Compared to the baseline amount of \$396.2M, the Total Contingency has decreased by \$62.6M to \$333.6M, which is 25.3% of project work remaining. During this reporting period, a net decrease of \$20.7M 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 60% on N140, and 90% on N150 and N160. No changes to DA occurred during this period.

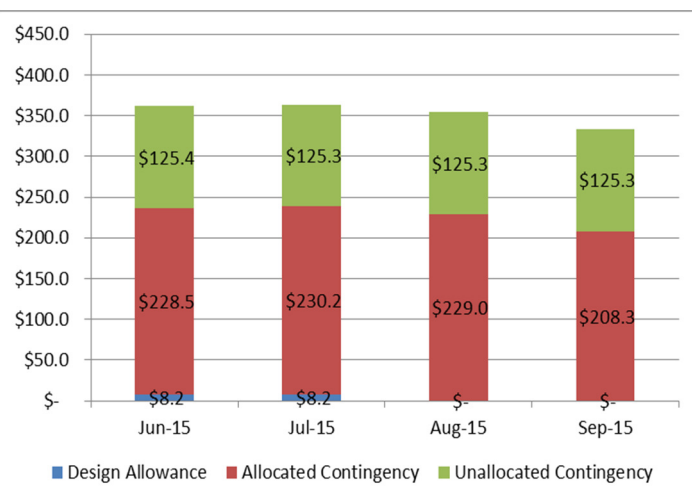


## Cost Contingency Status, continued

**Allocated Contingency** – Compared to the baseline amount of \$184.0M, Allocated Contingency has increased by \$24.3M to \$208.3M. During this reporting period, the \$21.1M in allocated contingency within the LRV procurement was removed off to the LRV project. An increase of \$0.4M occurred due to the issuance of change orders on the N125 Tunneling contract (including a large credit for some deleted work), and the Civil Final Design contract, for a net reduction in AC of \$20.7M.

**Unallocated Contingency** – Compared to the baseline amount of \$98.3M, Unallocated Contingency has increased by \$4.7M to \$103.0M. During this reporting period, \$22.2M in UAC associated with LRV procurement was reallocated to new Phase 109 within the Northgate budget, but the overall UAC amount for the project was unchanged at \$125.3M.

Contingency Status	Baseline		Current	
	Amount	% of Total	Amount	% of Work Remaining
Design Allowance	\$ 113.9	5.3%	\$ -	0.0%
Allocated Contingency	\$ 184.0	8.6%	\$ 208.3	15.8%
Unallocated Contingency	\$ 98.3	4.6%	\$ 125.3	9.5%
<b>Total</b>	<b>\$ 396.2</b>	<b>18.6%</b>	<b>\$ 333.6</b>	<b>25.3%</b>



## Project Schedule

The N105 Key Bank Site Demolition is currently in Pre-Procurement after CCB approval in September. The design team is completing the IFB Plans and Specifications in conjunction with ST Construction Management. Bid Advertisement is scheduled for mid-December and NTP in early April 2016.

The N111 Advanced Utilities Relocation contractor has completed the installation of the 42" casing under Thornton Creek and has resumed ductbank installation south of NE 100th St. Water line construction is complete with the exception of a final tie-in. The Contractor is behind and currently forecasts a construction completion of in November 2015. The contract has 19 days of ST controlled float remaining. A change order is currently being negotiated which will likely grant an additional 4 days.

The N113 project team is completing the 100% Design, due October 2. ST is still awaiting reviews from WSDOT on the 90% package, as well as USACE review of the project. Both reviews are expected prior to any impacts to the project. The forecast bid date is November 2015 and NTP is scheduled for March 2016.

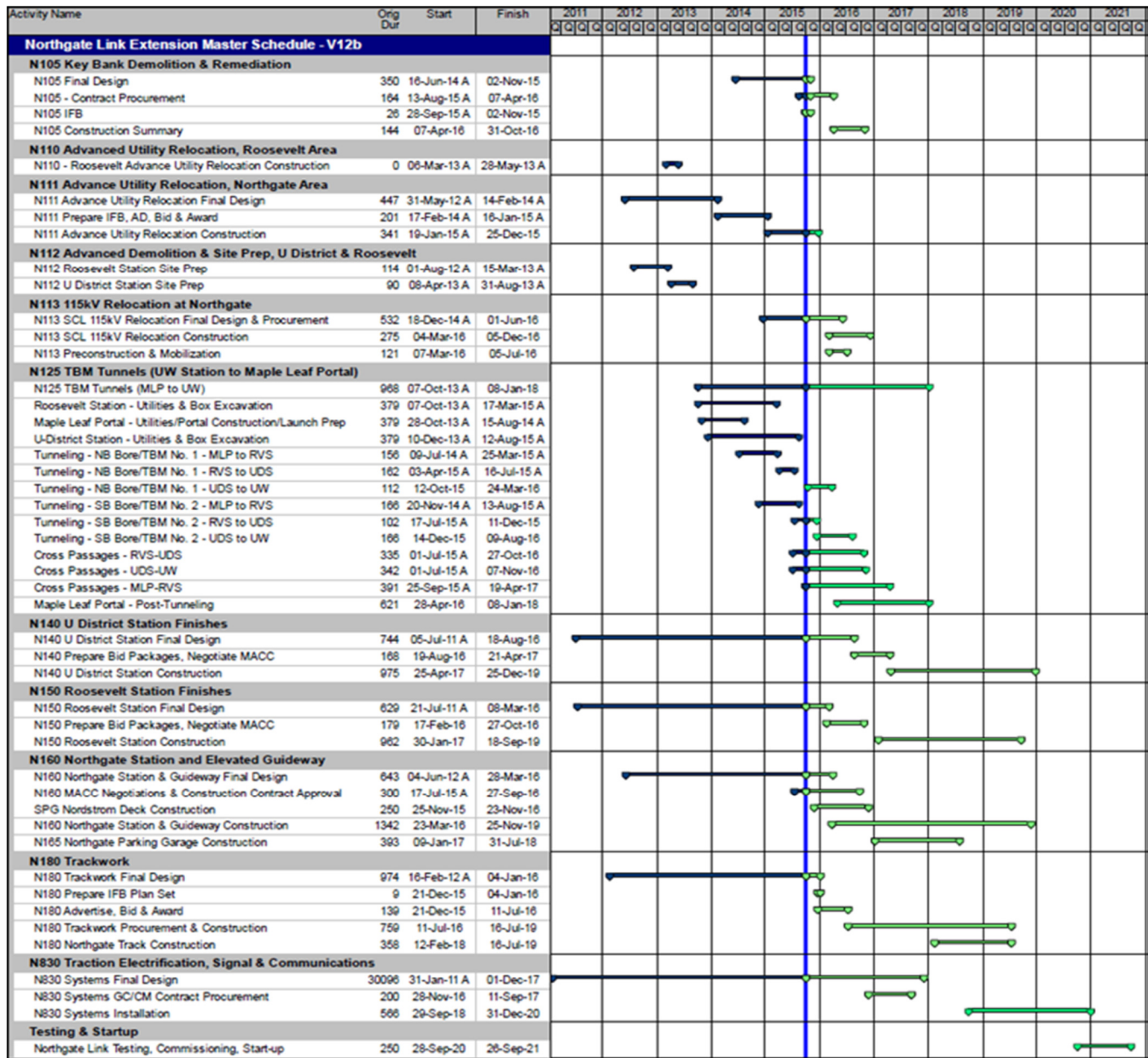
The N125 Contractor is continuing tunneling operations on both bores between Roosevelt Station and U District Station. As of September 30, TBM No. 1 had dug 260 feet, undergoing a Hyperbaric Intervention in mid-September. Production has been hampered by difficult soil conditions, necessitating both a Hyperbaric and a Free Air intervention for TBM No. 1 in order to repair the cutterhead and change the cutter teeth type. TBM No. 2 mined an average 183 feet/week in September, slowing in the last two weeks due to conveyor problems. JCM has completed placement of 95% of the invert concrete between MLP and RVS in the northbound tunnel. At this time JCM has not submitted an updated schedule for the month of September.

## Project Schedule, continued

The N140 U District Station 90% design is continuing, with submittal scheduled for mid-December. The GC/CM, Hoffman Construction, has proposed a number of cost saving measures that ST and the Designer are reviewing. The 60% SIP review was successfully completed in September. The N150 Roosevelt Station 100% design effort is continuing. This change was needed by the Designer in order to incorporate changes resulting from cost saving proposals made by the GC/CM. The change does not have an adverse impact on the project. The MUP for the Roosevelt Station is still expected in mid-October, the Building Permit is under City review and approval is still anticipated to be early October.

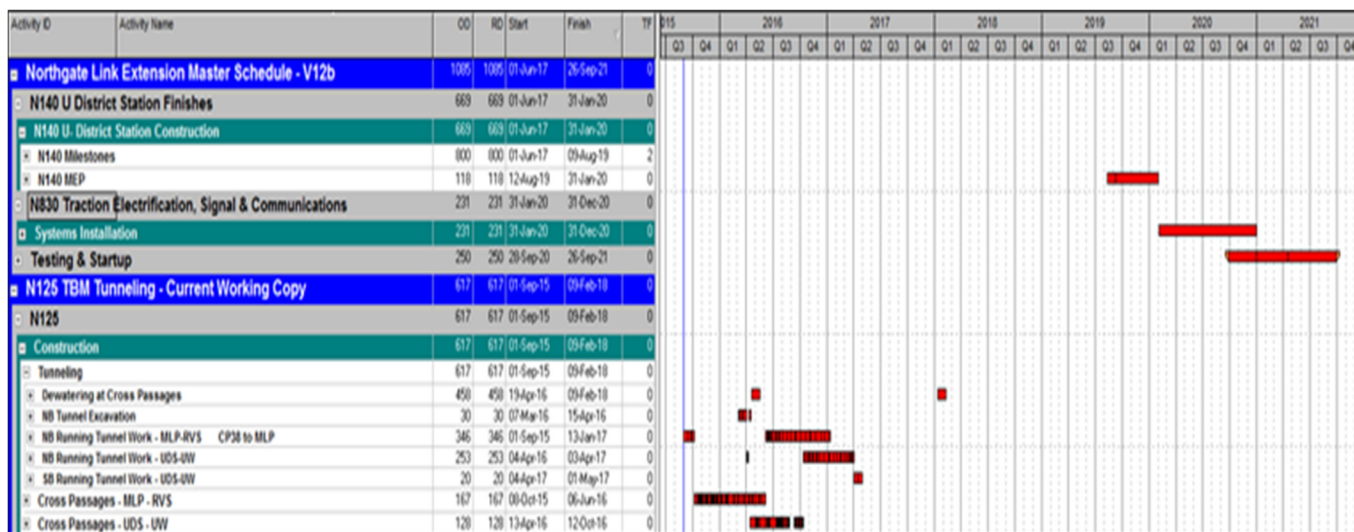
Delivery of the N160 100% design package submittal remains unchanged, scheduled for mid-December. The Parking Garage 90% Design Package has been reviewed and is now being incorporated into the overall N160 package. The advance works demolition and tenant improvements project at the strip mall has received CCB approval.

An orientation for the N180 Constructability Review was held on August 24. The full review began on August 31 and continued through September 3. The 90% design effort for N830 contract continues with the 90% design submittal expected in February 2016.



## Critical Path Analysis

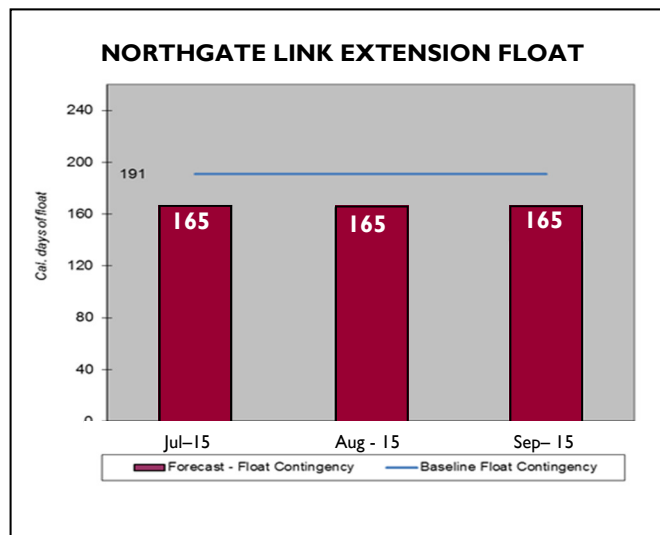
The longest path through the Northgate projects remains unchanged in September, and continues to run through N125 Milestone No. 5 and subsequent turnover of the U District station site to the N140 contractor. While tunneling remains critical, post tunneling work has taken over as the driving element of the N125 contract with cross passages and completion of the Maple Leaf Portal the main drivers.



## Critical Path Float

The Northgate Link Extension currently retains 165 days of unallocated project float. The N125 construction schedule currently shows a late completion of Milestone 5 - Turnover of N140 to the Station Contractor. However, the Contractor has not established entitlement for those days, and none of the 30 days of Owner Controlled float for this contract has been allocated to the Contractor.

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



## Construction Safety

Data/ Measure	September 2015	Year to Date	Project to Date
Recordable Injury/Illness Cases	0	6	91
Days Away From Work Cases	0	2	19
Total Days Away From Work	0	210	922
Restricted or Modified Work Cases	0	1	34
Total Days Restricted or Modified Work	0	3	1561
First Aid Cases	1	6	152
Reported Near Mishaps	1	13	241
Average Number of Employees on Worksite	124	-	-
<b>Total # of Hours (GC &amp; Subs)</b>	<b>26,105</b>	<b>260,299</b>	<b>3,879,249</b>
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	0.00	4.61	4.69
DART Rate	0.00	2.31	2.73
<i>Recordable National Average</i>	<b>3.80</b>	<b>3.80</b>	<b>3.80</b>
<i>DART National Average</i>	<b>2.20</b>	<b>2.20</b>	<b>2.20</b>
<i>Recordable WA State Average</i>	<b>7.20</b>	<b>7.20</b>	<b>7.20</b>
<i>DART WA State Average</i>	<b>3.30</b>	<b>3.30</b>	<b>3.30</b>

## Right of Way

The U District and Roosevelt stations require the acquisition of a range of property interests including fee takings for stations and staging areas; tunnel easements are required for the running tunnel. These acquisitions will result in owner and tenant, residential and commercial relocations.

**Roosevelt Station** – All parcels have been acquired.

**U District Station** – All parcels have been acquired.

**Northgate Station** - Condemnation filed for two parcels; TCE in negotiations for two parcels, new trial date for two parcels.

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

Line Section	Total Parcels Certified	Offers Made	Signed Agree- ments	Admin. Settle- ments	Posses- sion and Use (P&U)	Closings to date	Baseline Relocations Required	Relocations Completed
U District Station	16	15	0	0	0	15	4	3
Roosevelt Station	20	19	0	0	0	18	26	26
Tunnel Easements	190	188	0	0	0	188	0	0
Northgate Station	11	11	0	0	2	3	13	12
<b>Total</b>	<b>237</b>	<b>233</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>224</b>	<b>43</b>	<b>41</b>

## Quality Assurance Activities

### Activities

- Acceptance of Proposed Corrective Action for Electrical Vault Installation

### Issues

- None to report.

### Summary

Description	Sep 2015	Notes
No. of Audits Planned	0	None
No. of Audits Completed	1	NI25 QA Audit Report
Reports in Progress	2	NI13 90% Design Submittal NI60 90% Design Submittal
No. of Audits Postponed	0	None

## Community Outreach

- Distributed various construction alerts to Roosevelt residents/businesses regarding ground freezing work, TBM tunneling progress, cross-passage dewatering work, etc.
- Sent project update to more than 4,100 subscribers.
- Provided a project briefing to UW facilities managers on September 23.

### *Business Mitigation*

- Hosted a tour of UW Station for five winners of the Roosevelt and U District business mitigation promotion.
- Sponsored a booth and distributed information at the annual U District “Up Your Ave” event.

## Sound Transit Board Actions

Board Action	Description	Date
R2015-23	Amended the Northgate Link Extension baseline budget to reflect the transfer of \$236,90,000 by (a) amending the project Lifetime Budget from \$2,131,400,000 to \$1,897,500,000 and (b) amending the project 2015 Annual Budget from \$208,165,302 to \$207,765,602.	Sep 24

## 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 – Key Bank Demo and Remediation:

- Began preparation of IFB package for issue in early November.

#### Contract Package N113 – 115kV Relocation at Northgate Station:

- Completed and submitted 100% design package for review.

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

- Continued 90% design effort, and continued preconstruction phase activities and coordination with the GC/CM contractor.
- Continued Green Street design efforts.
- Completed UW 240-ft TOD overbuild design effort.
- Continued research support/product research for cost reduction effort in conjunction with GC/CM.

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

- Continued 100% design effort including responses to 90% design comments.
- Continued NE 66th Street re-design effort.
- Continued coordination with GC/CM during preconstruction activities including responses to constructability comments.
- Continued research support/product research for cost reduction effort in conjunction with GC/CM.

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

- Continued 100% design effort for station and guideway with focus on building permit updates and guideway coordination with Systems.
- Continued 100% design effort on parking garage including ongoing development of the North Entry Plaza and 1st Ave access.
- Continued GC/CM pre-construction work sessions on station/site design, garage structure and staging, and elevated guideway.
- Continued preparation of demolition package for Northgate Commercial Site advanced work package for staging and restoration.

#### Contract Package N180 – Trackwork:

- Completed Constructibility Review workshop with Construction Management and Design teams.
- Continued coordination with structures and systems, and began preparation of updated 100% design package.

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

- Completed OCS coordination with N140 and N150.
- Completed the 26kV drawings for inclusion in the N180 contract package.
- Continued N830 communications design.

## Final Design Schedule

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

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

F/A\* = Forecast/Actual

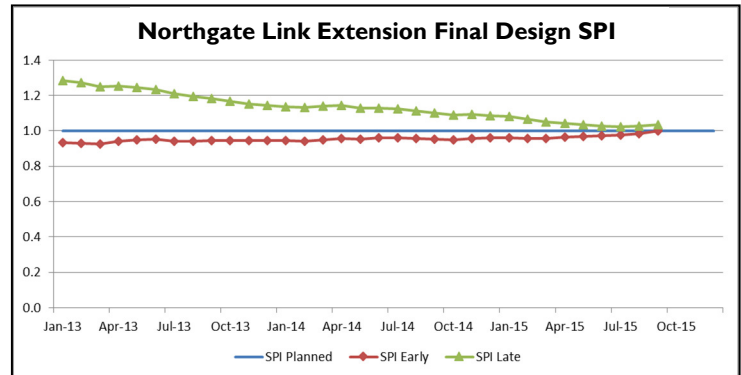


# Link Light Rail Northgate Link Extension - Final Design



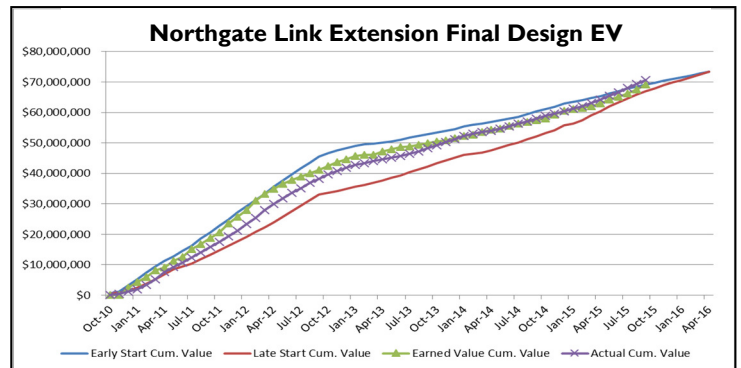
## Final Design Schedule Performance

For Final Design activities only, the Schedule Performance Index (SPI) reported this period is 1.0 based on the early start dates and the late start SPI is 1.03. The design consultant has had some design deliverable milestones for N140, N150 and N180 pushed back.



## Final Design Cost Performance

Through this period, the total amount spent for civil final design is \$75.9M, which is approximately 82.3% of the total contract amount including change orders. For final design activities only, the total amount spent is \$70.6M, which is approximately 95.0%. The consultant reported 93.2% complete for final design activities, resulting in an Earned Value of \$69.2M. The current period Cost Performance Index (CPI) is reported at 1.4, and the 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	\$69,336,829	\$1,298,076	\$70,634,905
Spent	93.3%	1.7%	95.0%
Earned Value	\$67,505,545	\$1,755,311	\$69,260,856
% Complete	90.8%	2.4%	93.2%
CPI	1.0	1.4	1.0

## Other Key Final Design Activities

### Geotechnical Investigation

- Continued geotechnical support including boring tests for the Northgate Parking Garage.

### Surveying and ROW

- Continued survey along NE 66th St in support of N125 contract and updated control sheets for N113 100% design submittal.
- Continued development of N160 parcel map and exhibit updates for ROW.
- Carried out additional utility investigation along 1st Ave NE for N160.

### Traffic Engineering Report

- Continued traffic engineering support for Maintenance of Traffic efforts and final design traffic elements as needed.

### Permits

- Continued coordination support on MUP and SIP applications for N140, N150 and N160.
- Responded to WSDOT inquiries regarding N113 potential impacts to jurisdictional wetlands and ditches.

### Noise Mitigation for At Grade and Elevated Guideway

- None to report.

### Ground Borne Noise and Vibration

- Continued updating the N180 design to reflect U-Link prototype test data.

### Construction Cost Estimating

- Continued development of cost saving ideas in conjunction with GC/CM for N140, N150, and N160.

### Construction Schedules

- No work this period.

### Quality Assurance

- Continued QC tasks on active design packages, including completion of the N113 90% QA Audit.

### 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.
- Integration and coordination with Systems Consultant (LTK), Art Consultant and Station Artists.

## Major Construction Contract Packages

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

**N105 Key Bank Demolition and Remediation** - Demo of Key Bank Building, remove underground storage tanks and remediate contaminated soil.

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

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

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

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

**N125 TBM Tunnels UW Station to Maple Leaf Portal** - Tunneling work and support of excavation of station boxes for the U District and Roosevelt stations.

**N140 U District Station Finishes** - Civil and architectural finishes work for the U District Station.

**N150 Roosevelt Station Finishes**– Civil and architectural finishes work for the Roosevelt Station.

**N160 Northgate Station & Elevated Guideway & Parking Garage**- Civil and architectural finishes work for the Maple Leaf Portal, the aerial guideway, and the Northgate Station and Tail Track. Construction of a 450 stall parking garage to be located at the south corner of the existing Northgate Mall surface parking lot at NE 103rd St. near 1st Avenue NE.

**N180 Trackwork** - Installation of all trackwork through two tunnels and three stations between UW Station and Northgate Station, including tail track.

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

## Construction Schedule Highlights

Package	Bid Advertisement	NTP	Substantial Completion
N105-Key Bank Remediation/Demo	Nov 2015*	Mar 2016	Nov 2016
N111-Advanced Utility Relocation	Sept 2014A	Jan 2015A	Dec 2015
N113-SCL 115kV Relocate	Nov 2015	Mar 2016	Nov 2016
N125-Station Box Exc. & TBM Tunnels	Jan 2013A	Sep 2013A	Feb 2018
N140-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	Feb 2015A (GC/CM –Precon)	Jan 2016	Nov 2019
N180-Trackwork to Northgate Station	Feb 2016	Jul 2016	Jul 2019
N830-Traction Power, Signals & Com	May 2015 (GC/CM-RFQ)	Jan 2018 (construction)	Oct 2020

A = Actual

\* N105 may be “shelved” after 100% design until late 2015. Construction is planned for the Summer 2016. The site will not be needed by N140 until early 2017.

# Link Light Rail Northgate Link Extension - Construction



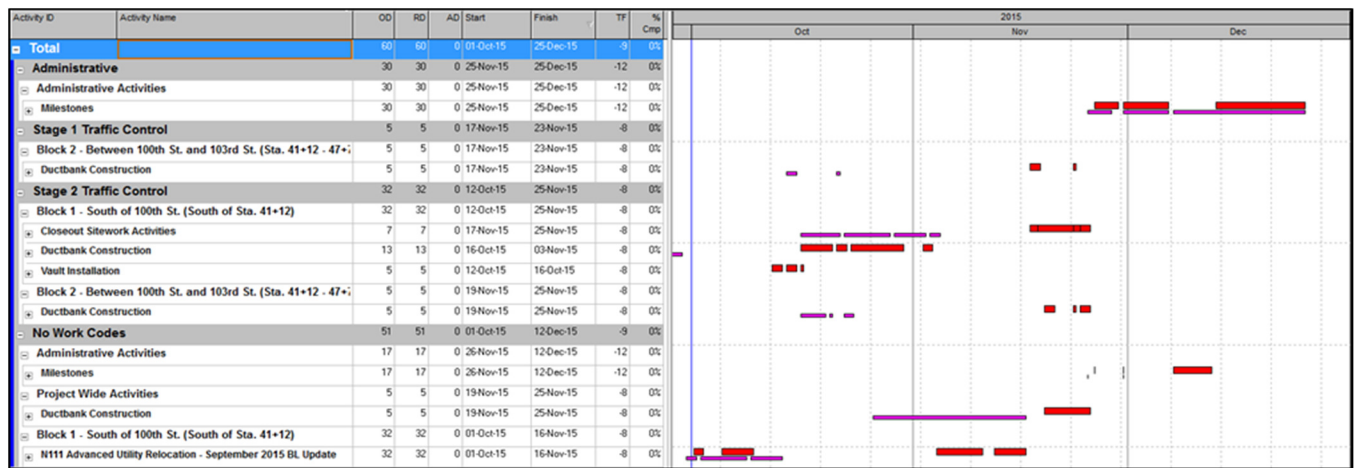
## Contract N111 – Advanced Utility Relocation

### Current Progress

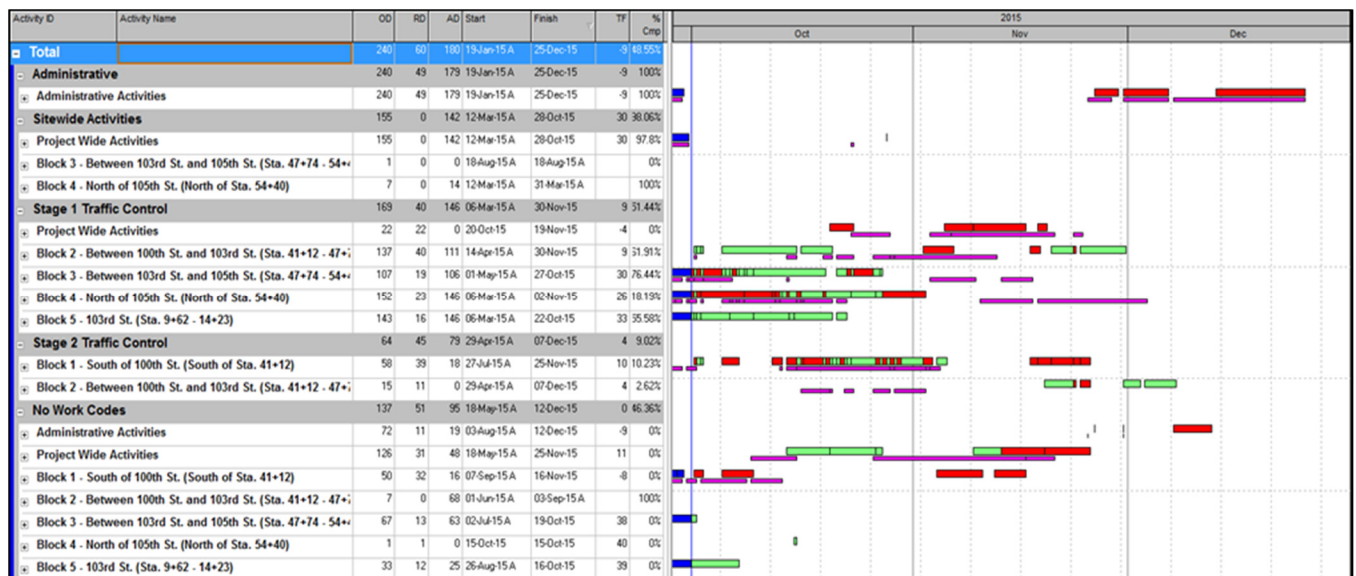
**Vault & Ductbank Installation-** Installation of ductbanks in Block 5 (north of NE 105th St), Block 4 (north of NE 103rd St) and along NE 103rd St continues on a two shift per day basis. Crews are working two shifts on Blocks 3 and 4. Only two Type 814 vaults remain to be installed, both south of NE 100th St. Walsh has completed the installation of the 42” casing under Thornton Creek at NE 100th St. The electricians are currently installing the ductbank in the casing. This work was captured in Change Order No. 9, which granted Walsh seven days of ST Controlled float.

**Storm Sewer & Water Line** –With the exception of a final water line tie-in south of NE 100th St, installation of water lines is complete. Drainage installation will continue, following the ductbank installations. Both are expected to be complete by the end of October.

### Schedule/Critical Path

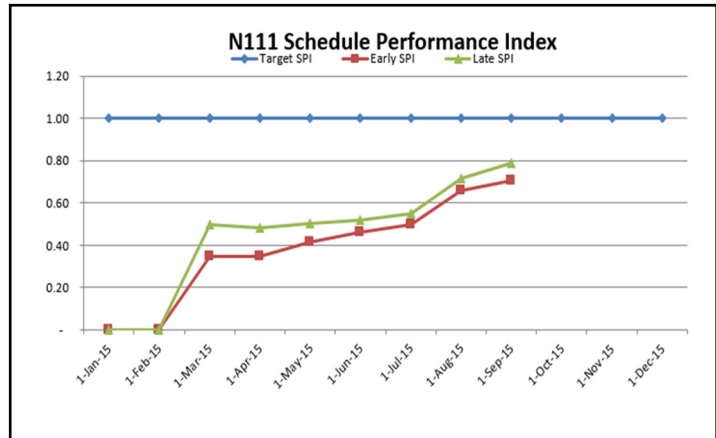


The schedule update for this period continues to forecast a late completion of December 2015. Several critical path items slipped during the period, most significantly the ductbanks south of NE 100th St, due to the change in the Thornton Creek undercrossing. The ductbanks in Blocks 1 and 2 have been resequenced and the Punchlist and Inspection of the ductbanks has been shortened from 15 days to 5 days. Walsh did add a new activity for an upcoming change order and took six days from the ST-controlled float. Since this time impact has not been reviewed and accepted by ST, the schedule update was returned as “Revise and Resubmit”. At this time work is still expected to be complete by the Thanksgiving Holiday.



## Schedule Performance Index

The SPI for the project was 0.71 in September up from the 0.65 reported in August. The increase reflects the increased volume of work accomplished by double shifting and the payment of several change orders.



## Key Activities

### Current Period

- Continued ductbank excavation along NE 103rd St (Block 3) towards 1st Ave NE and along 1st Ave NE north of NE 103rd St (Blocks 4 & 5).
- Continued ductbank construction along 1st Ave NE north of NE 103rd St (Blocks 4 & 5) and along 1st Ave NE between NE 100th St and NE 103rd St (Block 2).
- Completed installation of the 42" casing under the 72" Thornton Creek Culvert in 1st Ave NE at NE 100th St and began excavation and shoring of the "Receiving Pit."
- Contractor assisted SPU in the removal of an existing fire hydrant at the SE corner of NE 110th St and 1st Ave NE. Continued to investigate means and methods for installation of planned ductbanks under the existing 72" culvert in 1st Ave NE at NE 100th St, including hydraulic jacking.

### Next Period

- Continue ductbank excavation and ductbank construction.

### Closely Monitored Issues

- No current issues.

## Cost Summary

Present Financial Status	Amount
<b>N111 Contractor - Walsh Construction</b>	
Original Contract Value	\$9,370,000
Change Order Value	\$363,620
Current Contract Value	\$9,733,620
Total Actual Cost (Incurred to date)	\$5,687,695
Financial Percent Complete:	58.4%
Physical Percent Complete:	48.6%
Authorized Contingency	\$937,000
Contingency Drawdown	\$ 363,620
Contingency Index	1.25



Completing installation of the 42" Casing at NE 100th St intersection with 1st Ave NE.



# Link Light Rail Northgate Link Extension - Construction



## Contract N125 – TBM Tunnels

### Current Progress

The N125 Contractor (JCM) has not provided an updated schedule for the month of September. The Contractor did provide a recovery schedule for August, recovering the contract milestones, primarily by assigning cross passage work to a 6 day/week calendar. TBM No. 3 has also been logically disconnected from any contract milestones. This schedule was returned due to inconsistent application of proposed six-day work weeks and the resulting compression of the cross passage work. This report is based on CM weekly reports and Contractor provided three- week look-ahead schedules.

*Tunneling Operations* - TBM No. 1 mined a total of 260 feet in the first two weeks of September before requiring a shut-down and hyperbaric intervention to repair several cutterhead teeth. As of 2-Oct, TBM No. 1 was 80.9% complete with the drive from RVS to UDS. Planned arrival at UDS has slipped from the second full week of October to the first week of November. TBM No. 2 mined 915 feet in September. The last two weeks saw only 90 feet of production due to conveyor mechanical problems.

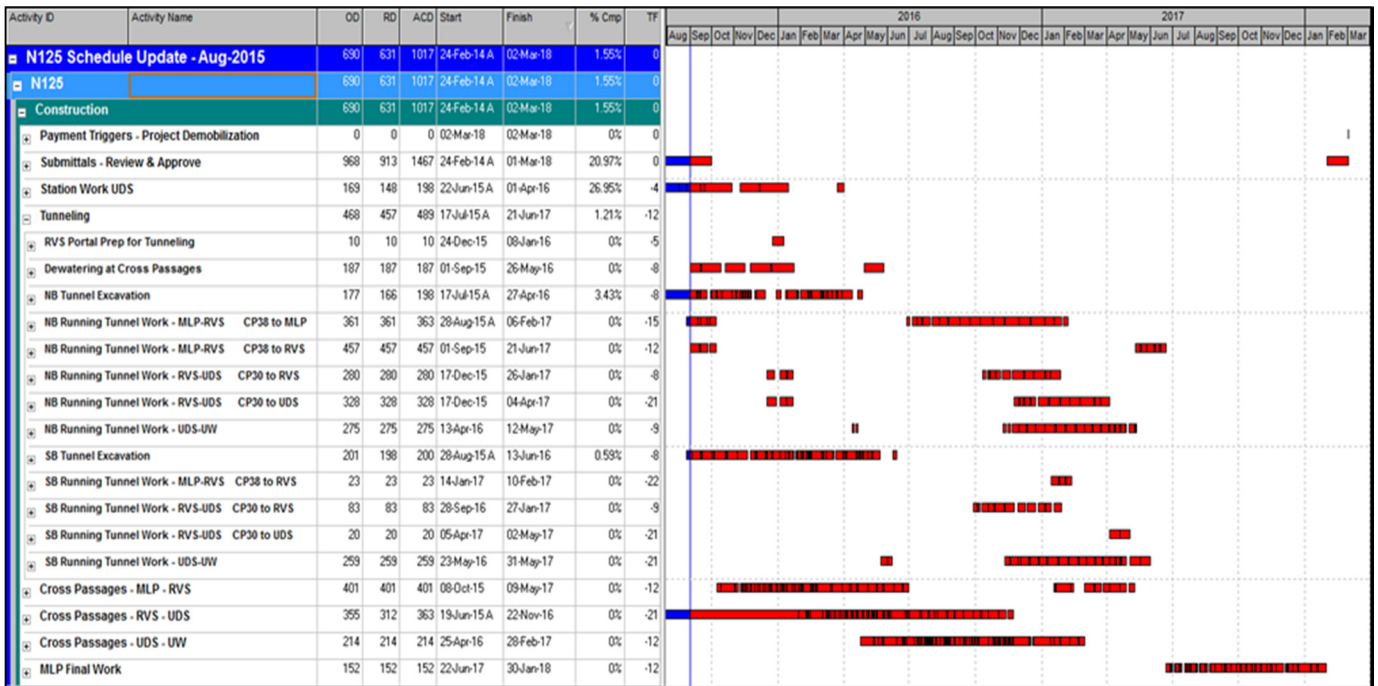
*Maple Leaf Portal (MLP)*- JCM has completed the Invert slab pours between MLP and RVS in the northbound bore. The next step will be pouring the Cross Passage approach slabs, expected to continue through the end of October.

*Roosevelt Station (RVS)* - Continued staging of tunnel liner segments.

*U-District Station (UDS)* -JCM is currently preparing the north headwall for the arrival of TBM No. 1, installing support utilities, and continuing the ground freezing.

### Schedule/Critical Path

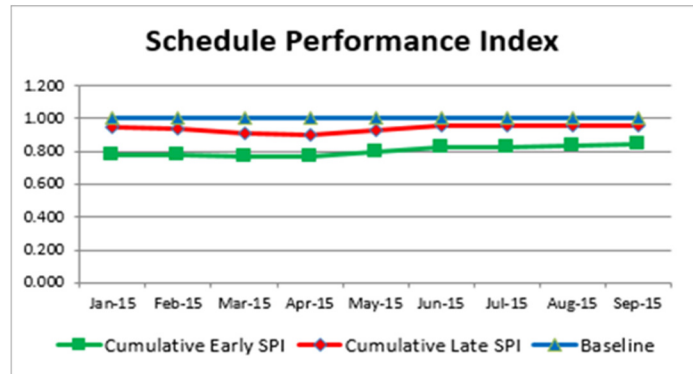
The longest path through the project likely remains in the Tunneling and Cross Passages. Poor production from both TBMs in September could make this work the driving factor. As noted above, JCM's second revision of their August recovery schedule made use of six- day/week work weeks in performing initial cross passage work. The application of the six- day weeks was not consistent and JCM did not provide a narrative explanation of this change in the work plan. Per the Contractor, a schedule update would be submitted by next period.





## Schedule Performance Index

The Contractor's estimated Performance Percent Complete is 66.5% with a Cost Percent Complete of 66.8% based on the September Pay Application. The SPI for September 2015 is 0.84, up from the 0.83 obtained in August. TBM production was lower than planned due to mechanical issues and soil conditions. Invert concrete in the northbound bore, cross passage ground freezing, and dewatering were areas of progress. The Project now has a 0.74 Cumulative Early SPI lifetime average and a 0.79 SPI since October 2014.



## Key Activities

### Current Period

#### Tunnels & Cross Passages (CPs)

- Continued installing CP31 and 32 ground freeze pipes.
- Began drilling of CP25 dewatering wells.
- Began site preparation for drilling dewatering wells at CP28.
- Began setting up traffic control for CP39 dewatering wells drilling.
- Completed installation of electrical conduits, drainage, anti-corrosion embeds, and invert concrete pour in NB tunnel from Ring 3 to Ring 1613.
- NB TBM No.1 total to-date progress of 2,512 rings.
- SB TBM No.2 total to-date progress of 1,811 rings.

#### U District Site (UDS)

- Completed installation and stressing angled restraint anchors for the TBM thrust frame slab.
- Vault energized and began transition of JCM internal power.

### Next Period

- Continue installation of ground freeze pipes at CP31 and CP 32.
- Continue installation of dewatering wells at CP25.
- Begin dewatering wells drilling at CP28.
- Begin weekend dewatering wells drilling/installation at WSDOT I-5 on-ramp site for CP39.
- Begin mobilization of CP43 shotcrete operation.
- Continue NB TBM No. 1 & 2 mining.

#### U District Site (UDS)

- Begin line drilling north headwall to remove headwall surface for NB TBM entry.
- Continue freezing operations at north and south headwalls. thrust restraint anchors for the NB tunnel launch area.

### Closely Monitored Issues

- JCM and Sound Transit are beginning work on a joint effort to plan and forward price ground freezing works for Cross Passages CP34-CP38, north of Roosevelt Station, with the aim of negotiating a Change Order covering all of the work prior to starting installation of the first freeze pipes.

## Cost Summary

Present Financial Status	Amount
<b>NI25 Contractor - JCM Northlink</b>	
Original Contract Value	\$440,321,000
Change Order Value	\$ 3,499,273
Current Contract Value	\$443,820,273
Total Actual Cost (Incurred to date)	\$296,427,944
Financial Percent Complete:	66.8%
Physical Percent Complete:	66.5%
Authorized Contingency	\$22,016,050
Contingency Drawdown	\$3,499,273
Contingency Index	4.18



Drilling angled tie-backs for the thrust frame slab at south UDS shaft.

# Link Light Rail Lynnwood Link Extension



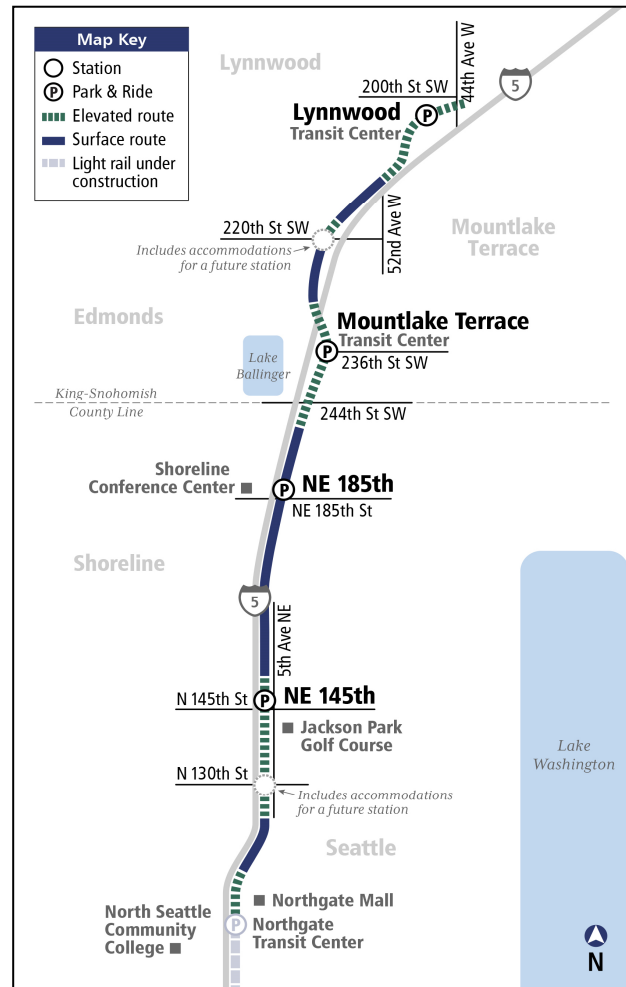
## Scope

The Lynnwood Link Extension Project entails the identification and evaluation of transit alternatives between Northgate in the City of Seattle to Lynnwood in Snohomish County with service in the cities of Shoreline and Mountlake Terrace. Consistent with FTA New Starts requirements, the project has undergone an Alternative Analysis and Environmental Scoping. Development of the Conceptual Engineering and Draft EIS concluded in 2013. Final EIS was published in April 2015.

In April 2015, the Sound Transit Board selected the light rail route and station locations. Trains will run along the I-5 corridor from Northgate to the Lynnwood Transit Center with stations at NE 145th Street, NE 185th Street and the Mountlake Transit Center at 236th Street SW. Construction to begin in 2018 and Revenue Service by 2023.

## Key Project Activities

- Phase 3 (Final EIS and Preliminary Engineering) began in December 2013.
- Published Final EIS in April 2015.
- ST Board selected project to be built in April 2015.
- FTA issued environmental Record of Decision (ROD) in July 2015.
- Submitted application to FTA for New Starts Engineering phase authority in September 2015.



Map of Lynnwood Link Extension route and stations.

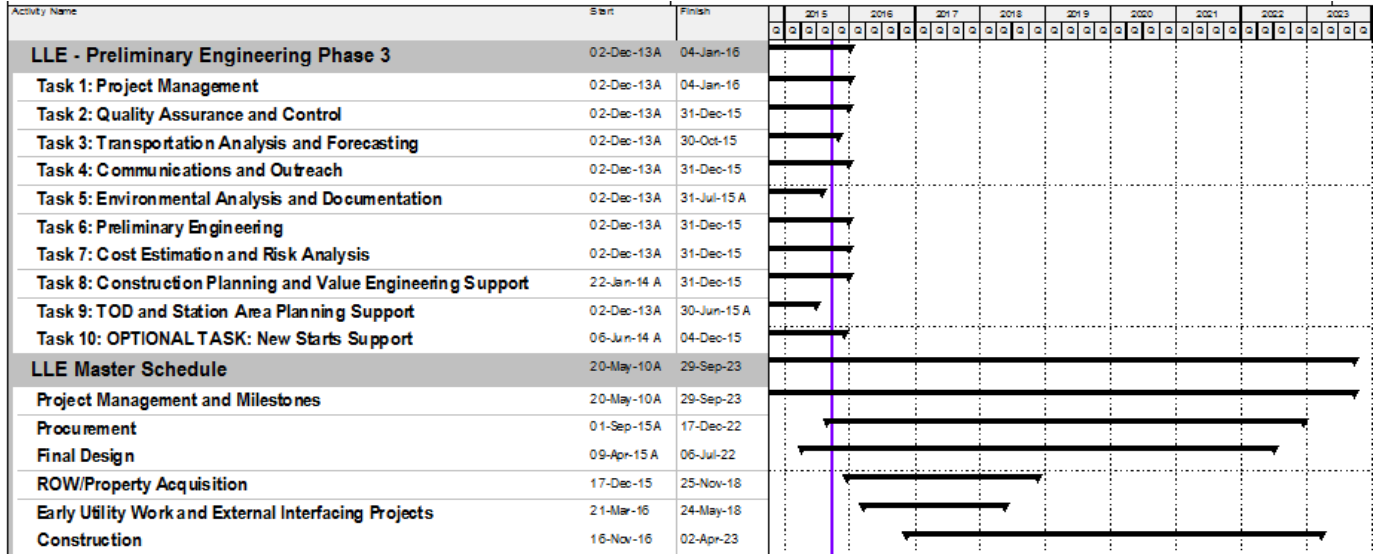
## Project Cost Summary

The Lynnwood Link Extension is currently funded through the completion of preliminary engineering (PE) and environmental documentation. Board approval for additional funding for final design and construction will be sought upon completion of PE. 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	\$11.7	\$6.8	\$6.6	\$4.9	\$11.7	\$0.0
Preliminary Engineering	\$44.3	\$40.2	\$37.3	\$4.1	\$44.3	\$0.0
3 <sup>rd</sup> Party Agreements	\$1.0	\$0.8	\$0.3	\$0.2	\$1.0	\$0.0
Right of Way	\$7.1	\$4.9	\$4.8	\$2.2	\$7.1	\$0.0
<b>Total</b>	<b>\$64.1</b>	<b>\$52.7</b>	<b>\$49.0</b>	<b>\$11.4</b>	<b>\$64.1</b>	<b>\$0.0</b>

## Project Schedule

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



## Sound Transit Board Actions

Board Action	Description	Date
	None to report.	

## Environmental

- Published Final EIS in April 2015.

## Community Outreach

- Attended and staffed the City of Shoreline 145th Corridor Study Open House and over 100 attendees were in the meeting regarding concepts to improve 145th for pedestrians, bike, traffic and future station access.
- Distributed flyers to neighboring properties to alert them of upcoming geotechnical borings.
- Posted new notices at the Lynnwood Transit Center to reflect follow up work in parking areas.
- Posted notices at the Mountlake Transit Center to alert riders of the upcoming geotech work.

## Quality Assurance Activities

### Activities

- Closure of Lynnwood Link Extension Draft Design Quality Audit Report.

### Issues

- None to report.

### Summary

Description	Sep 2015	Notes
No. of Audits Planned	0	None
No. of Audits Completed	1	Final Design PE
Reports in Progress	1	Final Design PE
No. of Audits Postponed	0	None

## Phase 3 Preliminary Engineering and Final EIS

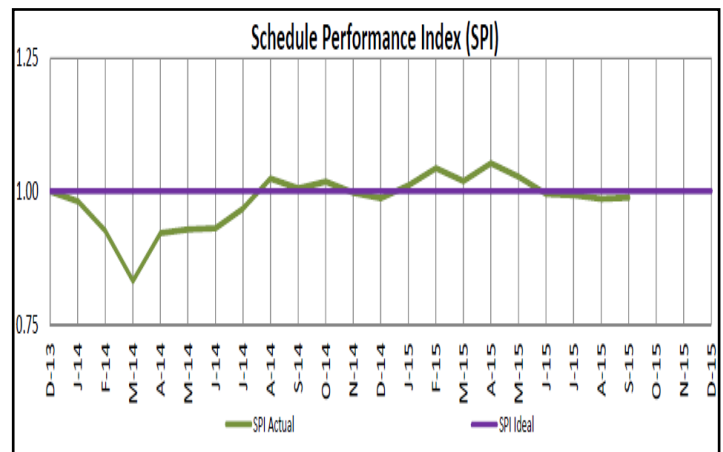
Sound Transit executed a contract amendment for Phase 3, Preliminary Engineering and Final EIS for Lynnwood Link, in December 2013.

### Phase 3 Key Activities

- Continued to advance the engineering of the preferred alternative and final PE submittal.
- Continued development of the work program to obtain FTA New Starts Engineering authority.

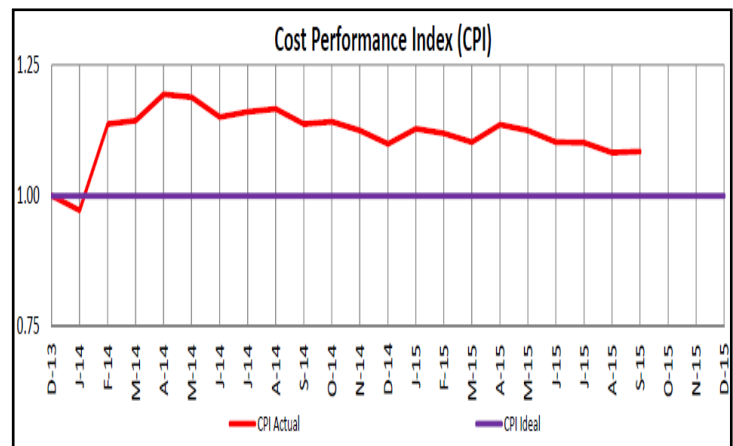
### Phase 3 Schedule Performance

The cumulative Schedule Performance Index (SPI) for the Phase 3 contract is 0.99 through September, indicating work performed to date is close to the amount originally planned.



### Phase 3 Cost Performance

\$36.2 M of the total contract amount, approximately 93%, has been spent through September. Phase 3 contract expenditures through September totaled \$19.8 M, approximately 88% of the Phase 3 contract total. The Phase 3 contract percent complete reported at the end of September is 95%, with an earned value of \$21.5 M. The cumulative Cost Performance Index (CPI) through September is 1.08; indicating costs are lower than the budget planned for work accomplished.



Phase 3 Performance	Previous Period	Current Period	Cumulative To-date
Amount Invoiced	\$19,312,866	\$460,708	\$19,773,574
% Spent	86%	2%	88%
Earned Value	\$20,901,430	\$550,895	\$21,452,325
% Complete	93%	2%	92%
<b>SPI</b>	<b>0.98</b>	<b>1.07</b>	<b>0.99</b>
<b>CPI</b>	<b>1.08</b>	<b>1.20</b>	<b>1.08</b>

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



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

**Scope:** The I-90 Two-Way Transit and HOV Operations (Stage 3) project will provide approximately four miles of the HOV lanes in each direction of the outer roadway between 80<sup>th</sup> Avenue South on Mercer Island and Rainier Avenue in Seattle. The project includes upgrades and retrofits to the fire, life, safety, and other systems in the Mount Baker and Mercer Island/First Hill tunnels. The project also includes remaining dowel bar retrofit work on the west side of Lake Washington, the installation of screening on the shared-use pathway on the I-90 floating bridge, and eastbound HOV access to Mercer Island. Following completion of this project, the center roadway will be closed to allow for the construction of East Link Extension.

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

### Major Contracts

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

## Key Project Activities

- Continued construction of detention tanks and drainage structures at both the Mercer Island and Mount Baker Ridge Tunnels. Installed supports and conduit for fire life safety devices. Continued submittals and procurement for new fans and SCADA implementation.
- Completed construction of the new egress walkway stairs in the Mount Baker Ridge Tunnel.
- Continued excavation and drainage work for the realignment of the Island Crest Way off ramp from eastbound I-90.



Demolition for ventilation improvements in the Mercer Island Tunnel.

### Project Cost Summary

Total Project Costs expended in September were \$7.98M. The following tables summarize the cost information for the I-90 Two-way Transit and HOV Operations (Stage 3) project. Tables in millions.

#### Cost Summary by Phase

Project Elements by Phase	Baseline Budget	Current Adopted Budget	Commitment to Date*	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
Administration	\$3.6	\$3.6	\$1.4	\$1.4	\$3.6	\$0.0
Preliminary Engineering	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5	\$0.0
Final Design	\$22.1	\$22.1	\$18.6	\$17.8	\$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	\$36.1	\$198.3	\$0.0
<b>Total</b>	<b>\$225.6</b>	<b>\$225.6</b>	<b>\$187.9</b>	<b>\$57.0</b>	<b>\$225.6</b>	<b>\$0.0</b>

#### Cost Summary by SCC

Project Elements by SCC	Baseline Budget	Current Adopted Budget	Commitment to Date*	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
40 Sitework & Special Conditions	\$180.6	\$180.6	\$166.3	\$36.1	\$180.6	\$0.0
80 Professional Services	\$26.3	\$26.3	\$21.6	\$20.8	\$26.3	\$0.0
90 Unallocated Contingency	\$18.7	\$18.7	\$0.0	\$0.0	\$18.7	\$0.0
<b>Project Total (SCC 10-90)</b>	<b>\$225.6</b>	<b>\$225.6</b>	<b>\$187.9</b>	<b>\$57.0</b>	<b>\$225.6</b>	<b>\$0.0</b>

### Cost Contingency Management

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

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

Contingency Status	Baseline		Current	
	Amount	% of Total	Amount	% of Work Remaining
Design Allowance	\$0.0	0.0%	\$0.0	0.0%
Allocated Contingency	\$17.0	7.5%	\$16.5	9.33%
Unallocated Contingency	\$18.7	8.3%	\$18.7	10.6%
<b>Total</b>	<b>\$35.7</b>	<b>15.8%</b>	<b>\$35.2</b>	<b>19.9%</b>

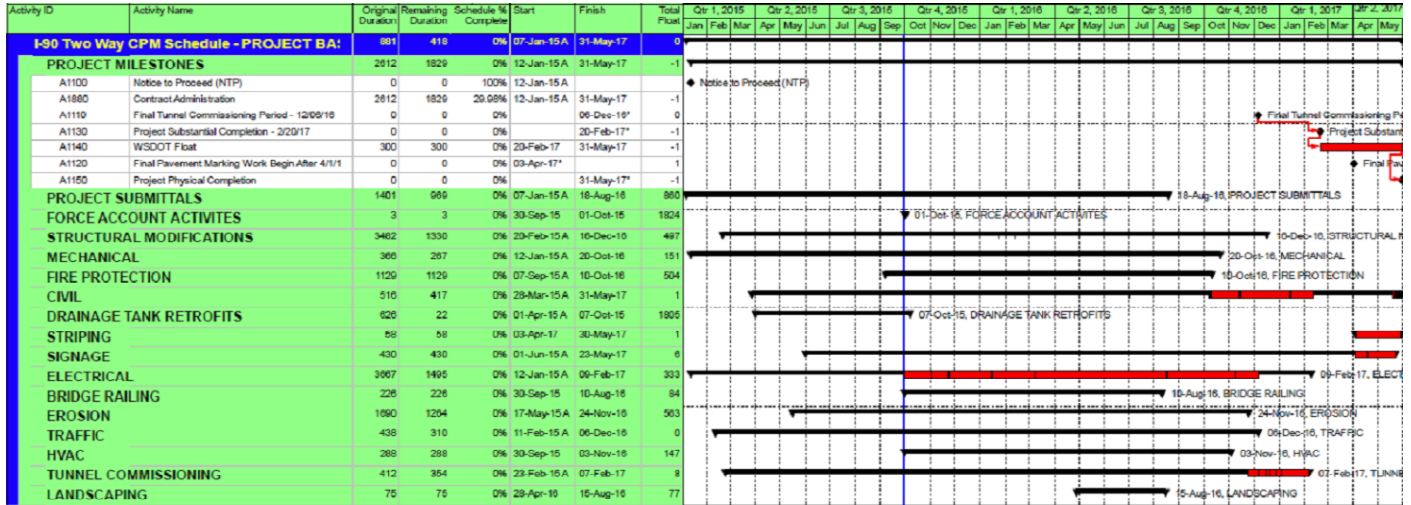
*Note: Table in millions. Contract does not carry Design Allowance.  
Contingency % of Work Remaining based on Contingency Remaining as a % Budget Remaining.*

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



## Project Schedule

Currently, construction progress is on-schedule; monthly updates are being submitted by the Contractor and will be used to update this table. Current project schedule and milestones are shown below.



Contract	Final Tunnel Commissioning		Substantial Completion		Final Pavement Marking		Physical Completion & Center Roadway Turnover	
	Baseline	Forecast / Actual	Baseline	Forecast / Actual	Baseline	Forecast / Actual	Baseline	Forecast / Actual
I-90 Two-Way Transit & HOV Operations Stage 3	12/6/2016	12/16/2016	2/20/2017	2/20/2017	4/3/2017	4/3/2017	5/31/2017	5/31/2017

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# Link Light Rail

## East Link Extension



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 Mercer Island via I-90, Bellevue and the Overlake area of Redmond, with ten new light rail stations. The alignment configuration includes at-grade, elevated, bridges, new and retrofitted tunnels.
- Stations:** Judkins Park (formerly Rainier), Mercer Island, South Bellevue, East Main, Bellevue Downtown, Wilburton (formerly Hospital), Spring District/120th, Bel-Red/130th, Overlake Village and Redmond Technology Center (RTC).
- Systems:** Signals, traction power, and communications (SCADA).
- Budget:** \$3.677 Billion Baseline Budget (Year of Expenditure Dollars)
- Phase:** Final Design transitioning to Construction
- Construction Starts:** 2015
- Service:** June 2023

### Key Project Activities

- Participated in the monthly ST/FTA/PMOC meeting.

#### Seattle to South Bellevue

- E130 Preconstruction services was approved at CCB.
- Sound Transit and the City of Mercer Island hosted the Listening Tour on Mercer Island.

#### South Bellevue to Redmond

- Continued working with HJH and CM/CMC to respond to RFIs on bid documents.
- Continued advancing various agreements with WSDOT, City of Redmond, Microsoft and King County Metro.
- CCB approved additional Final Design contingency and funding for Design Services During Construction (DSDC).



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

- E320: Continued preparing supplemental bidder qualifications and Special Conditions, discussions with City of Bellevue (COB) on Bellevue Way MOT, and reviewing private utility agreement scope.
- E330: Responded to RFIs, working with IT and Property Management on field office set-up options.
- E335: Preparing agreement and change order for COB pre-construction services and coordinating with the City on Spring District projects including staging, contract specifications review and working with GC/CM on updated schedule.
- E340: Continued Constructability Review of utilities along 136th Place and NE 20th Street, working with engineering on private utility work coordination, monitoring Olympic Pipeline relocation work.
- E360: Continued working with Microsoft on TCE requirements, facilitating Trail Lease process between WSDOT and City of Redmond.

## 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 \$13.1M was incurred this period.

Cost Summary by Phase

Project Phase	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
Administration	\$186.2	\$186.2	\$38.7	\$38.5	\$186.2	\$0.0
Preliminary Engineering	\$55.9	\$55.9	\$54.0	\$54.2	\$55.9	\$0.0
Final Design	\$283.0	\$283.0	\$180.5	\$144.9	\$283.0	\$0.0
Construction Services	\$257.5	\$257.5	\$6.9	\$3.6	\$257.5	\$0.0
3rd Party Agreements	\$52.2	\$52.2	\$8.9	\$5.0	\$52.2	\$0.0
Construction	\$2,544.3	\$2,544.3	\$22.9	\$15.2	\$2,544.3	\$0.0
Light Rail Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$298.2	\$298.2	\$120.3	\$106.8	\$298.2	\$0.0
<b>Total</b>	<b>\$3,677.2</b>	<b>\$3,677.2</b>	<b>\$432.2</b>	<b>\$368.2</b>	<b>\$3,677.2</b>	<b>\$0.0</b>

Cost Summary by SCC

SCC Element	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 Guideway & Track	\$744.6	\$744.6	\$0.0	\$0.0	\$744.6	\$0.0
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	\$22.9	\$15.2	\$808.5	\$0.0
50 Systems	\$353.8	\$353.8	\$0.0	\$0.0	\$353.8	\$0.0
<b>Construction Subtotal (10 - 50)</b>	<b>\$2,304.6</b>	<b>\$2,304.6</b>	<b>\$22.9</b>	<b>\$15.2</b>	<b>\$2,304.6</b>	<b>\$0.0</b>
60 Row, Land	\$288.5	\$288.5	\$120.3	\$106.8	\$288.5	\$0.0
70 Vehicles (non-revenue)	\$2.8	\$2.8	\$0.0	\$0.0	\$2.8	\$0.0
80 Professional Services	\$898.4	\$898.4	\$289.0	\$246.2	\$898.4	\$0.0
90 Unallocated Contingency	\$182.9	\$182.9	\$0.0	\$0.0	\$182.9	\$0.0
<b>Total (10 - 90)</b>	<b>\$3,677.2</b>	<b>\$3,677.2</b>	<b>\$432.2</b>	<b>\$368.2</b>	<b>\$3,677.2</b>	<b>\$0.0</b>

## Risk and Contingency Management

### Contingency Status

Sound Transit has completed a draft Risk and Contingency Management Plan (RCMP) for East Link, and is currently addressing review comments from the Project Management Oversight Consultant (PMOC). The project's baseline budget, which was approved by the Sound Transit Board in April 2015, contains a total of \$795.9M Total Contingency. This period, total contingency is reduced by \$0.2M, when compared to the previous period, to a new total amount of \$795.6M. Total Contingency is made up of the following:

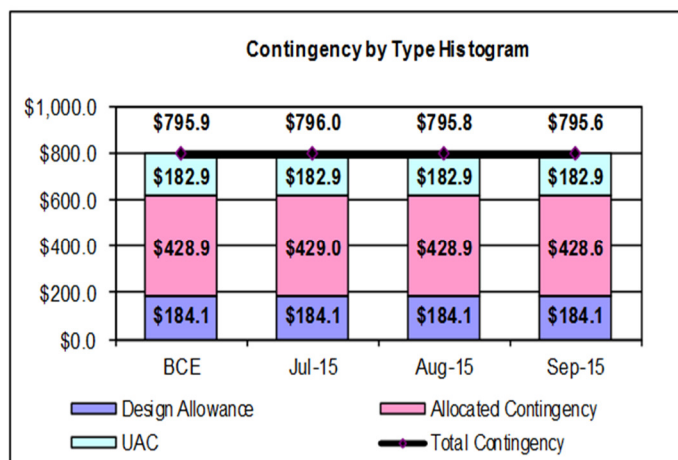
**Design Allowance** is used to account for scope that could not be quantified at the time of the cost estimate. The total amount of design allowance in the baseline cost estimate is \$184.1M, and has remained unchanged. However, it is expected to be reduced in the next coming periods as cost estimates for design packages are progressed to 100% level.

**Allocated Contingency** is used to address risks, complexity and unforeseen conditions during the execution of work. The total amount of allocated contingency is drawn down by \$0.2M due to executed change orders on consultant design contracts for the environmental re-evaluation work and for the Seattle to South Bellevue segment. Total allocated contingency balance is \$428.6M.

**Unallocated Contingency** is used to address general project-wide cost risks and uncertainties. The total amount of unallocated contingency in the baseline cost estimate is \$182.9M, and has remained unchanged.

Contingency Status	BCE		Current Status	
	Amount	% of Total Budget	Remaining Amount	% of Work Remaining
Design Allowance	\$184.1	5.0%	\$184.1	5.6%
Allocated Contingency	\$428.9	11.7%	\$428.6	13.0%
Unallocated Contingency	\$182.9	5.0%	\$182.9	5.5%
<b>Total:</b>	<b>\$795.9</b>	<b>21.6%</b>	<b>\$795.6</b>	<b>24.0%</b>

Dollar figures on this page are displayed in millions.



## Risk Management

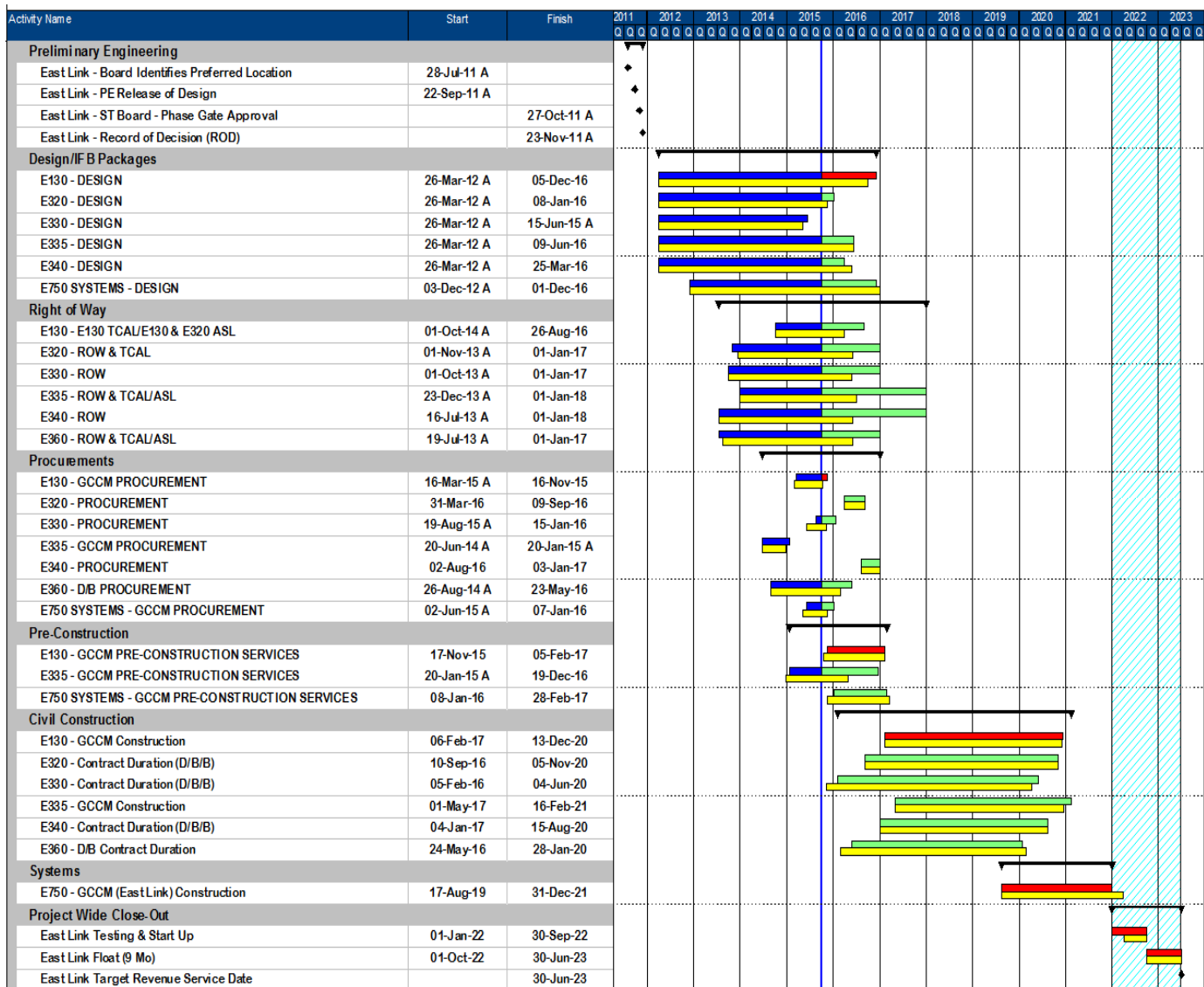
The RCMP established a risk management and oversight process for identifying, assessing, and monitoring risks and develops risk reduction/mitigation plans. It provides a tool for the project team to proactively manage risks on the project. It is Sound Transit's responsibility for continuously monitoring project status and associated risks, taking mitigation actions for known risks identified on the risk register, and effectively responding in a timely manner to those risks that pose a significant impact to the project cost or schedule forecast.

This period, Sound Transit has begun the next quarterly risks review workshops, 3rd QTR 2015. Some of the workshops were attended by PMOC. Additional work is being done during this quarterly review to capture the risk mitigation strategies and plans to manage the top risks on the project.

## Project Schedule

The East Link Extension is in Final Design and transitioning to Construction. Sound Transit Board baselined East Link on April 23, 2015. The first early construction contract, Early Utilities for E340 (Bel Red), started May 2015. Revenue Service forecasted June 30, 2023. East Link contract procurements continues:

- E130 GC/CM (I-90 Heavy Civil), E750 GCCM (East Link Systems) and I-90 Segment Construction Management Consultant (CMC) currently in procurement, scheduled to be awarded 4th QTR 2015.
- E360 D/B (SR520 to Redmond Technology Center) currently in procurement and final RFP release is planned for 3rd QTR 2015, and scheduled to be awarded 2nd QTR 2016.
- E330 (Downtown Bellevue Tunnel) currently in procurement, scheduled to be awarded 1st QTR 2016.
- Systems Construction Management Consultant (CMC) procurements scheduled to start 3rd QTR 2015 with an award in 1st QTR 2016.
- E320 (South Bellevue) procurement scheduled to start 1st QTR 2016 with an award in 3rd QTR 2016.



\*Note: Change From Last Month: This schedule represents East Link Schedule Progress. Baseline Schedule is represented by yellow bar.

### 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 budget is being closely monitored. Efforts are also underway to prioritize acquisitions by contract package to help ensure timely availability of property.

East Link Extension Property Acquisition Status							
Line Section	Board Approved	Offers Made	Signed Agreements	Possession and Use	Closings to date	Baseline Relocations Required	Relocations Completed
Seattle to S. Bellevue	2	1	0	0	0	0	0
S. Bellevue to OTC	244	146	4	6	78	230	125
Bellevue Mile	1	1	1	0	1	0	0
<b>Total</b>	<b>247</b>	<b>148</b>	<b>5</b>	<b>6</b>	<b>79</b>	<b>230</b>	<b>125</b>

#### Seattle to S. Bellevue

*E130 IDS Rail Connection & IDS & I-90 Upgrades* - One offer made.

*E340 Bel-Red* - Two offers made.

*E360 SR 520 to OTC* – Four offers made; four additional parcels vacated.

#### S. Bellevue to OTC parcels

*E320 S. Bellevue*– Five offers made, Possession and Use (P & U) obtained on one parcel and one parcel closed.

*E330 Downtown Bellevue* – P & U obtained on two parcels; two parcels closed and one vacated.

*E335* – Board approved five parcels, three offers made and one vacated.

### Quality Assurance Activities

#### Activities

- *E335*- MRB dispositioned as Acceptable one “Major” RFD regarding aerial guideway ODE performance based column design; approved one “Minor” RFD regarding colored canopy glazing.
- *E130*- MRB dispositioned as Acceptable one “Major” RFD regarding glass fiber reinforced polymer dowels for reinforcement.

#### Issues

- None to report.

Description	Sep 2015	Notes
No. of Audits Planned	1	E335 90% Design Submittal
No. of Audits Completed	0	None
Reports in Progress	1	E335 90% Design Submittal
No. of Audits Postponed	0	None

## Environmental

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

## Sound Transit Board Actions

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

## Community Outreach

- Hosted a public meeting in collaboration with the City of Mercer Island, King County Metro and WSDOT as the first part of the Mercer Island Listening Tour and approximately 200 people attended including WDOT Secretary of Transportation Lynn Peterson. Also hosted Listening Tour drop-in sessions at end of September.
- Uploaded meeting materials to the Mercer Island Listening Tour website and also included an online comment form.
- Board meeting recap briefing with Lake Bellevue resident: signal bungalow and access easement.
- Issued an invitation to the Deaf-Blink Services to the upcoming Citizen's Accessibility Advisory Committee to discuss accessibility at the Judkins Park Station.
- Coordinated with Microsoft to schedule a tour of Connector Operations Building.
- Monitored Olympic Pipeline advanced relocation at NE Spring Blvd. and 136th Place NE.



*There were approximately 200 attendees at the Mercer Island Listening Tour.*



# Link Light Rail

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

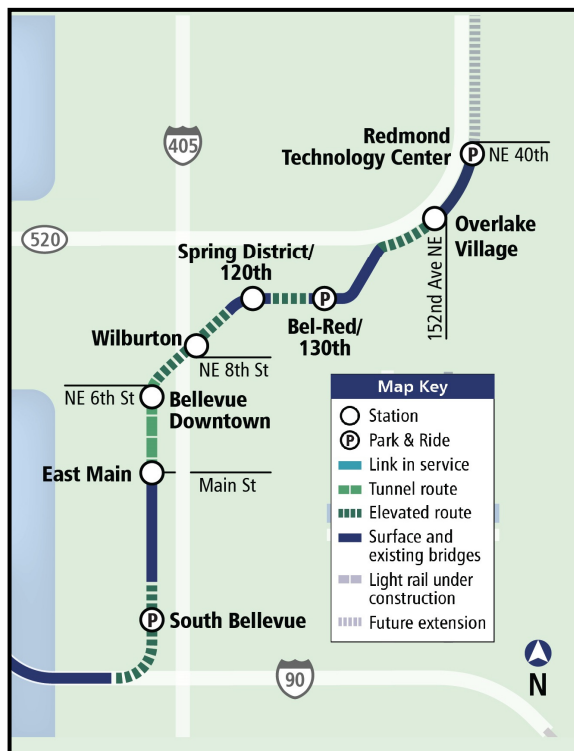


### Final Design Scope

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 being 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

- Prepared final draft Design Documentation Package documents for WSDOT approvals.
- Provided technical support and recommendations on TCE issues and Sound Transit real estate.

#### E330 Downtown Bellevue

- Design of the E330 contract package is complete.

#### E335 Downtown Bellevue to Spring District

- Appropriate pedestrian-only grade crossing protection at the East Main Station
- Evaluated impacts of the LRT guideway structure over I-405 on WSDOT CTV sight lines.
- Advancing right-of-way / temporary construction easement negotiations.

#### E340 Bel-Red

- Finalized grade crossing diagnostic forms for 130th, 132nd, 136th/Spring, and NE 20th grade crossings.
- Package is on hold; no design work was performed.

#### E360 SR 520 to Redmond Technology Center

- Preparation of procurement documents for the E360 contract package is complete.

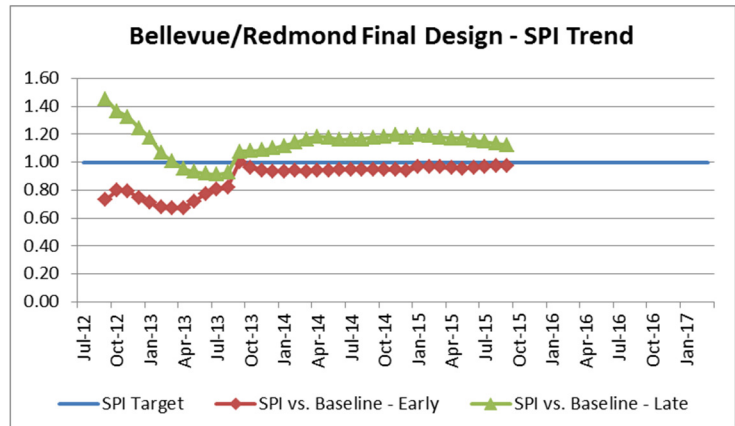
## Final Design Schedule

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

Contract Packages	60% Submittal		90% Submittal		100% Submittal		IFB Submittal	
	Baseline*	Forecast/Actual	Baseline*	Forecast/Actual	Baseline*	Forecast/Actual	Baseline*	Forecast/Actual
E320 So. Bellevue	12/6/2013	12/6/2013	9/19/2014	9/19/2014	4/3/2015	4/3/2015	8/14/2015	1/08/2015
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	5/11/2015
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	6/13/2016
E340 Bel-Red	7/15/2013	7/15/2013	4/04/2014	7/21/2014	12/8/2014	12/8/2014	5/23/2016	3/27/2016
	Draft RFP Submittal		Final RFP Submittal		*Baseline schedule dates revised to reflect final contract packaging and construction delivery methods.			
	Baseline*	Forecast/Actual	Baseline*	Forecast/Actual				
E360 SR-520 to RTC	2/18/2014	2/18/2014	1/19/2015	8/14/2015				

## Final Design Schedule Performance

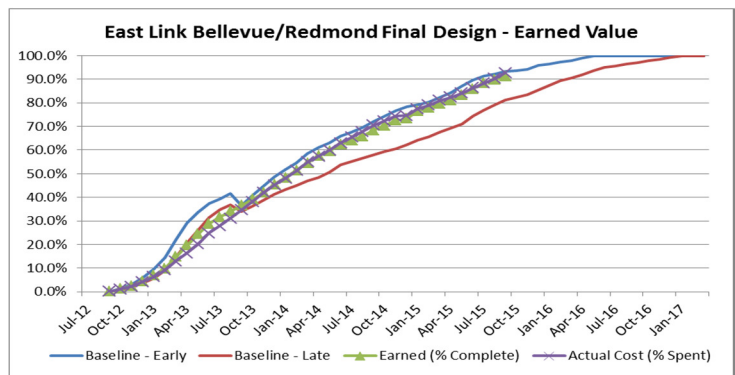
Excluding Other Direct Expenses (ODC's), Profits and DSDC, the Schedule Performance Index (SPI) reported this period is at 0.98 when measuring against the Early Schedule Baseline, and 1.13 when measuring against the Late Schedule Baseline. Execution of change orders impacted the SPIs.



## Final Design Cost Performance

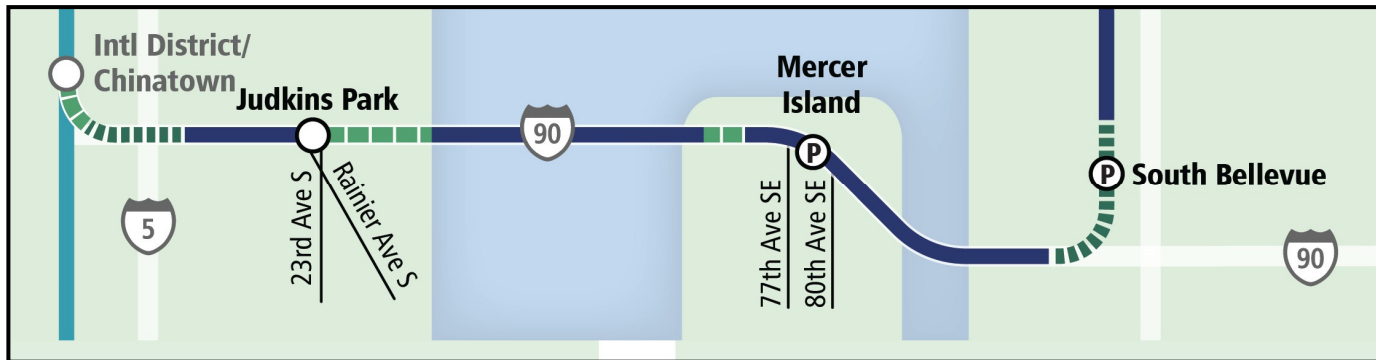
Labor cost (for Phase 2 Final Design) to-date is \$73.9M or 92.7% of the budget. Progress earned through the same period is approximately 91.2% or \$72.7M of earned value. This yields a cumulative Cost Performance Index (CPI) of 0.98, which indicates approximately on-budget cost efficiency of the current contract budget, including executed change orders. There are upward cost pressures in several areas due to refinements to the design and potentially extension of the contract time. Estimate At Completion (EAC) based on EV data, which does not account for potential change orders, is approximately equal to current budget.

However, there are potential change orders for design changes related to the GC/CM contract VEs, City of Bellevue code and schedule extension, which adds up to approximately \$6M. Staff is reviewing these potential changes and in the process of requesting additional contingency from the Sound Transit Board.



Performance	Previous Period	Current Period	Cumulative To Date
Labor Amt. Invoiced	\$71,995,559	\$1,903,202	\$73,898,761
% Spent	90.3%	2.4%	92.7%
Earned Value	\$71,622,428	\$1,139,933	\$72,762,361
% Complete	89.8%	1.4%	91.2%
CPI	0.99	0.60	0.98

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



Map of International District Station to South Bellevue.

## Final Design Scope

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

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

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

## Final Design Key Activities

### I-90 Corridor

- Presented to the Eastside Transportation Partnership on the East Link Extension and ST3 update.
- Presented with WSDOT to the Mercer Island Council regarding R8A and East Link Light Rail.

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

- *Fixed Structures*: Continued Level 2 Analysis for East and West Approach.
- *Judkins Station (Rainier Station)*: Continued advancing re-design of west entrance.

### Third Party, Agreements, & Permits

- Plans for the Mercer Island Listening Tour were adjusted to incorporate MI input. Preparing to brief Mercer Island City Council on September 8.
- IRT Issue V, Anchor Cable replacement, was resolved between WSDOT and Sound Transit; IRT Issue H was approved by the FHWA. 17 IRT Issues are now closed between WSDOT and FHWA, and 16 IRT Issues have received FHWA approval to-date.
- Sound Transit and the City of Mercer Island hosted the Listening Tour on Mercer Island.
- Sound Transit briefed the CAAC on East Link, Judkin's Park Station and the track crossing.

### Construction & Construction Management

- R8A Stage 3A – Contract work currently suspended until the sign bridge is delivered; this is the only remaining work left to reach substantial completion.

### Final Design Schedule

Contract Packages	60% Submittal		90% Submittal		100% Submittal		IFB Submittal	
	Baseline	Actual	Baseline	Forecast/ Actual	Baseline	Forecast/ Actual	Baseline	Forecast/ Actual
EI30 – Rail connection & IDS upgrades; Seismic retrofits; and I-90 Civil/Arch./Elect. & Mech. Upgrades	4/4/2014	7/11/2014A	2nd QTR 2016	2nd QTR 2016	4th QTR 2016	4th QTR 2016	TBD	TBD

### Final Design Schedule Performance

Schedule information was not reported by the consultant for the current reporting period, due to a moratorium on non-critical work requested by ST. A Cost To Complete has been negotiated and accepted; baseline milestones will be revised by an administrative order. The revised schedule will be submitted in October.

### Final Design Cost Performance

Cost Performance data was not submitted by the consultant for the current reporting period. The current budget includes \$7.9 M in executed change orders. Including professional fee, total Labor and Other Direct Costs for Final Design to-date is \$33.4 million, or 93.26% of the current authorized budget. A revised budget to complete final design was negotiated and accepted; a change order for \$17.9M for budget to complete Final Design (the negotiated Cost to Complete) was executed on September 24, 2015. Cost performance for all remaining work will be submitted by the consultant and monitored to ensure project completion in a cost-effective and successful manner.

## 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

- WSDOT approved IRT Issue U, Method for Identifying Stray Current Failure and Response/ Repair.
- FHWA approved IRT Issue F, ST adoption of North Link/ Airport Link Stray Current Mitigation Design Criteria for Homer M. Hadley Floating Bridge Installation.
- Continued project- wide Systems GC/CM procurement (E750).

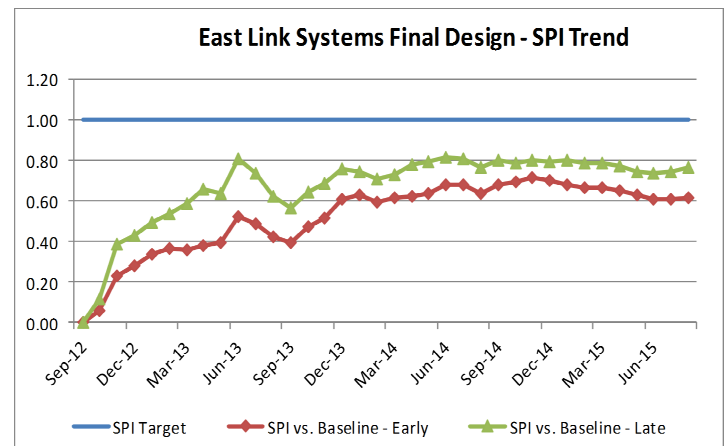
## Final Design Schedule

The schedule and budget were re-allocated this period to address the significant schedule changes relating to the 90%, 100%, and IFB submittals.

	60% Submittal		90% Submittal		100% Submittal		IFB Submittal	
	Baseline	Actual	Baseline	Forecast/ Actual	Baseline	Forecast/ Actual	Baseline	Forecast/ Actual
E750- LRT Systems	10/24/2014	10/24/2014 Actual	2/1/2016	02/1/2016	8/1/2016	8/1/2016	12/1/2016	12/12/2016

## Final Design Schedule Performance

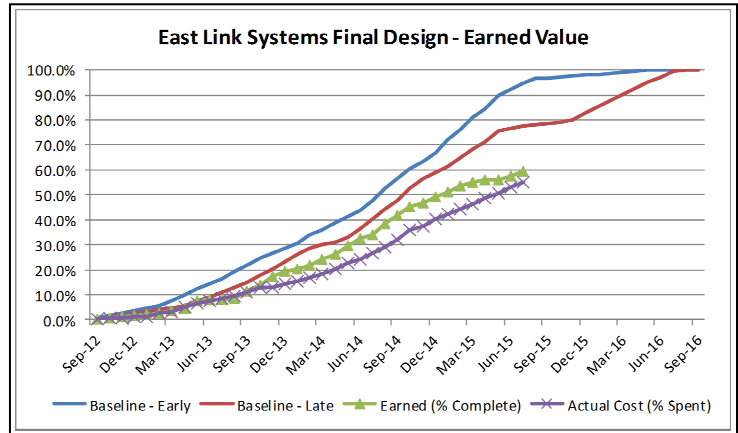
In August 2015, the Project is 58.8% complete resulting in an Earned Value of \$10.4M. The project has an early SPI of 0.68 and a late SPI of 0.92 which indicates that the contract is behind schedule. Revisions to the civil design schedules resulted in a delay to the systems deliverables.





## Final Design Cost Performance

Through the end of August 2015 the project has spent approximately 54.6% of the budget resulting in CPI of 1.08. The current Estimate at Completion (EAC) is expected to be less than the current budget of \$17.9M.



Performance	Previous Period	Current Period	Cumulative To Date
Labor Amt. Invoiced	\$9,250,324	\$372,271	\$9,622,595
% Spent	52.2%	2.1%	54.3%
Earned Value	\$10,003,354	\$354,446	\$10,357,800
% Complete	56.8%	2.0%	58.8%
<b>CPI</b>	<b>1.1</b>	<b>1.0</b>	<b>1.1</b>

## Major East Link Construction Contract Packages

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

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

*Status: In construction, 98% complete*

**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: Procurement underway*

**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: Advertise Fall 2015*

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

*Status: Procurement underway– Bids opening scheduled for October 27, 2015.*

**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: Preconstruction Services contract awarded*

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

*Status: Advertise 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: Procurement underway*

**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: Procurement Underway*

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# Link Light Rail

## S. 200th Link Extension

### Scope

**Limits:** South 200th Link Extension consists of 1.6-mile extension of light rail from the SeaTac/Airport Station to South 200th Street.

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

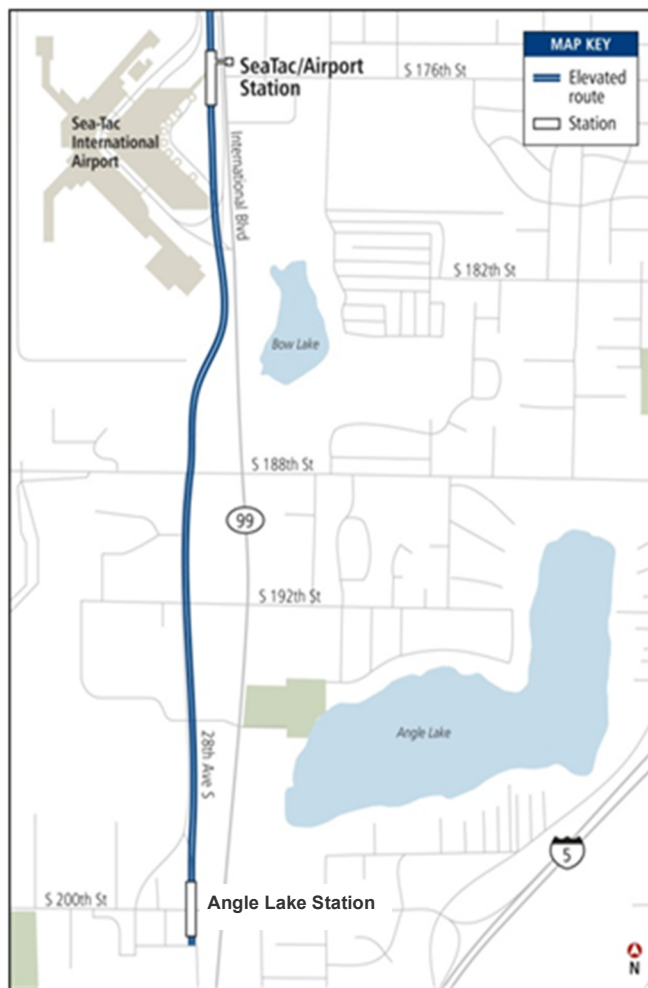
**Station:** Angle Lake Station is located at South 200<sup>th</sup> Street.

**Systems:** Signals, track electrification, and SCADA communications

**Budget:** \$383.2 Million

**Service:** September 2016

**Phase:** Final Design and Construction



Map of S. 200th Link Extension.

### Key Project Activities

- *Design Build Guideway and Station (S440):* Major construction activities continue for Station and Plaza; trackwork, OCS poles, handrail, guardrail, and drainage installations on the guideway. Coordinating with City of SeaTac on detention facility and electrical permit issues. Need Electrical ductbank easement from Port of Seattle for Signal House bungalow.
- *Design Build Parking Garage (S445):* IFC Architectural design package is nearly done. Construction continues with garage structure of elevated floors and revised BMS system design continues.
- *Roadway Improvements (S447):* Design issues are impeding Contractor performance.

- *Military Road/South 200th (S446):* WSDOT is reviewing 100% submittal. WSDOT's bid ad date is currently set for January 2016. This work to be managed by WSDOT and is not necessary to complete prior to the start of revenue service.

### Closely Monitored Issues

- None this period.

## Project Cost Summary

The S. 200th Link Extension project cost is summarized in two cost tables. The first table is in accordance with Sound Transit's Work Breakdown Structure (WBS), and in the second table, cost is summarized in accordance to the FTA's Standard Cost Categories (SCC) format. (Both tables' figures in millions).

WBS Phase Elements	Baseline Budget	Current Adopted Budget	Commitment to Date*	Incurred to Date	Est. Final Cost (EFC)	Adopted Budget vs. EFC
Administration	\$16.1	\$15.9	\$11.8	\$11.5	\$15.9	\$0.0
Preliminary Engineering	\$5.9	\$5.7	\$5.7	\$5.7	\$5.7	\$0.0
Final Design	\$20.0	\$9.9	\$8.4	\$8.7	\$9.9	\$0.0
Construction Services	\$15.1	\$17.3	\$15.0	\$9.9	\$17.1	\$0.2
3rd Party Agreements	\$6.9	\$7.1	\$5.7	\$3.3	\$7.1	\$0.0
Construction	\$275.7	\$283.8	\$225.9	\$183.7	\$263.5	\$20.3
Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
ROW	\$43.5	\$43.5	\$42.5	\$37.6	\$43.5	\$0.0
<b>Capital Total</b>	<b>\$383.2</b>	<b>\$383.2</b>	<b>\$315.0</b>	<b>\$260.3</b>	<b>\$362.7</b>	<b>\$20.5</b>
Finance Cost	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>Project Total</b>	<b>\$383.2</b>	<b>\$383.2</b>	<b>\$315.0</b>	<b>\$260.3</b>	<b>\$362.7</b>	<b>\$20.5</b>

The overall project Estimated Final Cost (EFC) for this period continues to reflect \$362.7M. This period incurred cost increased approximately \$7.5M, of this \$6.6M was for construction activities. S440 Guideway & Station Design Build contract was \$3.5M, S445 Parking Garage Design Build contract was \$2M, S447 was \$0.6M, and Startup was \$0.2M. Construction services were \$0.4M and the remaining expenditures for \$0.5M were related to ROW, Third Party and administrative charges.

The EFC grouped by SCC is consistent at \$362.7M and remains unchanged from last month, indicating the work remaining can be achieved under the adopted budget.

Project Elements by SCC	Baseline Budget	Current Adopted Budget	Commitment to Date*	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 Guideway & Track Elements	\$144.8	\$133.0	\$98.5	\$85.8	\$118.1	\$14.9
20 Stations	\$46.4	\$51.3	\$38.9	\$27.7	\$37.9	\$13.5
30 Support Facilities: Yards, Shops	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
40 Sitework & Special Conditions	\$34.6	\$51.1	\$49.5	\$34.6	\$53.3	-\$2.2
50 Systems	\$30.8	\$19.9	\$19.2	\$16.6	\$20.1	-\$0.2
<b>Construction Subtotal (SCC 10-50)</b>	<b>\$256.6</b>	<b>\$255.3</b>	<b>\$206.1</b>	<b>\$164.5</b>	<b>\$229.4</b>	<b>\$26.0</b>
60 Row, Land, Existing Improvements	\$43.5	\$43.5	\$42.5	\$37.6	\$43.5	\$0.0
70 Vehicles	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
80 Professional Services	\$64.1	\$70.5	\$66.3	\$58.2	\$76.4	-\$5.9
90 Unallocated Contingency	\$19.0	\$13.8	\$0.0	\$0.0	\$13.4	\$0.5
<b>Project Total (SCC 10-90)</b>	<b>\$383.2</b>	<b>\$383.2</b>	<b>\$315.0</b>	<b>\$260.3</b>	<b>\$362.7</b>	<b>\$20.5</b>
100 Finance Cost	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>Project Total (SCC 10-90)</b>	<b>\$383.2</b>	<b>\$383.2</b>	<b>\$315.0</b>	<b>\$260.3</b>	<b>\$362.7</b>	<b>\$20.5</b>



## Cost Contingency Management

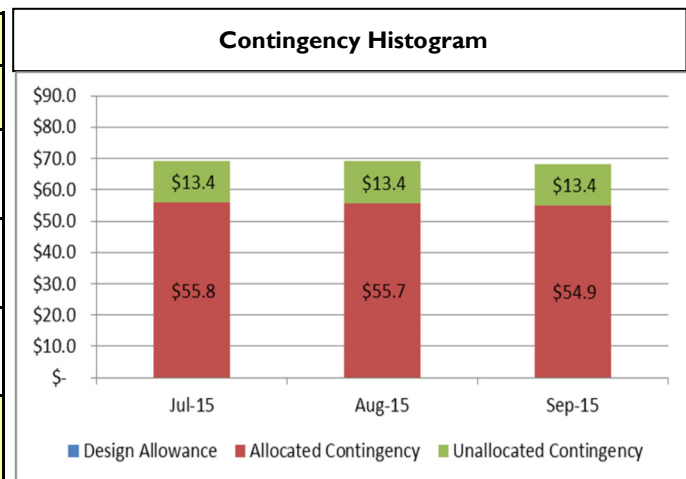
The overall project contingency balance as of July is \$69.1M.

**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 \$54.9M, a decrease of \$0.8M from the previous period. The reduction was primarily due to minor change orders from S440 and S447 contract.

**Unallocated Contingency (UAC):** This period the UAC remained unchanged from the last period at \$13.4M.

Contingency Status	Baseline		Current	
	Amount	% of Total	Amount	% of Work Remaining
Design Allowance	\$26.7	7.0%	\$ -	0.0%
Allocated Contingency	\$29.8	8.0%	\$54.9	53.6%
Unallocated Contingency	\$19.0	5.0%	\$13.4	13.1%
<b>Total</b>	<b>\$75.5</b>	<b>20.0%</b>	<b>\$68.3</b>	<b>66.7%</b>



## Risk Management

The South 200th Link Extension Risk Management Plan (RMP) established a risk management and oversight process for assessing and monitoring risks to determine how risks have been reduced or mitigated. RMP captures scope growth, schedule delay, and cost growth risks that could arise during any phase of the project and potentially affect parts of the project scope. On a quarterly basis, the South 200th Link Extension team reviews and updates risk to reflect conditions. Below is a list of the top five major risk review items identified through 3rd QTR 2015:

- *Construction:* Delays due to City of SeaTac electrical inspections (S440).
- *Third Party:* City of SeaTac permit approval of crucial elements of work at times is a hindrance.
- *Construction:* Delays due to L&I inspections and Certificate of Occupancy for elevators (S440 and S445).
- *Construction:* Contract documents with design errors could impact cost and schedule (S447).
- *Construction:* Utility damage may impact Alaska Airlines (S447).

## Project Schedule

S440 Guideway is complete and the System Contractor continues to install OCS poles. S445 DB Parking Garage Design/Builder continues construction of the parking garage structure. The S. 200th Master Schedule has been tied to the Rail Activation Schedule but commissioning activities in the S440 schedule require more detail and logic to be tied properly. The S. 200th Link Extension anticipated service launch is September 2016. (See Project Schedule Summary

Activity/Name	Start	Finish	2015				2016				2017	
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
<b>Sound Transit</b>	28-Sep-12 A	19-Jan-17										
University Link (UL)	17-Oct-15	30-Sep-16										
Rail Activation Schedule	17-Oct-15	30-Sep-16										
Pre-Revenue Service	24-May-16	30-Sep-16										
Pre-Revenue Service - S. 200th Link	24-May-16	30-Sep-16										
Pre-Revenue Service - S. 200th	24-May-16	23-Jun-16										
Revenue Service - S. 200th	24-Jun-16	30-Sep-16										
Task Group 4.0 - Rail Operations	25-May-16	23-Jun-16										
4.6 - Rail Operations - Simulate Revenue Service	25-May-16	23-Jun-16										
S200th	25-May-16	23-Jun-16										
S200th Simulate Revenue Service	25-May-16	23-Jun-16										
S200th Pre-Revenue Service Pilot	23-Jun-16	23-Jun-16										
Task Group 7.0 - Safety & Security	17-Oct-15	09-Jun-16										
7.2 - Safety & Security - Certification	17-Oct-15	09-Jun-16										
S. 200th Safety Certification	17-Oct-15	09-Jun-16										
<b>LRT Extension - South</b>	28-Sep-12 A	19-Jan-17										
S440 - Guideway and Station - Design/Build	28-Sep-12 A	30-May-16										
SL 443 - SCADA (U830)	18-Feb-16	18-Mar-16										
SL 446 - S. 200th/I-5 Interchange Impr (WSDOT)	01-Nov-12 A	19-Jan-17										
S447 - Station Area Roadway Improvements	21-Jan-15 A	17-Mar-16										



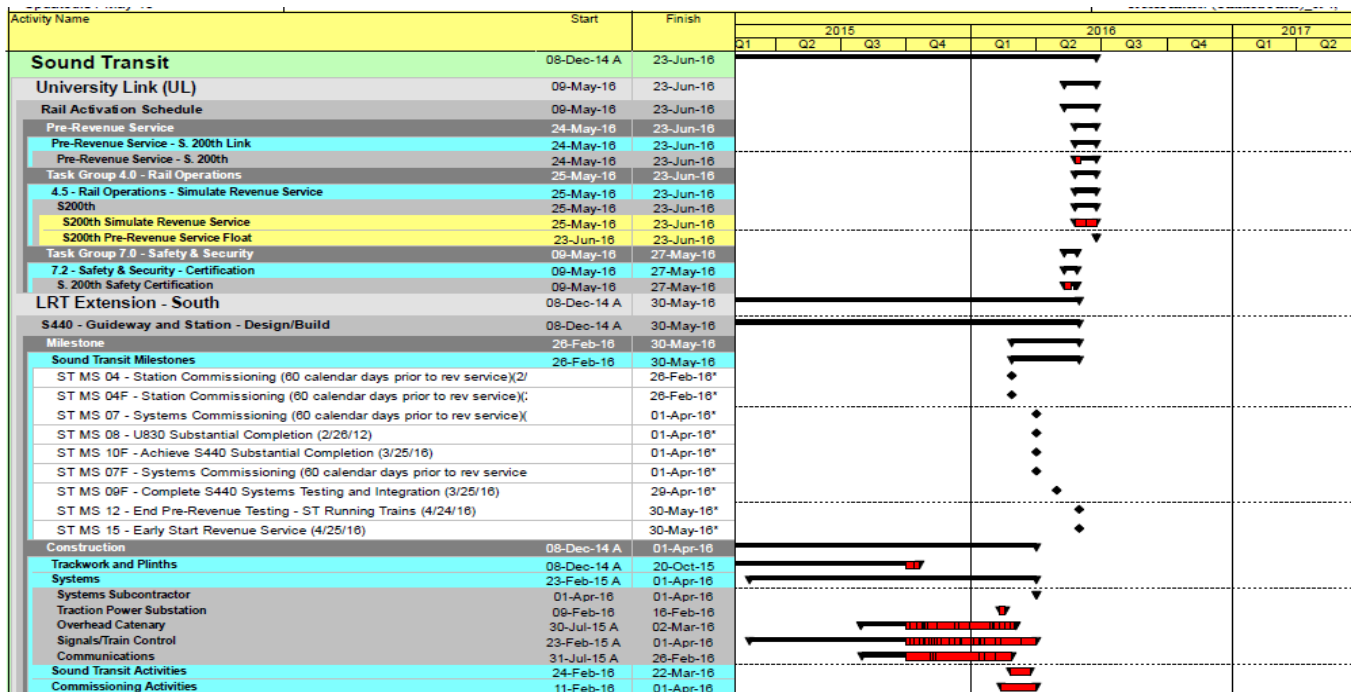
Cantilever arm installation on the guideway.



Prepping 28th Avenue South for paving activities.

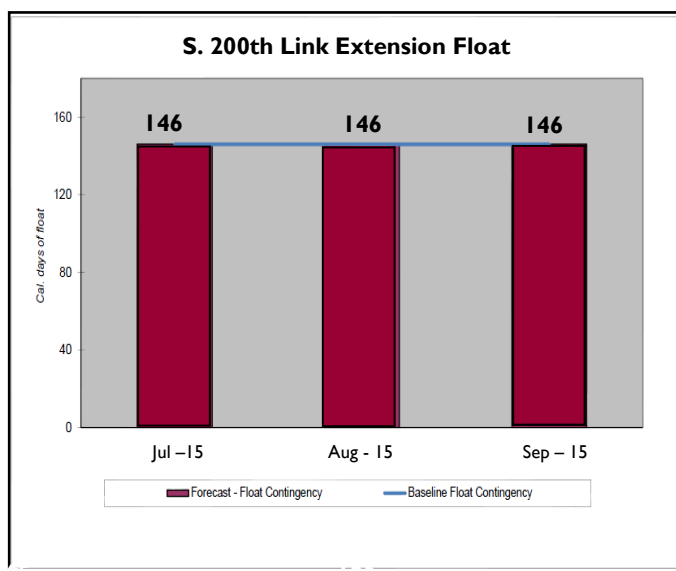
## Critical Path Analysis

The critical path this period runs through procurement of OCS and Communications equipment through installation and commissioning and system wide testing and integration and Pre-Revenue Service. Near critical path activities include the completion of trackwork and procurement of signal equipment.



## Critical Path Float

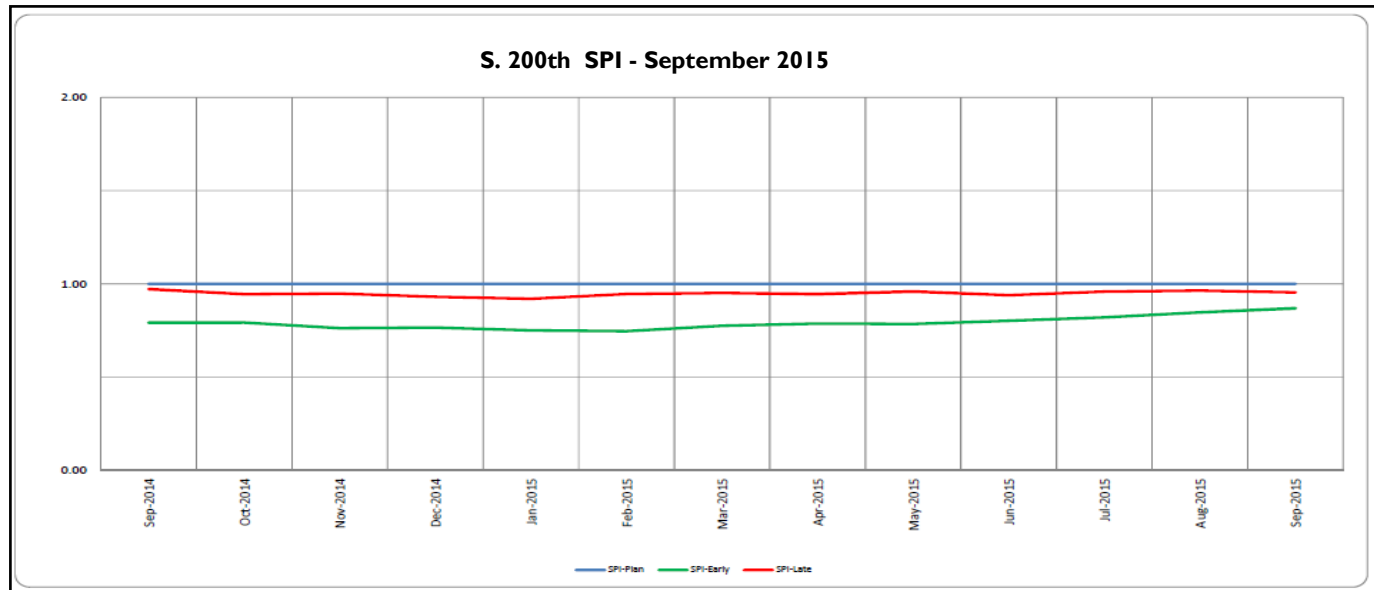
The float contingency for S. 200th Link Extension remains at 146 days but may require some float to be utilized for System Integration Testing based on schedule updates from S440 and S445.



## Schedule Performance Index

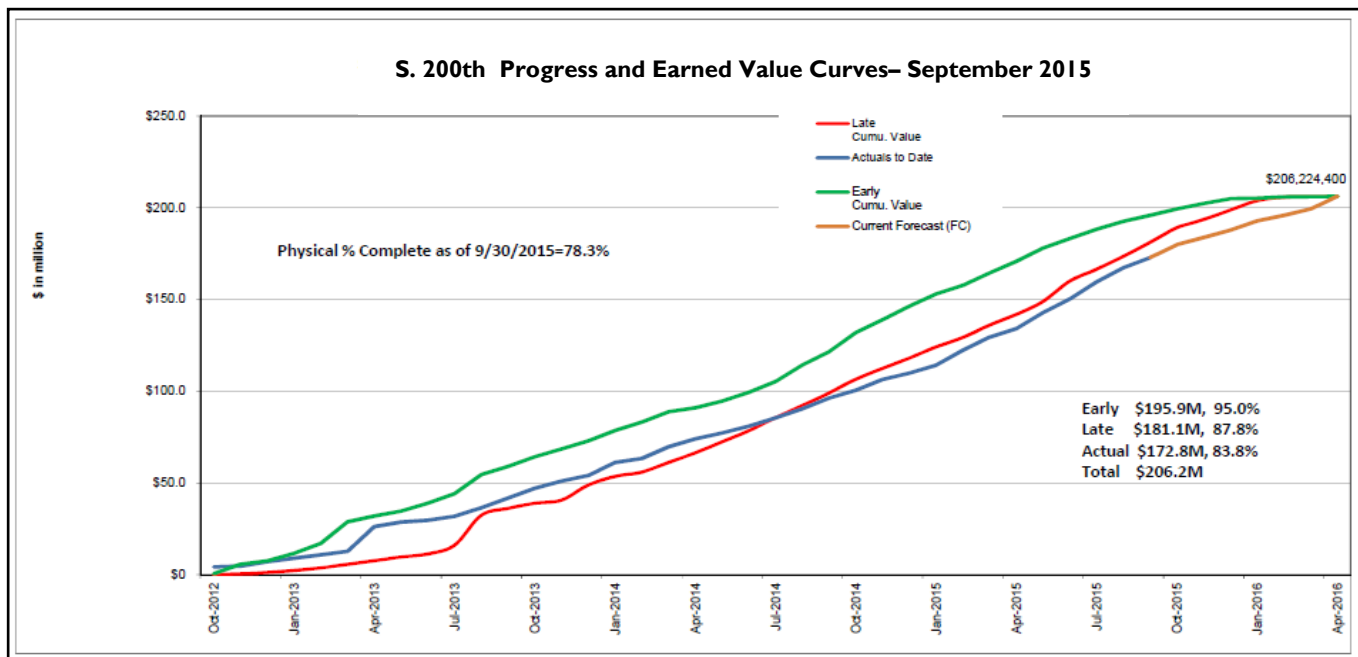
The Schedule Performance Index (SPI) for S.200th has risen slightly this period to 0.88 as work focuses on the train systems this period. Systems installers are on site and OCS pole installation has commenced. (See details on individual contract sections.)

Progress will continue to be monitored closely.



## Cost Progress Analysis

Overall S. 200th physical % complete is at 78.3%. Graphic below is a representation of the progress of major construction contracts cost compared to the early/late projections. S440 will be the main driver for performance levels for S. 200th.



## Right-of-Way

The South 200th Link Extension (S440) will extend from the SeaTac Airport Station along an elevated guideway to a station combined with a park and ride garage at South 200th Street. The South 200th Link Extension involves the acquisition of a range of property interests, including fee acquisitions, permanent and temporary easements, and both business and residential relocations. S447 covers road and utility improvements necessary as a result of the increased traffic that is anticipated with the new station. S447 initially covered 28 parcels of which 10 were previously certified for S440. Six (6) parcels that had ST acquisitions on S440 will also have acquisitions on S447. The right-of-way program is summarized below.

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

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

*S440 DB Guideway and Station* - Three parcels are negotiating language in TCE document.

*S445 Parking Garage and Plaza* - Completed.

*S447 Station Area Roadways* - Decree recorded in one parcel.



## Construction Safety

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

Data/Measure	Sep 2015	Year to Date	Project to Date
Recordable Injury/Illness Cases	0	7	11
Days Away From Work Cases	0	1	1
Total Days Away From Work	0	12	12
Restricted or Modified Work Cases	0	4	7
Total Days Restricted or Modified Work	51	151	346
First Aid Cases	0	3	31
Reported Near Mishaps	0	4	17
Average Number of Employees on Worksite	347	-	-
<b>Total # of Hours (GC &amp; Subs)</b>	<b>44,845</b>	<b>264,005</b>	<b>741,255</b>
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	0.00	5.30	2.97
DART Rate	0.00	3.79	2.16
<i>Recordable National Average</i>	<b>3.80</b>	<b>3.80</b>	<b>3.80</b>
<i>DART National Average</i>	<b>2.20</b>	<b>2.20</b>	<b>2.20</b>
<i>Recordable WA State Average</i>	<b>7.20</b>	<b>7.20</b>	<b>7.20</b>
<i>DART WA State Average</i>	<b>3.30</b>	<b>3.30</b>	<b>3.30</b>

## Quality Assurance Activities

### Activities

- S440: MRB has dispositioned as Acceptable six “Repair” NCRs: regarding Corbel vertical cracking, structural spall, duct blockage and misalignment, joint epoxy injection, and span length. MRB dispositioned as Acceptable one “Major” RFD regarding a rail gap.
- S447: MRB has dispositioned as Acceptable “Repair” NCR regarding concrete spall and one “Major” RFD regarding a fire pump emergency power substitution.

### Issues

- Recurring NCRs.
- S445 RE Conformance Audit Report resulted in five observations and four findings.

### Summary

Description	Sep 2015	Notes
No. of Audits Planned	1	S440 Systems Contractor Audit
No. of Audits Completed	2	S446 100% Design Submittal Audit; S445 RE Audit
Reports in Progress	0	None
No. of Audits Postponed	0	None

## Community Outreach

- Coordinated with affected businesses on paving operations.
- Met with businesses to discuss upcoming utility work and access and provided construction updates.
- Distributed flyers announcing upcoming driveway work to residential properties.
- Distributed “Enter to Win a Tour of Angle Lake Station” promotional posters to community facilities.

## Sound Transit Board Actions

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

## Contract Packages

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

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

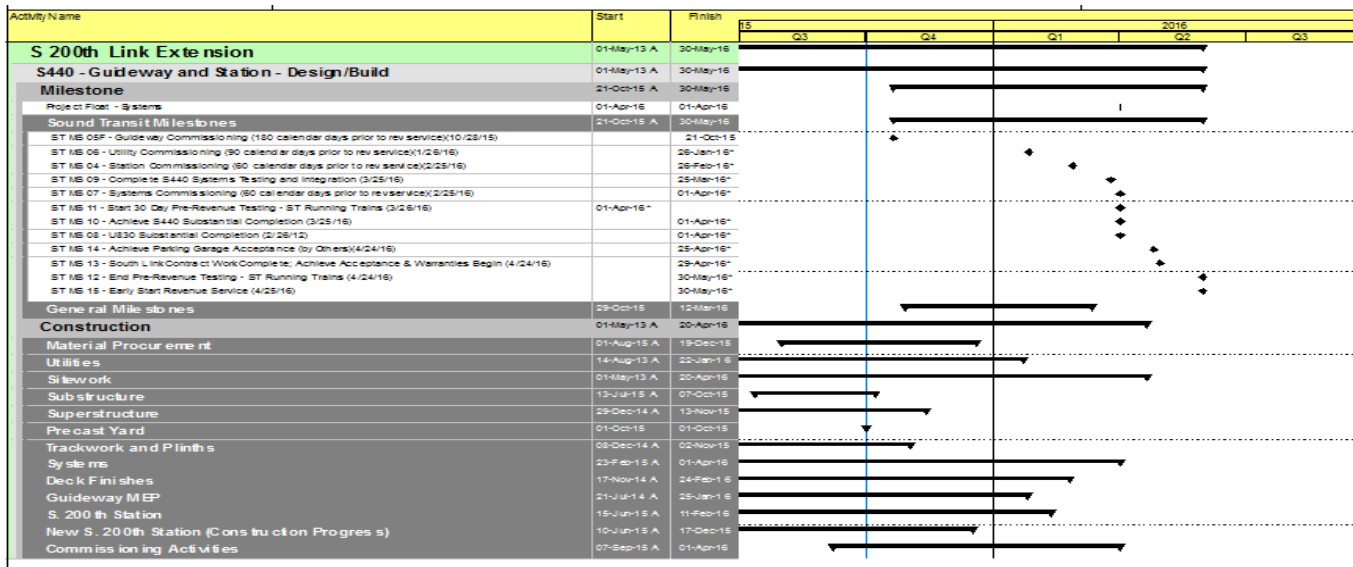
## S440 Contract—Design -Build (Guideway and Station)

### Current Progress

Segment erection of the guideways is now complete. Drainage and handrail are currently underway. OCS pole erection has commenced and plinth and track are currently expected to be complete by end of August. Overall the progress of this contract represents 85% physical completion as compared to 88% time to date.

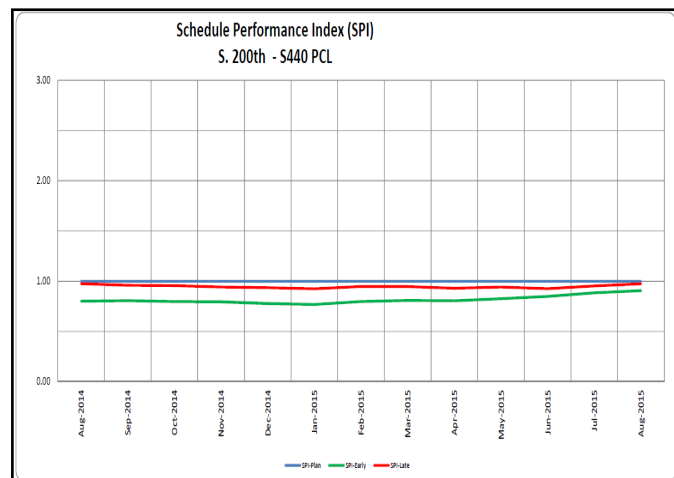
### Schedule/Critical Path

The schedule update for September has been received. Milestone #5, Guideway Commissioning, is reporting is incorrectly reported as complete this period. It is expected that all of ST controlled float for Milestone #5 will be utilized. Milestone #7, Systems Commissioning is reporting 36 days of negative float as the Contractor prepares to understand the commissioning requirements for the train systems. Milestone #10 (Substantial Completion) is reporting 7 days of negative float. The critical path this period runs through the Communications activities and System Testing and Integration. Schedule coordination with the System Integration Testing Plan is expected to continue. Production rates will also be monitored closely.



### Schedule Performance Index

The SPI has risen slightly this period with guideway complete, plinth and rail nearing completion, and OCS pole installation commencement but remains below 1.0 at 0.92. Delays to the commencement of station construction, span erection, and an aggressive baseline schedule continue to plague S440. The Contractor has been able to absorb these delays by shifting the various work sequences. Testing and Commissioning Activities for the station have been added to the schedule. Train Systems commissioning activities durations seem to be underrepresented in this schedule update.



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



## Key Activities

### Current Period

- *Angle Lake Station/Plaza activities:* Continue elevator and escalator installations; continue ancillary building interior finishes and brickwork; platform: started tile and continues with ceiling finishes, electrical lighting installation, and waterproofing; continue painting in emergency stairs and interior rooms; continue MEP and sprinkler system installation; continue rollup door installation; continue electrical Artwork installation; continue Building Management System (BMS) design.
- *Guideway activities:* Completed plinth work; track distressing work nearing completion; started noise wall installation; continue handrail and guardrail installation; continue OCS pole installation; continue drainage installation; continue cable tray and grounding.
- Continued painting columns with pigment sealer.
- Continued throughout the alignment: form and place PT pour backs and permanent bearings, closure pours, and seismic buffers.
- Continued site restoration and concrete panel replacement.
- I/O points list for SCADA programming are nearing completion.
- TPSS was delivered and set.

### Next Period

- Continue guideway work.
- Continue Station work.
- Continue site restoration and concrete panel replacement.
- Continue other miscellaneous work: post tensioning, grouting, seismic buffers/shear keys.
- Continue TPSS electrical connections.

## Closely Monitored Issues

- Station electrical permit was issued, however other electrical permitting items remain critical. Coordination meetings continue with City of SeaTac Inspector.
- City of SeaTac(COS) has indicated that the King County Storm Water codes may require adding detention facilities to the previously approved S440 storm water IFC and permitted design. The approved solution of installing a simple plate weir is being pursued.

## Cost Summary

Present Financial Status	Amount
<b>S440 Contractor—PCL Civil Contractors, Inc.</b>	
Original Contract Value	\$169,000,000
Change Order Value	\$3,873,080
Current Contract Value	\$172,873,080
Total Actual Cost (Amount Billed)	\$150,160,333
Financial Percent Complete:	87%
Physical Percent Complete:	85%
Authorized Contingency	\$13,520,000
Contingency Drawdown	\$3,873,080
Contingency Index*	2.9



Grouting ongoing at T5 and T6 tendons.

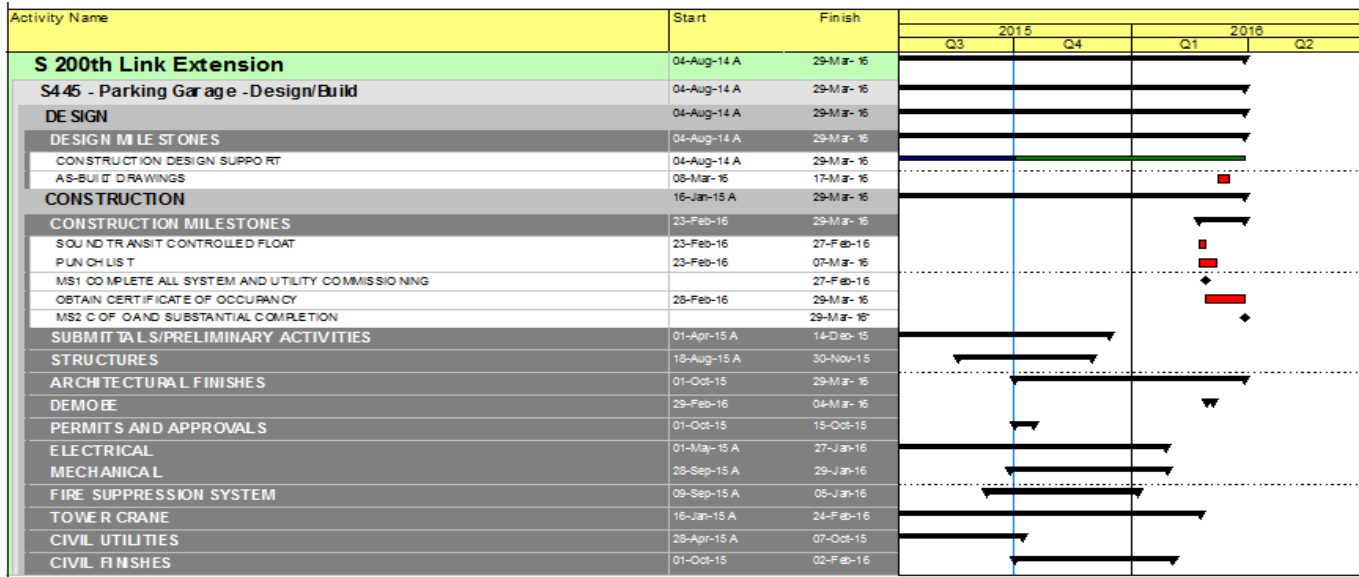
## S445 Contract—Design -Build Parking Garage

### Current Progress

At S445, elevated slab construction well underway and is expected to be completed in 4th QTR 2015. Milestone #1 and #2 have been revised due to weather delays and contaminated soil issues. Twenty-five calendar days have now been added to the schedule in this update but delays continue for S445. Contractor has continued to claim for more time due to UST and contaminated soils. Sound Transit has asked the Contractor for more information as it relates to these delay claims. Production will be watched closely. Overall progress of this contract: construction is 64% physical completion and against 81% duration complete.

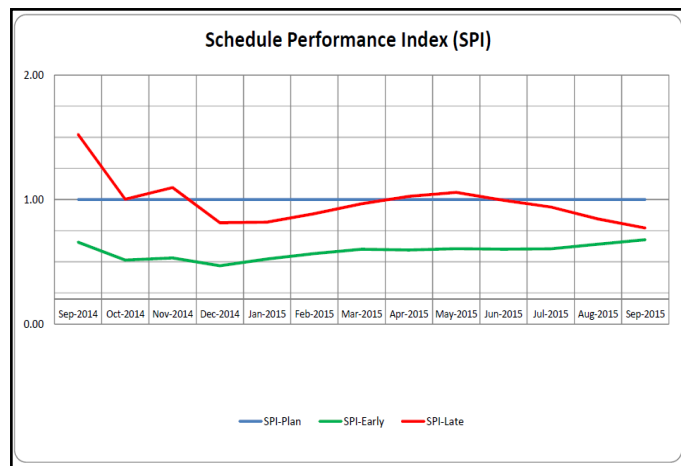
### Schedule/Critical Path

The September schedule update has been submitted. Elevated slab installation is well underway. The critical path this period runs through submittal review and elevator installation which was expected based on discussions this month. Milestone #2 Substantial Completion, is reporting 43 days of negative float with 5 days of owner controlled float intact. Delay claims due to contaminated soil and underground storage tanks have been negotiated and included in this schedule update but delays persist in procurement and near critical slab construction.



### Schedule Performance Index

The SPI has risen slightly this period to 0.68 based on early forecasts. Delays to elevated slab production continues and additional time required for elevator has been added to the critical path.





## Key Activities

### Current Period

- Continued design package development and coordination meetings.
- Final IFC package 3 submittal received on 9/29/2015.
- Continued design and construction interface coordination meetings with S440 DB Contractor, and continue construction coordination with S447 contractor.
- Continue BMS design.
- Continued excavation, formwork, rebar and pour garage footings.
- Continued formwork, rebar, pour and waterproofing of retaining walls.
- Poured columns and pedestrian barrier (Level 2 & 3).
- Continued building elevated deck and beam formwork. (Level 3, 4, & 6).
- Continued formwork, rebar, pour and stressing of post tensioned deck (Level 5).
- Continued Fire Sprinkler Room and electrical room.
- Began Fire Line (water) underground piping adjacent to PSE substation.
- Continued underground installation of electrical, plumbing and fire protection lines.
- Continued slab on grade placement at underground plaza area.
- Continued ongoing survey and control.

### Next Period

- Continue design and coordination meetings.
- Continue BMS design.

- Continue with ongoing survey and control.
- Continue main stair installation.
- Continue pour of starter columns.
- Continue form, rebar and pour garage footings and backfill retaining walls.
- Continue installation of underground and elevated electrical and plumbing.
- Continue building elevated deck and beam formwork.
- Continue installation of fire protection lines.
- Continue pedestrian walkway.
- Continue slab on grade at underground plaza area.
- Continue electrical installation in main electrical room.

## Closely Monitored Issues

- Level 3 Partnering meeting was held to discuss the differing site conditions and unsuitable soil. Sound Transit has determined that the Contractor is entitled to reimbursement for non-grubbed areas to a reasonable depth not to exceed 3,000 cubic yards in quantity. Once agreement of quantities have been reached, a settlement change order is being processed.
- The fabrication, delivery and installation of the elevator remain on the critical path. Elevator fabrication and installation is estimated at 30 weeks by the Contractor. Contractor is working with the elevator manufacturer to identify efficiencies and potential mitigation measures to reduce the current timeframe.

## Cost Summary

Present Financial Status	Amount
<b>S445 Contractor—Harbor Pacific/Graham</b>	
Original Contract Value	\$29,978,000
Change Order Value	\$1,344,203
Current Contract Value	\$31,322,203
Total Actual Cost (Amount Billed)	\$20,659,347
Financial Percent Complete:	66%
Physical Percent Complete:	68%
Authorized Contingency	\$2,398,240
Contingency Drawdown	\$1,344,203
Contingency Index*	1.21



Elevated deck of Garage in place.

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

### Current Progress

In September, S447 Contractor continues to mitigate for continued constructability issues. The Angle Lake parking lot has been moved forward in the schedule last period so the Design Team can make the necessary changes to work that has not been completely defined in the contract documents. Delay claim to NTP is still in negotiations. Overall this contract is 64% physical completion and 70% schedule complete.

### Schedule/Critical Path

The September 2015 schedule update has not been submitted. ST and the Contractor have met to discuss the continued delays due to ROW and constructability issues. Substantial completion is now forecast for March 17, 2016. The Contractor will continue to focus efforts on adjacent Contractor interfaces.

Activity Name	Start	Finish	2015		2016	
			Q3	Q4	Q1	Q2
<b>S 200th Link Extension</b>	01-Apr-15 A	17-Mar-16	[Gantt bar spanning Q3 2015 to Q1 2016]			
<b>S447 - Station Area Roadway Improvements</b>	01-Apr-15 A	17-Mar-16	[Gantt bar spanning Q3 2015 to Q1 2016]			
<b>Pre-Award</b>	01-Apr-15 A	17-Mar-16	[Gantt bar spanning Q3 2015 to Q1 2016]			
<b>All Work of this Contract, Excluding 2-5</b>	01-Apr-15 A	17-Mar-16	[Gantt bar spanning Q3 2015 to Q1 2016]			
<b>Contract Time</b>	01-Apr-15 A	17-Mar-16	[Gantt bar spanning Q3 2015 to Q1 2016]			
S447 South 200th St. Link Extension - Construction	01-Apr-15 A	17-Mar-16	[Gantt bar spanning Q3 2015 to Q1 2016]			
S447 South 200th St. Link Extension - Construction	01-Apr-15 A	17-Mar-16	[Gantt bar spanning Q3 2015 to Q1 2016]			
Punch List	15-Mar-16	17-Mar-16	[Gantt bar in Q1 2016]			
Final Acceptance	17-Mar-16	17-Mar-16	[Gantt bar in Q1 2016]			
<b>Project Management</b>	03-Apr-15 A	31-Dec-15	[Gantt bar spanning Q3 2015 to Q4 2015]			
Mobilization	01-Apr-15 A	20-Apr-15 A	[Gantt bar in Q3 2015]			
S447 Submittals	01-Apr-15 A	15-Mar-16	[Gantt bar spanning Q3 2015 to Q1 2016]			
S. 204th	01-May-15 A	01-Oct-15	[Gantt bar spanning Q2 2015 to Q3 2015]			
28th Ave South	01-May-15 A	10-Mar-16	[Gantt bar spanning Q2 2015 to Q1 2016]			
Angle Lake Parking	10-Jul-15 A	04-Mar-16	[Gantt bar spanning Q3 2015 to Q1 2016]			
South 200th St	14-Aug-15 A	26-Jan-16	[Gantt bar spanning Q3 2015 to Q1 2016]			
Culvert Work S200th St Road Closed	24-Aug-15 A	10-Mar-16	[Gantt bar spanning Q3 2015 to Q1 2016]			
Project Closeout	26-Jan-16	10-Mar-16	[Gantt bar in Q1 2016]			

### Schedule Performance Index

The SPI for S447 has fallen slightly to 0.75 this period due to delays caused by ROW availability and constructability issues. It is expected that the milestones revisions will be made in October 2015 and improvements in production will be seen.



## Key Activities

### Current Period

- Continued weekly construction progress meetings.
- Continue coordination meetings with S440 and S445 Contractors.
- Began grade improvements to existing roadway on 28th Ave S street.
- Began sidewalk, curb and gutter improvements on South 200th street.
- Continue installation of storm drains and catch basins.
- Utility adjustments on 28th Ave and S.200th.
- Continue excavate, pour, strip, form and backfill Walls 4, 6, 7 and 11.
- Continued work on Vicart property.
- Continued parking lot improvements – stairs, communication, luminaires bases, and grading.
- Continued TESC setup for Des Monies Creek work.

### Next Period

- Continue roadwork, sidewalk, curb and retaining wall work.
- Continue parking lot work.
- Begin electrical work on roadway.
- Continue installation of storm drain lines.
- Continue work on Vicart property.
- Complete TESC prep for Des Monies Creek work.

## Closely Monitored Issues

- Multiple/continuing design errors and omissions are impacting schedule and cost. Resequencing work activity is helping to reduce but not eliminate delays. Contractor has submitted notices associated with specific work delayed and are under evaluation.

## Cost Summary

Present Financial Status	Amount
S447 Contractor – Johansen Excavating, Inc	
Original Contract Value	\$8,426,400
Change Order Value	\$96,520
Current Contract Value	\$8,522,920
Total Actual Cost (Amount Billed)	\$4,109,200
Financial Percent Complete:	48%
Physical Percent Complete:	46%
Authorized Contingency	\$842,640
Contingency Drawdown	\$96,520
Contingency Index*	3.9



Looking north at 28th Avenue South Pavement.

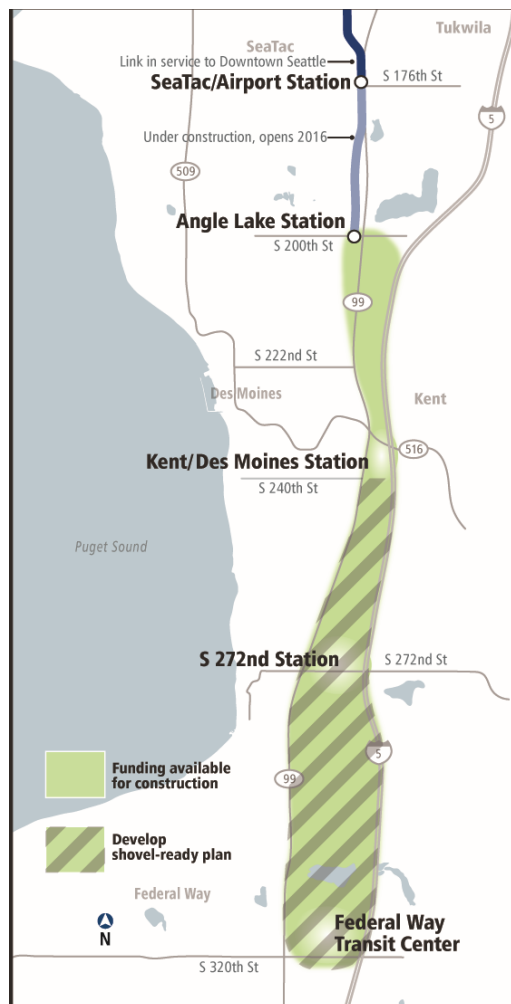
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## Scope

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

## 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.



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.

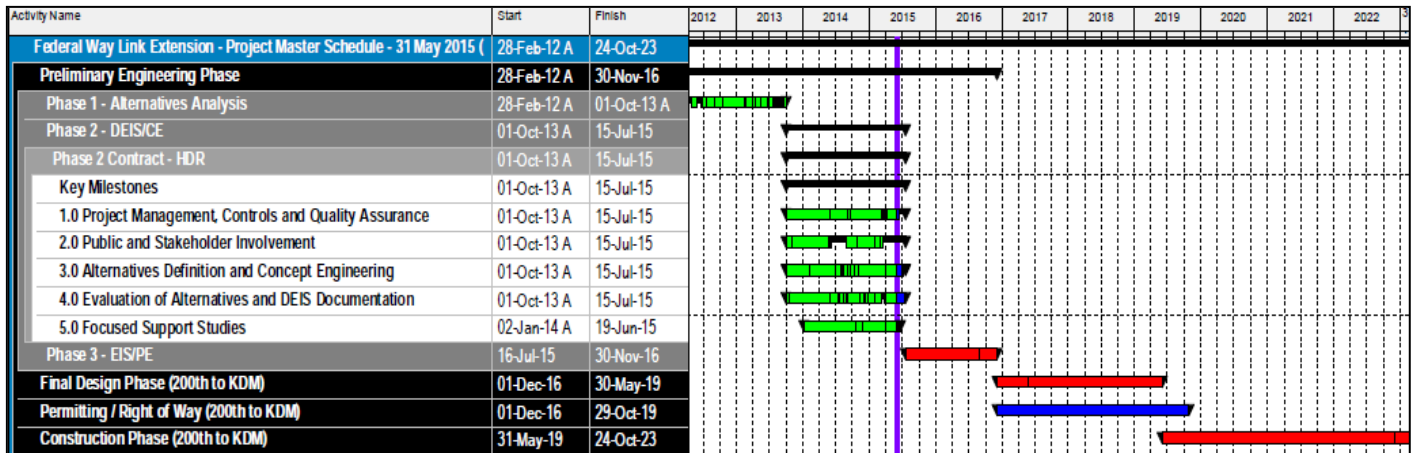
The Federal Way Link Extension is currently funded through the completion of preliminary engineering (PE) and environmental documentation, with the exception of the segment from Kent/Des Moines to Federal Way, which is only funded through environmental documentation. Table (below) figures in millions.

Phase	Adopted Budget	Commitment to Date	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Budget Versus EFC
Administration	\$9.4	\$2.8	\$2.8	\$6.6	\$9.4	\$0.0
Preliminary Engineering	\$30.9	\$28.5	\$12.5	\$2.4	\$30.9	\$0.0
Third Parties	\$1.6	\$0.2	\$0.1	\$1.4	\$1.6	\$0.0
Right of Way	\$1.0	\$0.2	\$0.2	\$0.8	\$1.0	\$0.0
<b>Total</b>	<b>\$42.9</b>	<b>\$31.7</b>	<b>\$15.7</b>	<b>\$11.2</b>	<b>\$42.9</b>	<b>\$0.0</b>



## Project Schedule

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



## Sound Transit Board Actions

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

Motion Number	Description	Date
	None to report.	

## Community Outreach

- Draft DEIS comment period closed and I-5 alternative was chosen.
- Began Phase 1 of high priority Right of Entry acquisitions.

## Environmental

- Closed Draft EIS comment period.

## Phase 3 Preliminary Engineering (PE)

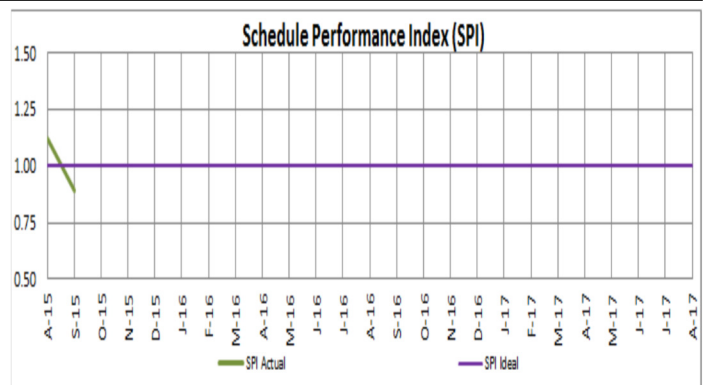
In July 2015, Sound Transit executed an amendment to the professional services agreement with HDR Engineering, Inc. for Phase 3 professional services, including completion of a Final Environmental Impact Statement (FEIS) using the preferred alternative and the other alternatives in the Draft EIS, preliminary engineering of the preferred alternative to Kent/Des Moines and additional engineering as needed to support receipt of environmental approvals.

### Phase 3 Key Activities

- Continued field survey activities including geotechnical borings.
- Continued coordination with key stakeholders to further evaluate potential modifications to the preferred Kent/Des Moines Station.
- Initiated engineering activities associated with advancing the design of the preferred alternative.
- Initiated development of the Final EIS.

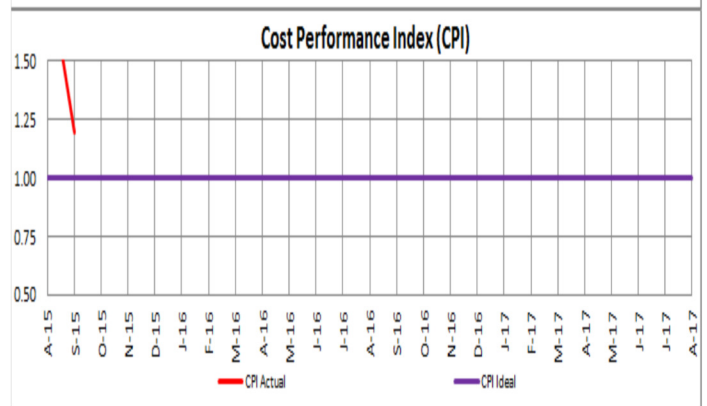
### Phase 3 Schedule Performance

The cumulative Schedule Performance Index (SPI) is 0.89 through September 2015, indicating the overall amount of work accomplished is less 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

\$12.9M of the total contract amount, approximately 46%, has been spent through September 2015. Phase 3 expenditures through September totaled \$1.1M, approximately 7% of the Phase 3 contract total. The Phase 3 percent complete reported at the end of September is 8%, with an earned value of \$1.3M. The cumulative Cost Performance Index (CPI) through September is 1.19, indicating costs are less than 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	\$343,262	\$739,754	\$1,083,016
% Spent	2%	5%	7%
Earned Value	\$658,334	\$634,869	\$1,293,202
% Complete	4%	4%	8%
<b>SPI</b>	<b>1.12</b>	<b>0.74</b>	<b>0.89</b>
<b>CPI</b>	<b>1.90</b>	<b>0.86</b>	<b>1.19</b>

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# Link Light Rail Tacoma Link Expansion

## Scope

In cooperation with the City of Tacoma and Pierce Transit, Sound Transit is studying the potential of expanding the Tacoma Link light rail system in the context of the City and Pierce Transit service and capital plans. A technical advisory committee comprised of the City, Pierce Transit and Sound Transit staff convened to provide technical feedback and guidance throughout the Alternative Analysis (AA) process. Sound Transit, the City of Tacoma and Pierce Transit signed a cooperative agreement term sheet. In February 2014, the Tacoma City Council unanimously recommended and the Sound Transit Board unanimously identified one alignment to undergo environmental review.



Tacoma Link

## Key Project Activities

- During 1st QTR 2014 Sound Transit executed an amendment to the professional services contract with CH2M Hill in March to perform conceptual engineering and environmental review and to assist in the preparation of the Small Starts Grant application. The initial Small Starts Rating submittal was submitted in September 2014.
- Preliminary Engineering (PE): Draft PE Plans submitted. Final PE Plans to be submitted in September 2015. Constructability Review workshop was conducted in July 2015.
- Environmental: The FTA made a preliminary decision to proceed with DCE. The environmental review process was completed in August 2015.
- The initial Small Starts Rating submittal was submitted in September 2014.

## Project Cost Summary

The Tacoma Link Alternatives Analysis is currently funded through the completion of the alternatives analysis, PE and Environmental Documentation. Funding included in the ST2 financial plan represents a maximum capital contribution by Sound Transit to the overall cost of expanding Tacoma Link if other public or private entities provide additional funding. Board approval for funding environmental documentation, preliminary engineering, final design and construction will be sought upon completion of the alternatives analysis. Board approval for funding Preliminary Engineering, Final Design and Construction will be sought upon completion of the environmental documentation, a project funding strategy and agreements with funding partners. (Table in millions.)

Phase	Adopted Budget	Commitment to Date	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Budget Versus EFC
Administration	\$1.8	\$1.7	\$1.7	\$0.2	\$1.8	\$0.0
Preliminary Engineering	\$5.9	\$5.4	\$4.9	\$0.4	\$5.9	\$0.0
Right of Way	\$0.1	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0
<b>Total</b>	<b>\$7.8</b>	<b>\$7.1</b>	<b>\$6.6</b>	<b>\$0.6</b>	<b>\$7.8</b>	<b>\$0.0</b>

## Project Schedule

The Alternative Analysis was completed by the 1st QTR 2014. The project schedule is presented below.

Activity ID	Activity Name	Start	Finish	2015			2016			2017			2018			2019			2020			2021					
				Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
<b>ST TLE Phase 3 - Preliminary Engineering</b>				[Gantt bars for 2015 Q2-Q4]																							
Task 1: Project Management, Controls, and Quality Assurance				[Gantt bar for 2015 Q2-Q4]																							
Task 2: Stakeholder Involvement and Communication Materials				[Gantt bar for 2015 Q2-Q4]																							
Task 4: Environmental Analysis & Documentation				[Gantt bar for 2015 Q2-Q4]																							
Task 5: Small Starts Support				[Gantt bar for 2015 Q2-Q4]																							
Task 6: Cost Estimation and Risk Analysis				[Gantt bar for 2015 Q2-Q4]																							
Task 7: Construction Planning and Value Engineering Support				[Gantt bar for 2015 Q2-Q4]																							
Task 8: Traffic, Regional Travel Demand & Ridership				[Gantt bar for 2015 Q2-Q4]																							
Task 9: Preliminary Engineering				[Gantt bar for 2015 Q2-Q4]																							
<b>Tacoma Link Expansion - Systemwide Master Schedule</b>				[Gantt bars for 2015 Q2-Q4]																							
Procurement				[Gantt bar from 2015 Q2 to 2021 Q4]																							
Engineering and Construction				[Gantt bar from 2015 Q3 to 2018 Q4]																							
Light Rail Vehicles				[Gantt bar from 2015 Q2 to 2021 Q4]																							
Final Design				[Gantt bar from 2015 Q3 to 2017 Q4]																							
ROW/Property Acquisition				[Gantt bar from 2015 Q3 to 2019 Q4]																							
Permits and Agreements				[Gantt bar from 2015 Q2 to 2018 Q4]																							
Construction				[Gantt bar from 2018 Q1 to 2021 Q4]																							

## Environmental

- The environmental review process was completed in August 2015.

## Community Outreach

- Participated in Stadium Art, Wind and Beer walk.
- Continued door-to-door outreach along the alignment and reaching 691 doors.
- Finished filming video featuring alignment and impacted residents and businesses.



## Phase 3 Conceptual 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.

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### Phase 3 Key Activities

- Continued public outreach efforts.
  - Prepared detailed Phase 3 work plan and schedule.
  - Updated design criteria and various conceptual engineering technical memos.
  - Geotechnical, Structural, Drainage, Utility, and Safety & Security Certification Analysis ongoing.
- 

### Phase 3 Schedule and Cost Performance

This project will begin reporting earned value data for the Phase 3 contract soon.

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# Link Light Rail Link Operations and Maintenance Satellite Facility



## Scope

Sound Transit is reviewing and evaluating current and future light rail storage and maintenance requirements to support the development, design, and construction of a future light rail operations and maintenance facility for proposed system expansion. Sound Transit Board identified Draft Environmental Impact Statement (DEIS) alternatives in 2012.

## Key Project Activities

- Sound Transit Board identified preferred alternative July 24, 2014.
- MOU with the City of Bellevue approved by the Bellevue City Council and Sound Transit Board in April 2015.
- Issues with obtaining ROE's for two parcels. To date, owners have denied Sound Transit ROE requests limiting the ability to survey the parcels and conduct geotechnical exploration.
- Environmental publication of the FEIS October 2, 2015.
- Board Selection of Project to be built October 22, 2015.

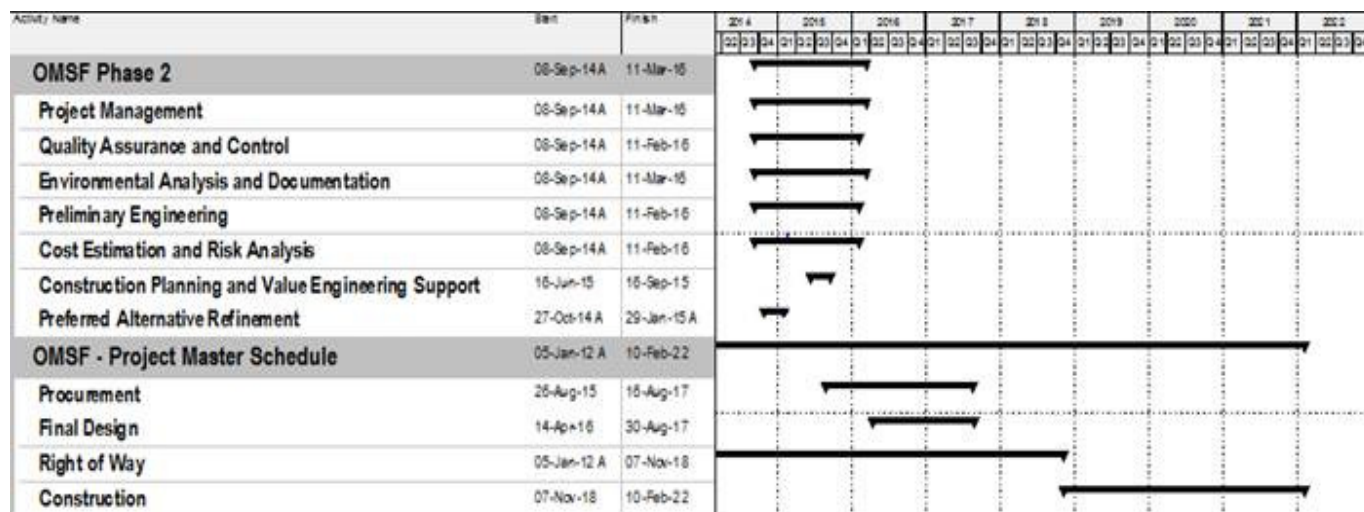
## Program Cost

The Link Operations and Maintenance Satellite Facility (OMSF) project is currently funded through the completion of Preliminary Engineering (PE) and environmental documentation. ST Board approval for additional funding for Final Design and Construction will be sought upon completion of PE. 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	\$3.2	\$1.1	\$1.1	\$2.1	\$3.2	\$0.0
Preliminary Engineering	\$10.0	\$8.7	\$6.0	\$1.3	\$10.0	\$0.0
3 <sup>rd</sup> Party Agreements	\$0.4	\$0.0	\$0.0	\$0.4	\$0.4	\$0.0
Right of Way	\$23.2	\$23.2	\$23.2	\$0.0	\$23.2	\$0.0
<b>Total</b>	<b>\$36.8</b>	<b>\$33.0</b>	<b>\$30.3</b>	<b>\$3.8</b>	<b>\$36.8</b>	<b>\$0.0</b>

## Program Schedule

The project schedule is presented below. The extension of Phase 1 completion to August 2014 required that the remaining preliminary engineering and final design work be complete by September 2016 in order to maintain the current construction and startup schedule. Sound Transit is preparing a conceptual schedule to show the remaining preliminary engineering duration and investigating alternative delivery methods.



## 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.

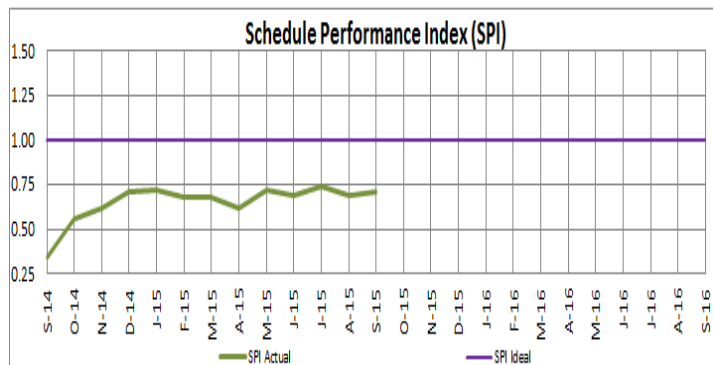
### Phase 2 Key Activities

- Expediting Cultural Resources and Biological Assessment Technical Reports.
- ROE and environmental coordination revisions to geotechnical site investigation plan.
- Completed MOU with City of Bellevue.
- Consultant Delivered Interim PE Design Documents.
- Submitted 2nd Draft of FEIS Document for FTA Review.
- Completed Value Engineering & Constructability Review in July 2015.

### Phase 2 Schedule Performance

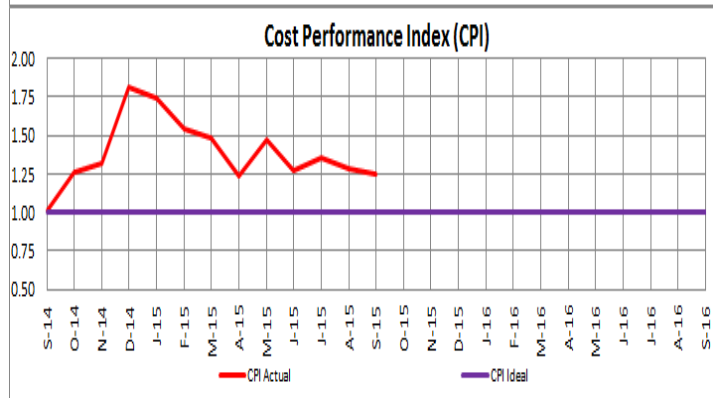
Change Order 004 incorporated Phase 2 of the project on September 2014.

The cumulative Schedule Performance Index (SPI) trends at 0.71 through September 2015, which means that cumulative work accomplished is less than the planned work. The remaining Phase 2 scope is currently being 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.



### Phase 2 Cost Performance

\$2.6M of the total Phase 2 contract amount, approximately 49%, was spent through September 2015. The Phase 2 percent complete is 61%, with an earned value of \$3.3M. The cumulative Cost Performance Index (CPI) is 1.25, meaning that expenditures are less than the earned value. Based on these trends, the final cost is expected to be under the contract budget of \$5.3M.



Phase 2 Performance	Previous Period	Current Period	Cumulative To Date
Amount Invoiced	\$2,324,091	\$151,539	\$2,475,440
% Spent	44%	2%	46%
Earned Value	\$3,144,614	\$33,398	\$3,178,012
% Complete	59%	1%	60%
<b>SPI</b>	<b>0.74</b>	<b>0.09</b>	<b>0.69</b>
<b>CPI</b>	<b>1.35</b>	<b>0.22</b>	<b>1.28</b>

# Link Light Rail ST2 LRV Fleet Expansion

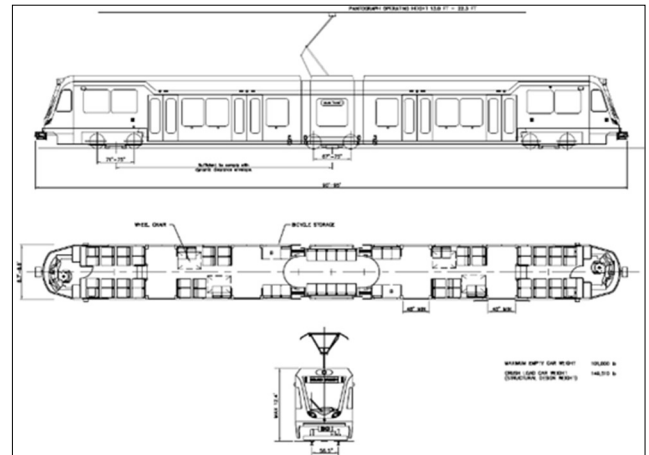


## Project Summary

**Scope:** Design, manufacturing, assembly, inspection, testing and delivery of 122 low floors 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

- Project was baselined early September.
- Held a 4 day risk workshop with peer agencies and subject matter experts in August. Risk and opportunities were identified. Some mitigations discussed were immediately incorporated to the specifications.
- The LRV Procurement Package is anticipated to be advertised late October 2015 and award of contract planned in September 2016.

## Project Cost Summary

The ST2 LRV Fleet Expansion project cost is summarized below by two cost categorizations. In the first table, the cost is summarized in accordance with Sound Transit's Work Breakdown Structure (WBS) at the Phase Level. The second table summarizes the project in accordance with the FTA's Standard Cost Category (SCC) format. The figures in both tables are shown in millions. This is the first period being reported. To date, approximately \$890K has been expended, primarily for engineering for the spec and RFP development. Additionally, some cost was expended for a Value Engineering workshop.

### Cost Summary by Phase

Project Phase	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
ADMINISTRATION	\$4.7	\$4.7	\$0.0	\$0.0	\$4.7	\$0.0
CONSTRUCTION SERVICES	\$14.1	\$14.1	\$4.8	\$0.9	\$14.1	\$0.0
VEHICLES	\$714.2	\$714.2	\$0.0	\$0.0	\$714.2	\$0.0
<b>Total</b>	<b>\$733.0</b>	<b>\$733.0</b>	<b>\$4.8</b>	<b>\$0.9</b>	<b>\$733.0</b>	<b>\$0.0</b>

### Cost Summary by SCC

SCC Element	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
<b>Construction Subtotal (SCC 10 - 50)</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>
60 ROW, LAND, EXISTING IMPROVEMENTS	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
70 VEHICLES	\$683.4	\$683.4	\$0.0	\$0.0	\$683.4	\$0.0
80 PROFESSIONAL SERVICES	\$17.9	\$17.9	\$4.8	\$0.9	\$17.9	\$0.0
90 CONTINGENCY	\$31.8	\$31.8	\$0.0	\$0.0	\$31.8	\$0.0
<b>Capital Total (SCC 10 - 90)</b>	<b>\$733.0</b>	<b>\$733.0</b>	<b>\$4.8</b>	<b>\$0.9</b>	<b>\$733.0</b>	<b>\$0.0</b>



## Cost Contingency Management

### Contingency Status

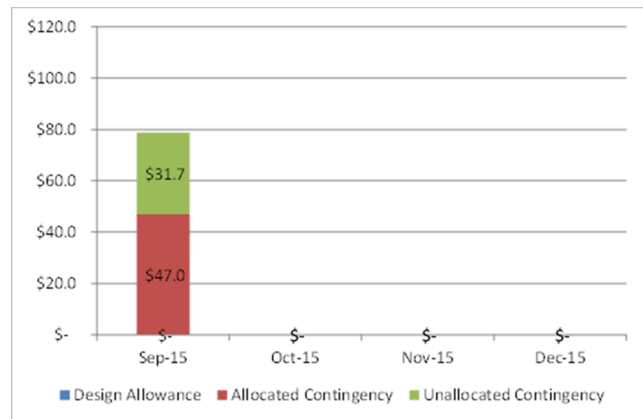
The project’s baseline budget, which was approved by the Sound Transit Board in September 2015, contains a total of \$78.7M of Total Contingency. This is the first period being reported.

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

*Allocated Contingency* – The project baseline contains \$47.0M of allocated contingency.

*Unallocated Contingency* – The project baseline contains \$31.7M of unallocated contingency.

Contingency Status	Baseline		Current	
	Amount	% of Total	Amount	% of Work Remaining
Design Allowance	\$ -	0.0%	\$ -	0.0%
Allocated Contingency	\$ 47.0	6.4%	\$ 47.0	6.4%
Unallocated Contingency	\$ 31.7	4.3%	\$ 31.7	4.3%
<b>Total</b>	<b>\$ 78.7</b>	<b>10.8%</b>	<b>\$ 78.7</b>	<b>10.8%</b>



## Risk Management

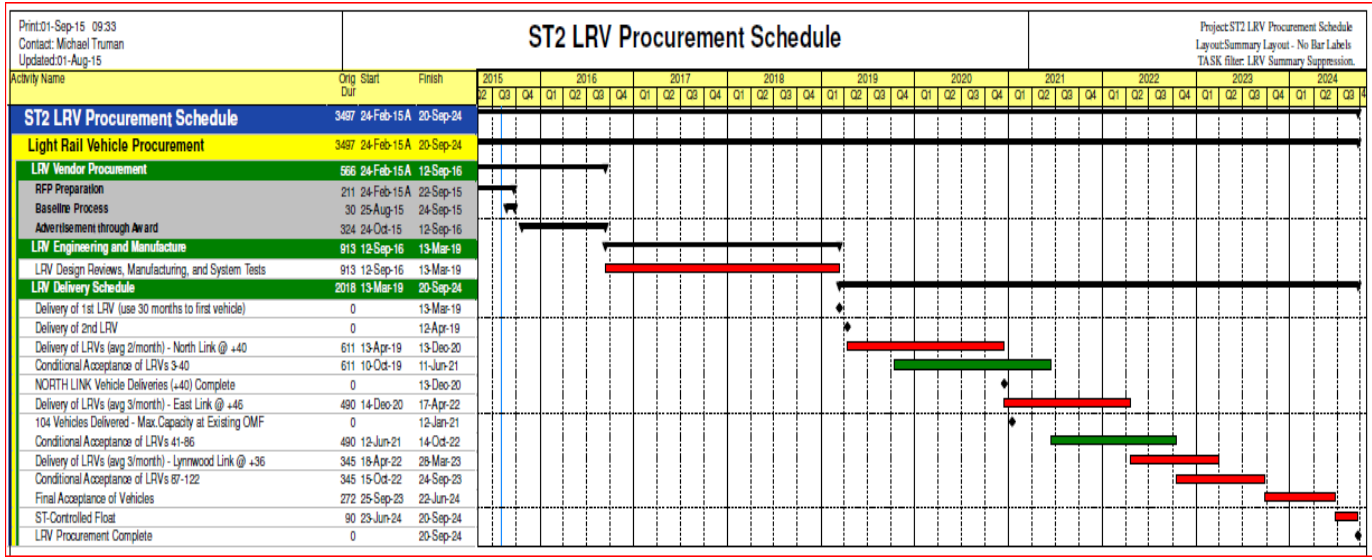
This project currently has 24 active risks that are being monitored. The top five risks are as follows:

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

# Link Light Rail ST2 LRV Fleet Expansion



## Project Schedule



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## Staffing Variance Report

### Recruiting Activity

During August 2015, the following positions the following positions were filled to support the Link capital program:

Position	Project Assignment	Planned Hire Date
Design Technology Specialist (2)	All capital projects	2015 Attrition
Sr. Property Mgmt. Specialist	East Link Extension	2015 Attrition

*\*Attrition resulting from internal promotion*

Recruiting continued during the reporting period for the following design, engineering and construction management positions:

Position	Project Assignment	Planned Hire Date
Sr. Systems Engineer	Traction Power	2013 Attrition
Construction Manager	East Link Extension	April 2014
Construction Manager	Systems	April 2014
Sr. Real Property Agent	East/Lynnwood Extension	November 2014
Deputy Project Director	University Link Extension	2014 Attrition*
Community Outreach Coordinator	East Link Extension	2014 Attrition*
Systems Engineer	Link	2014 Attrition
Architect	East Link Extension	2014 Attrition
Executive Project Director	Lynnwood Link Extension	April 2015
Assistant Permit Administrator	East Link Extension	May 2015
Project Director	Tacoma Link Extension	June 2015
Sr. Project Manager	Tacoma Link Extension	June 2015
Deputy Project Director	Operations Satellite Facility	2015 Reclassification
Structural Engineer	All Capital Projects	2015 Attrition*
Mechanical Engineer	Systems	2015 Attrition*
Community Outreach Specialist	South Corridor	2015 Attrition*

*\*Attrition resulting from internal promotion*

## Project Staffing– Link Light Rail Program– August 2015

A total of 564.2 (120% of plan) consultant and internal staff full time equivalents (FTE) participated in the on-going planning, design and construction of Link light rail extensions in August 2015, a 1% decrease (5 FTE) from July. Average year-to-date staffing of 523.2 FTE/mo. is trending 10% (47.8 FTE/mo.) above plan. August staffing for the University, Northgate and S. 200th Link Extensions exceeded plan; staffing for the East Link (179 FTE) and Lynnwood (41.6 FTE) Extensions was 98% and 78% of plan respectively. Staffing variance to plan for the month by project follows.

Project	August 2015 Staffing Plan Variance Summary								YTD Staffing			
	Consultant Staff				Sound Transit Staff				Total Project Staffing			
	FTE		Variance		FTE		Variance		FTE		Variance	
	Planned	Actual	FTE	% of Plan	Planned	Actual	FTE	% of Plan	Planned	Actual	FTE	% of Plan
University Link Extension	36.9	50.8	13.9	138%	39.5	49.1	9.6	124%	76.4	95.8	19.4	125%
Northgate Link Extension	73.6	135.7	62.1	184%	48.7	38.5	-10.2	79%	122.3	161.3	39.0	132%
South 200th Extension	20.1	23.7	3.6	118%	20.6	19.3	-1.3	94%	40.7	45.5	4.8	112%
East Link Extension	109.2	149.5	40.3	137%	73.2	61.3	-11.9	84%	182.4	179.0	-3.4	98%
Lynnwood Link Extension	27.0	20.6	-6.4	76%	26.6	15.7	-10.9	59%	53.6	41.6	-12.0	78%
<b>Total</b>	<b>266.8</b>	<b>380.3</b>	<b>113.5</b>	<b>143%</b>	<b>208.6</b>	<b>183.9</b>	<b>-24.7</b>	<b>88%</b>	<b>475.4</b>	<b>523.2</b>	<b>47.8</b>	<b>110%</b>



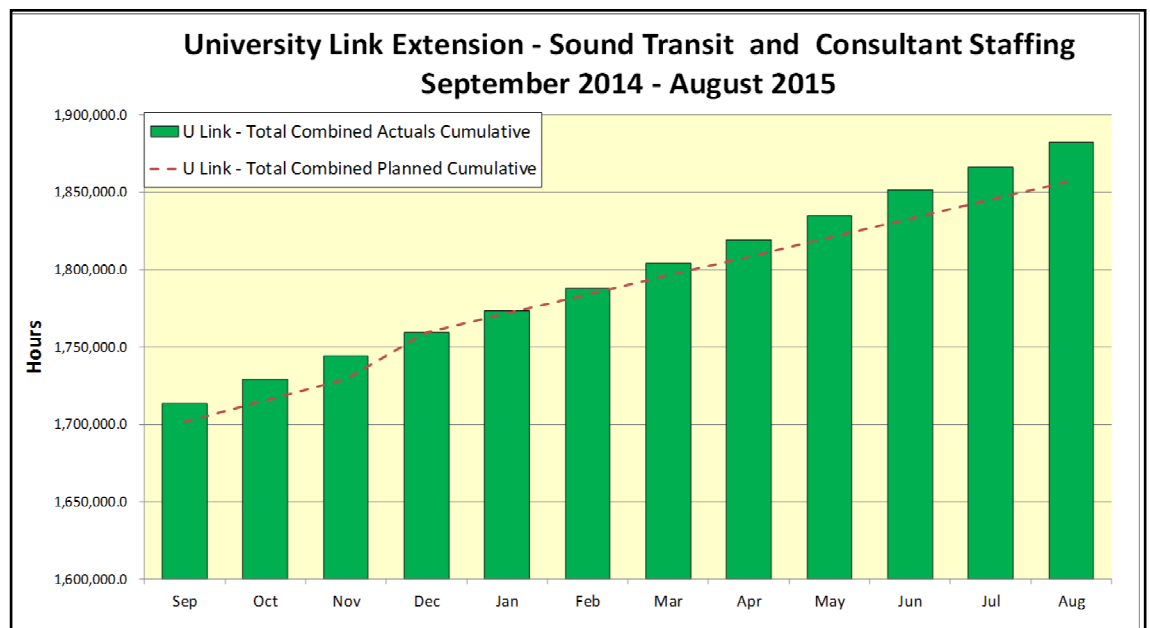
# Link Light Rail Staffing Report



## University Link Extension Staffing

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

There were 99.8 FTE assigned to the University Link Extension in August including 50.8 consultant and 49.1 internal FTE. Staffing for the month increased 10% (9.3 FTE) from July and was above plan by 31% (23.4 FTE). Average year to date staffing of 95.8 FTE/mo. is trending above plan by 25% (18.8 FTE). Cumulatively, since August 2006, average monthly project staffing is consistent with plan.

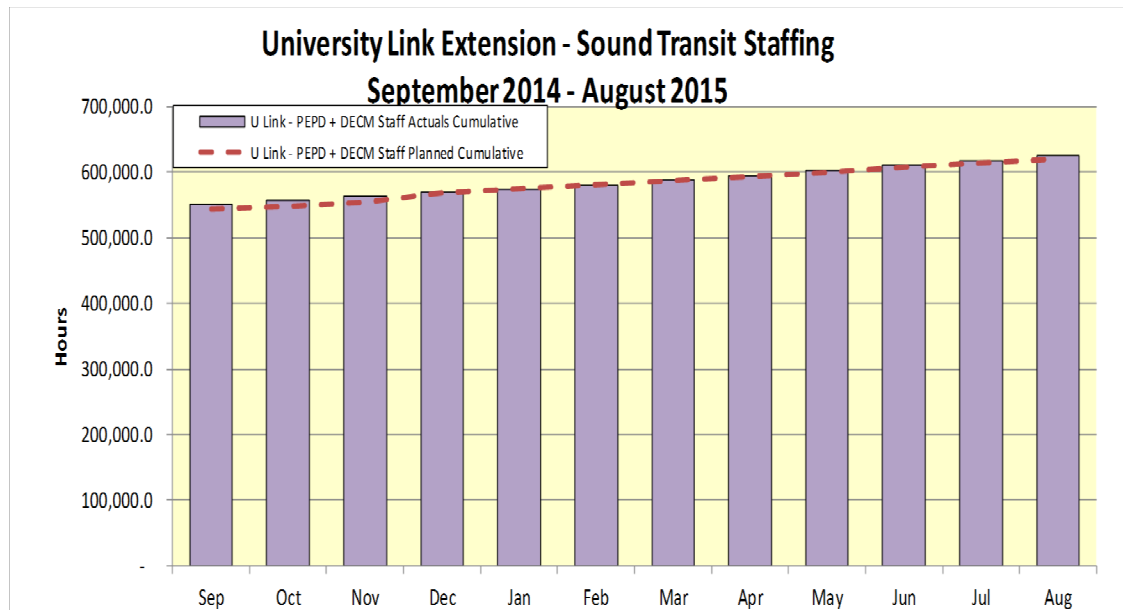


	Labor Hours to Date				Current Period Aug 2015			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	1,857,277.7	1,882,120.3	24,842.6	101.3%	12,224.0	15,972.9	3,748.9	130.7%
<b>Monthly Average</b>	17,039.2	17,267.2	227.9					
<b>Monthly FTE</b>	106.5	107.9	1.4		76.4	99.8	23.4	

## University Link Extension Staffing

### Internal Resource Commitments to University Link Extension

There were 49 internal FTE assigned to the University Link Extension in August. Internal staffing was 24% (9.5 FTE) above plan and 4% (2.1 FTE) below staffing for July. Cumulatively, since August 2006, average monthly internal staffing is trending with plan.



	Labor Hours to Date				Current Period Aug 2015			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>NO. OF HOURS</b>	<b>619,123.6</b>	<b>625,393.1</b>	<b>6,269.5</b>	<b>101.0%</b>	<b>6,320.0</b>	<b>7,845.7</b>	<b>1,525.7</b>	<b>124.1%</b>
<b>Monthly Average</b>	<b>5,680.0</b>	<b>5,737.6</b>	<b>57.5</b>					
<b>Monthly FTE</b>	<b>35.5</b>	<b>35.9</b>	<b>0.4</b>		<b>39.5</b>	<b>49.0</b>	<b>9.5</b>	

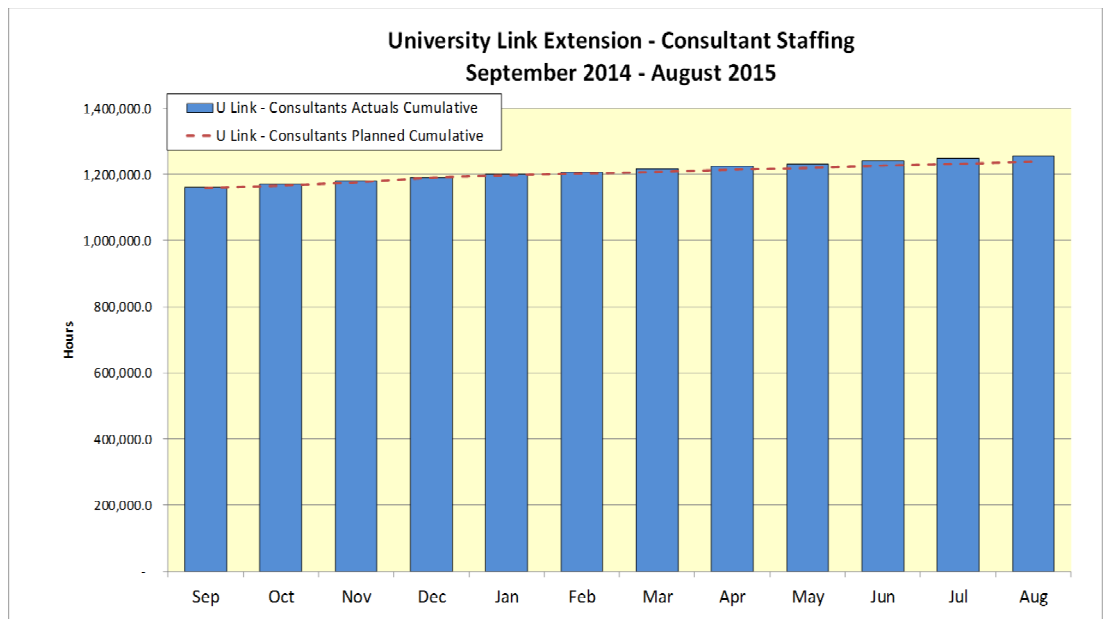
# Link Light Rail Staffing Report



## University Link Extension Staffing

### Consultant Resource Commitments to University Link Extension

During August 50.8 consultant FTE were assigned to the University Link Extension; consultant staffing was 38% (13.9 FTE) above plan and 17% (7.3 FTE) above July staffing. Cumulatively, since August 2006, average monthly consultant staffing is trending with plan.



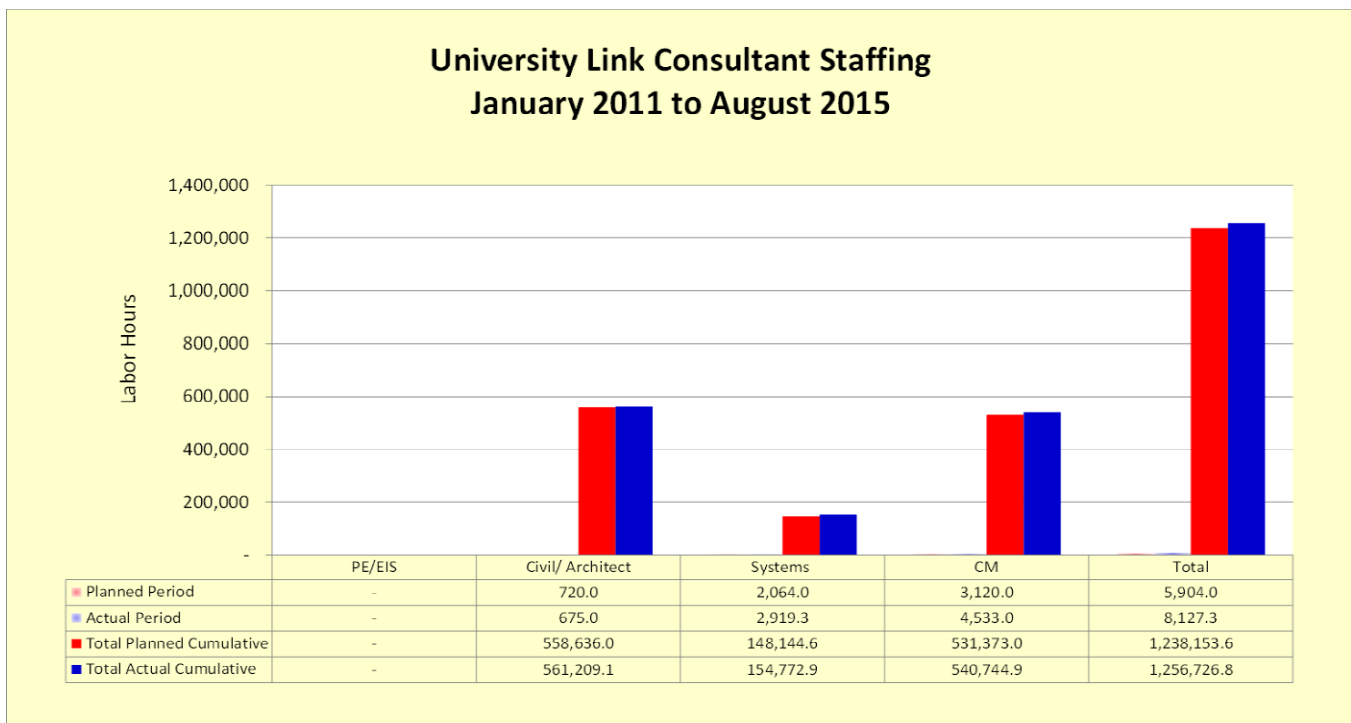
	Labor Hours to Date				Current Period Aug 2015			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	1,238,154.1	1,256,727.1	18,573.1	101.5%	5,904.0	8,127.3	2,223.3	137.7%
<b>Monthly Average</b>	11,359.2	11,529.6	170.4					
<b>Monthly FTE</b>	71.0	72.1	1.1		36.9	50.8	13.9	

## University Link Extension Staffing

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

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

In July, civil engineering consultant staffing (4.1FTE) was 8% (.04 FTE) below plan and was 35% (2.2 FTE) below June staffing. Systems engineering staffing (17.4 FTE) was 35% (4.5 FTE) above plan and 7% (1.2 FTE) below Systems staffing in June. Construction management consultant staffing (21.9 FTE) decreased 31% (10 FTE) from June and was 12% (2.4 FTE) above plan. Cumulative staffing levels for civil, systems and construction management consultants are trending with plan.



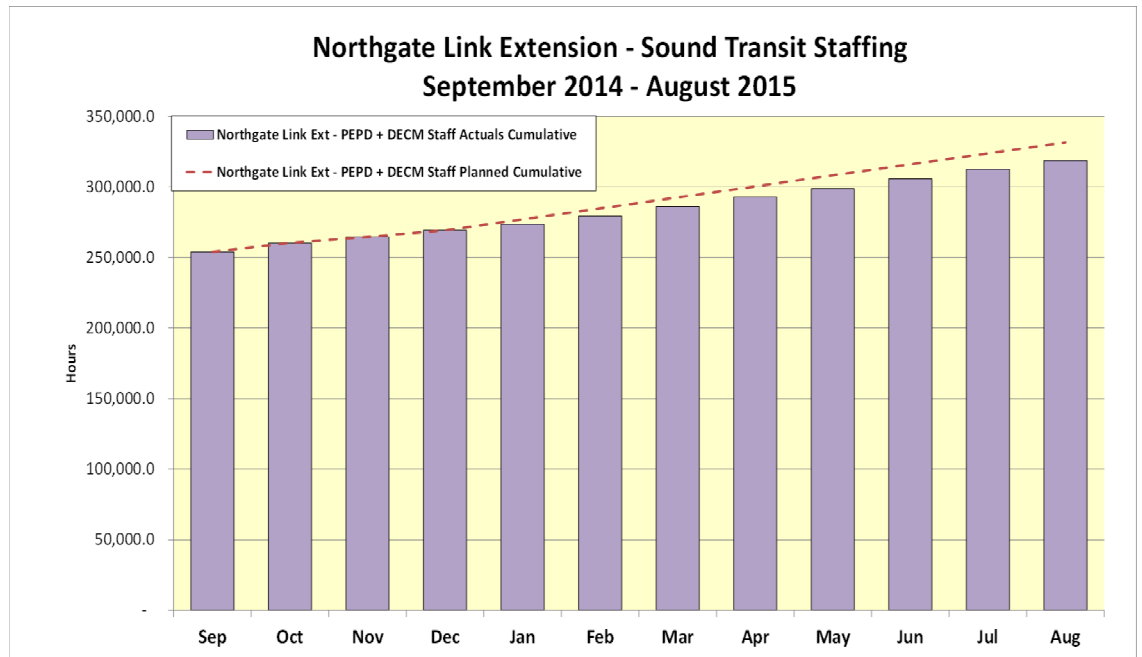
# Link Light Rail Staffing Report



## Northgate Link Extension Staffing

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

Internal staffing in August (38.5 FTE) decreased 8% (3.6 FTE) from August and was 21% (10.2 FTE) below plan. Cumulatively, since January 2011, average monthly internal staffing is 3.9% (1.4 FTE) below plan.

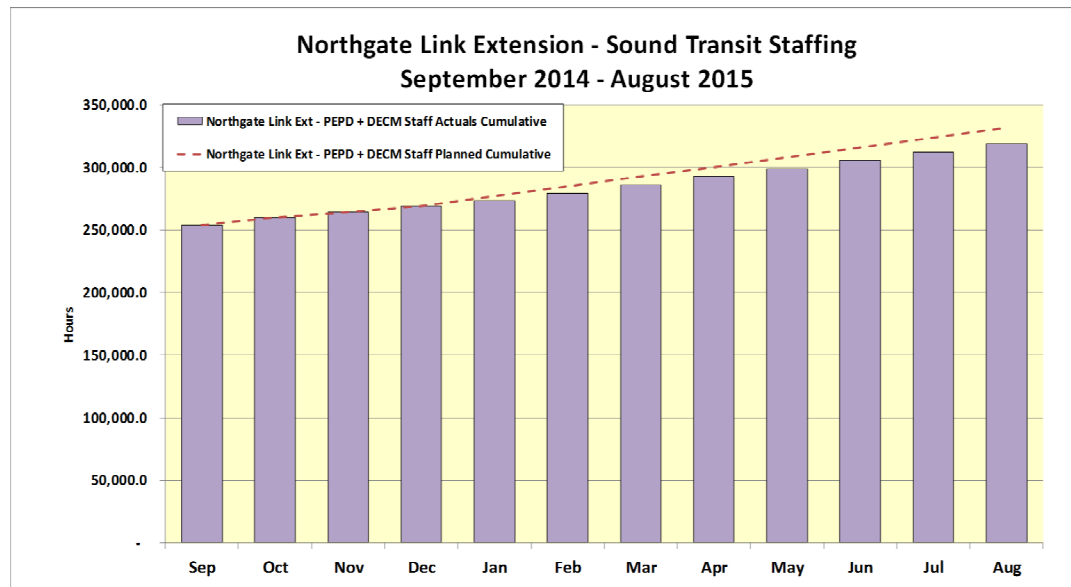


	Labor Hours Jan 2011 - Aug 2015				Current Period Aug 2015			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	331,589.4	318,713.3	-12,876.1	96.1%	7,792.0	6,163.5	-1,628.5	79.1%
<b>Monthly Average</b>	5,921.2	5,691.3	-229.9					
<b>Monthly FTE</b>	37.0	35.6	-1.4		48.7	38.5	-10.2	

## Northgate Link Extension Staffing

### Internal Resource Commitments to Northgate Link Extension

During August, 38.5 internal and 135.7 consultant FTE were assigned to the Northgate Link Extension. This is a 1% (1.5 FTE) decrease from July and is 42% (52 FTE) above plan. Average year to date staffing of 161.3 FTE/mo. is 32% (39 FTE/mo.) above plan; cumulatively since January 2011, average monthly staffing is 4.6% (5.6 FTE) above plan.



	Labor Hours Jan 2011 - Aug 2015				Current Period Aug 2015			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	331,589.4	318,713.3	-12,876.1	96.1%	7,792.0	6,163.5	-1,628.5	79.1%
<b>Monthly Average</b>	5,921.2	5,691.3	-229.9					
<b>Monthly FTE</b>	37.0	35.6	-1.4		48.7	38.5	-10.2	



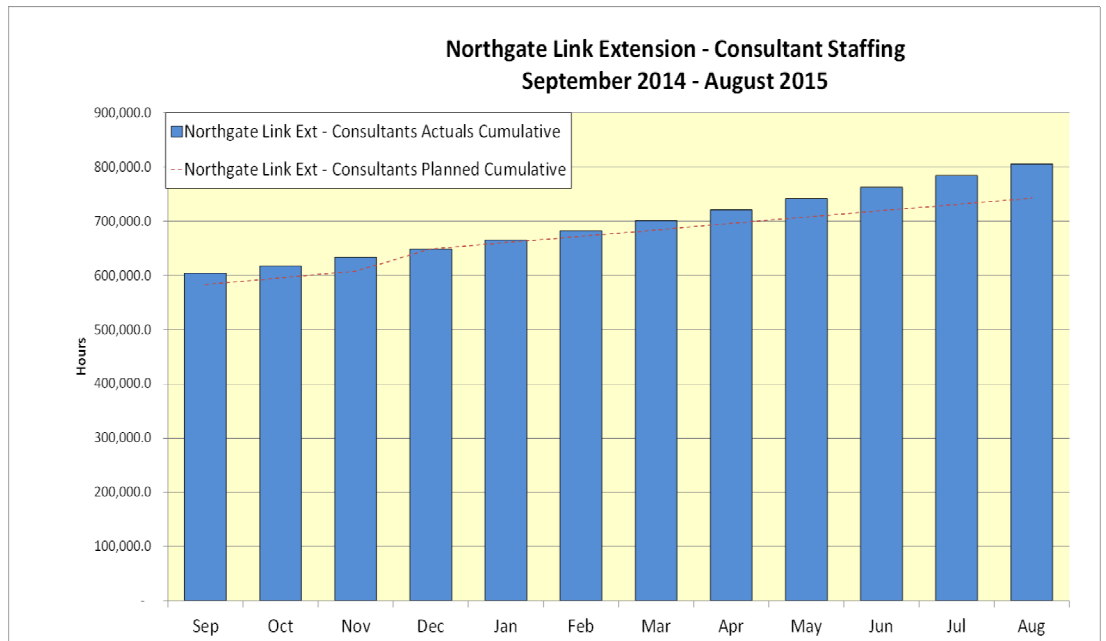
# Link Light Rail Staffing Report



## Northgate Link Extension Staffing

### Consultant Resource Commitments to Northgate Link Extension

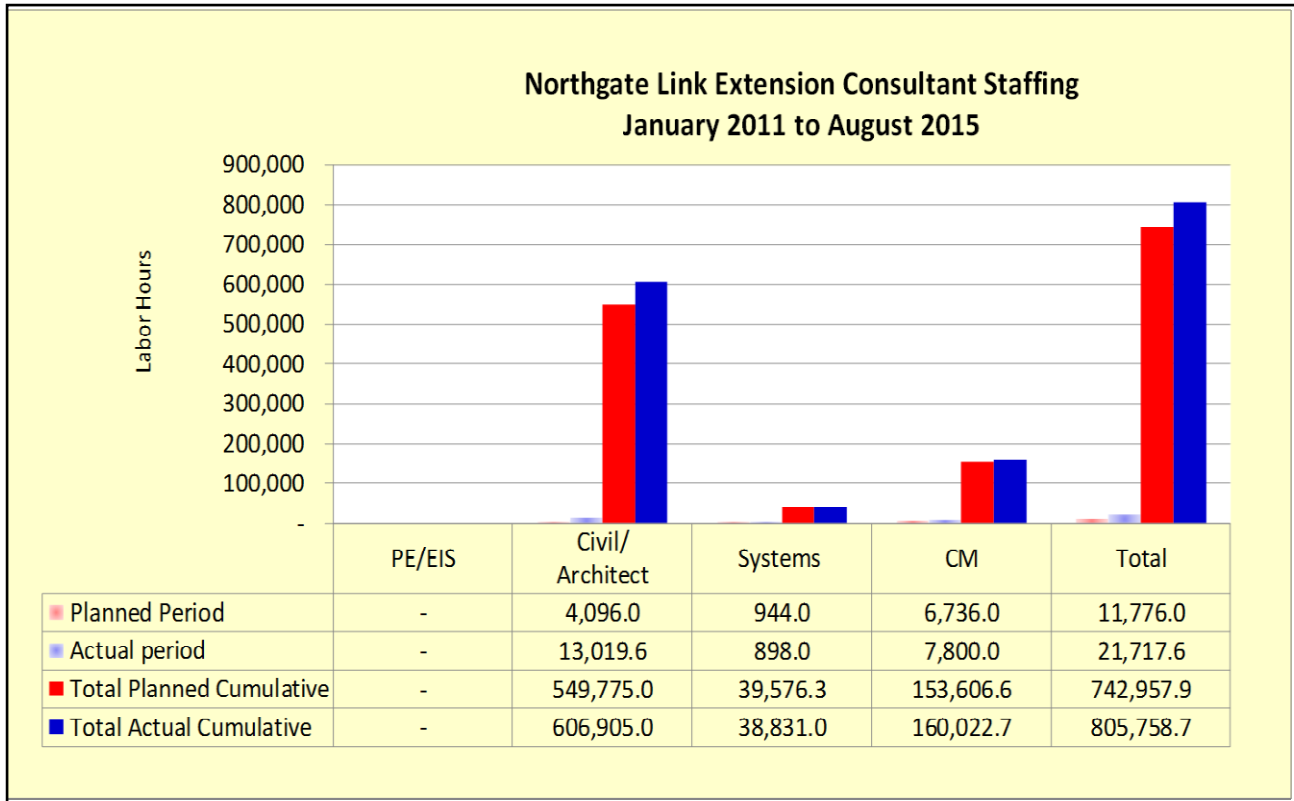
In August 135.7 consultant FTE were assigned to the Northgate Link Extension; consultant staffing was above plan by 84% (62.1 FTE) and was 2% (2 FTE) above July staffing. Cumulatively, since January 2011, average consultant utilization is trending 8.5% (7 FTE/mo.) above plan.



	Labor Hours Jan 2011 - Aug 2015				Current Period Aug 2015			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	742,957.9	805,758.9	62,801.0	108.5%	11,776.0	21,717.6	9,941.6	184.4%
<b>Monthly Average</b>	13,267.1	14,388.6	1,121.4					
<b>Monthly FTE</b>	82.9	89.9	7.0		73.6	135.7	62.1	

## Northgate Link Extension Staffing

### Consultant Resource Commitments to Northgate Link Extension



Consultant utilization by discipline follows:

- Civil/architecture consultant utilization in August (81.3 FTE) decreased 2.9% (2.4 FTE) from July and was 218% (55.7 FTE) above plan. Cumulatively since January 2011, civil engineering/architecture consultant staffing of 67.7 FTE/mo. is 10% (6.4 FTE/mo.) above plan.
- Systems consultant utilization (5.6 FTE) was 5% (0.3 FTE) below plan and 9.1% (0.6 FTE) below July staffing. Since January 2011, average monthly Systems consultant staffing (4.3 FTE/mo) is trending 2% (0.1 FTE/mo.) below plan.
- CM consultant staffing in August (48.8 FTE) was 11.4% (5 FTE) above July staffing and 16% (6.7 FTE) above plan. Cumulatively, since January 2011, average monthly CM consultant staffing (17.9 FTE/mo.) is trending 4% (0.7 FTE/mo.) above plan.
-

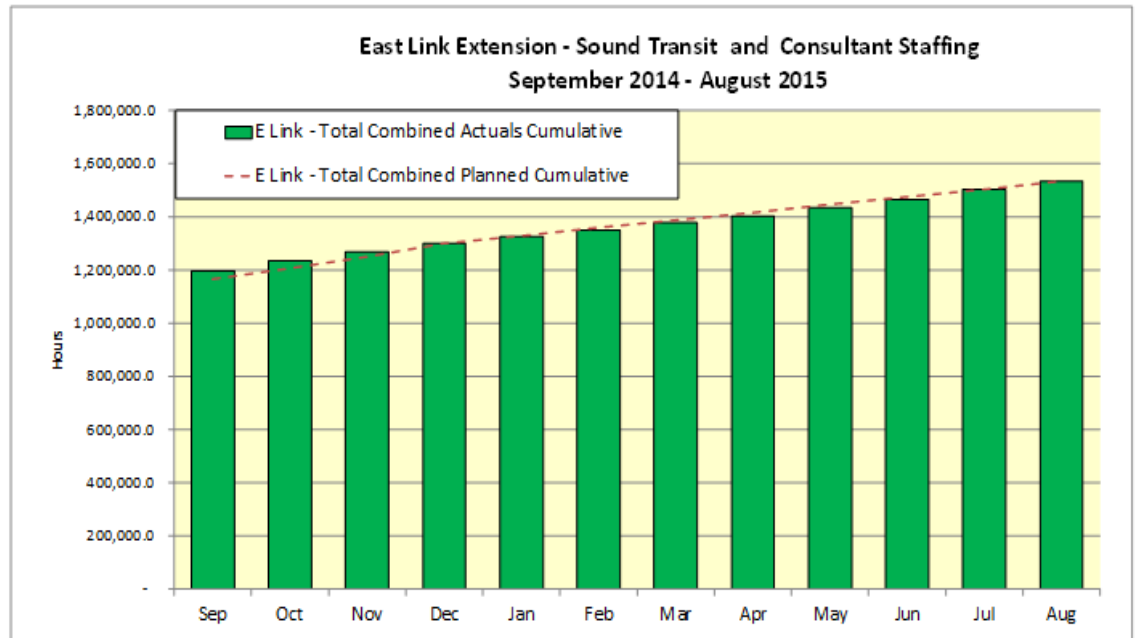
# Link Light Rail Staffing Report



## East Link Extension Staffing

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

Staffing for the East Link Extension in August (210.8 FTE) decreased 3% (6.1 FTE) from July and was 16% (28.4 FTE) above plan. Average year to date staffing of 179 FTE/mo. is 2% (3.4 FTE/mo.) below plan; cumulatively since January 2011, average monthly staffing is trending with plan.

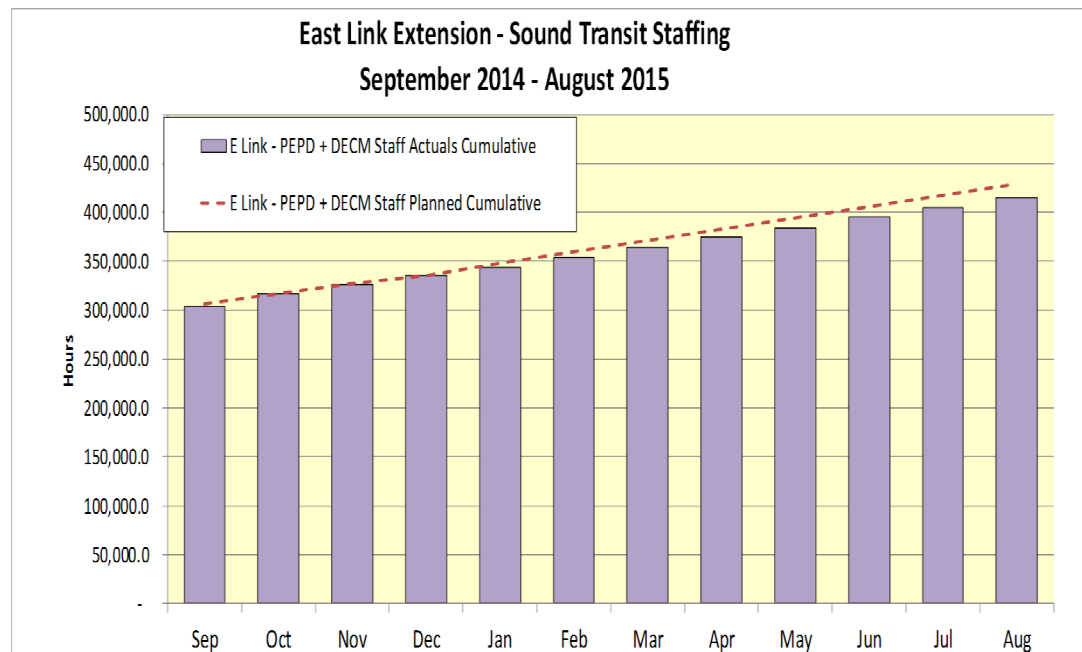


	Labor Hours Jan 2011 - Aug 2015				Current Period Aug 2015			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	1,533,754.7	1,535,485.5	1,730.8	100.1%	29,184.0	33,722.6	4,538.6	115.6%
<b>Monthly Average</b>	27,388.5	27,419.4	30.9					
<b>Monthly FTE</b>	171.2	171.4	0.2		182.4	210.8	28.4	

## East Link Extension Staffing

### Internal Resource Commitments to East Link Extension

During August, internal staffing for the East Link Extension (61.3 FTE) decreased 5% (3.3 FTE) from July and was 16% (11.9 FTE) below plan. Cumulatively, since January 2011, average monthly internal staffing is trending 3.4% (1.6 FTE/mo.) below plan.



	Labor Hours Jan 2011 - Aug 2015				Current Period Aug 2015			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	429,653.4	415,211.5	-14,442.0	96.6%	11,712.0	9,808.5	-1,903.5	83.7%
<b>Monthly Average</b>	7,672.4	7,414.5	-257.9					
<b>Monthly FTE</b>	48.0	46.3	-1.6		73.2	61.3	-11.9	

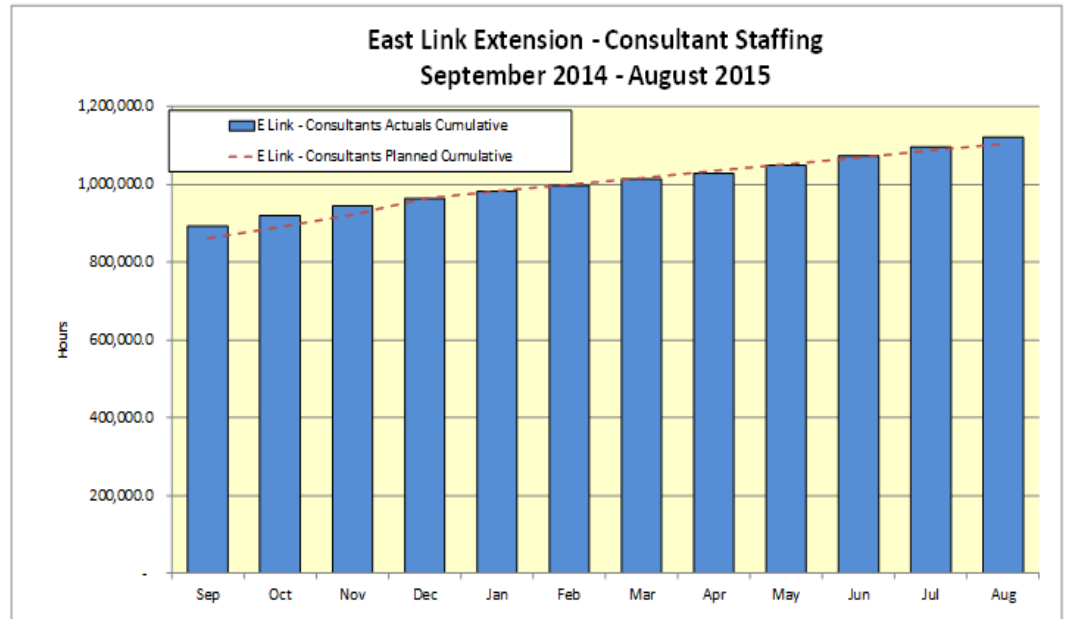
# Link Light Rail Staffing Report



## East Link Extension Staffing

### Consultant Resource Commitments to East Link Extension

There were 149.5 consultant FTE assigned to the East Link Extension during August. Consultant staffing decreased 2% (2.9 FTE) from July and was 37% (40.3 FTE) above plan. Cumulatively since January 2011, average monthly consultant staffing is trending with plan.

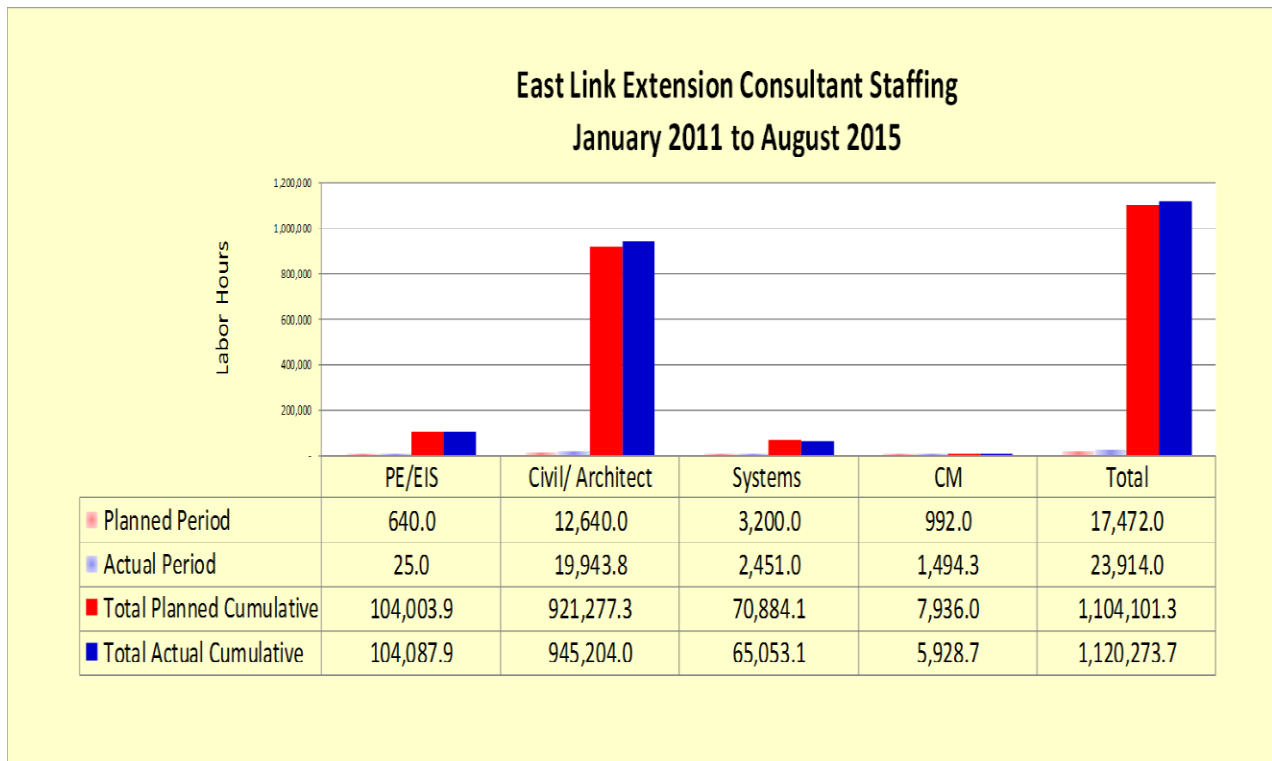


	Labor Hours Jan 2011 - Aug 2015				Current Period Aug 2015			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	1,104,101.3	1,120,274.1	16,172.8	101.5%	17,472.0	23,914.1	6,442.1	136.9%
<b>Monthly Average</b>	19,716.1	20,004.9	288.8					
<b>Monthly FTE</b>	123.2	125.0	1.8		109.2	149.5	40.3	

## East Link Staffing

### Consultant Resource Commitments to East Link, continued

In August civil engineering consultant staffing (124.7 FTE) was 83% of consultant staffing and 58% (45.7 FTE) above plan. Systems consultant staffing (15.3 FTE) was 11% (3 FTE) below July staffing and remained below plan by 23% (4.7 FTE). Preliminary Engineering (PE) consultant staffing for August (0.2 FTE) was 96% (3.89 FTE) below plan and Construction Management consultant staffing (9.3 FTE) was 51% (3.1 FTE) above plan.





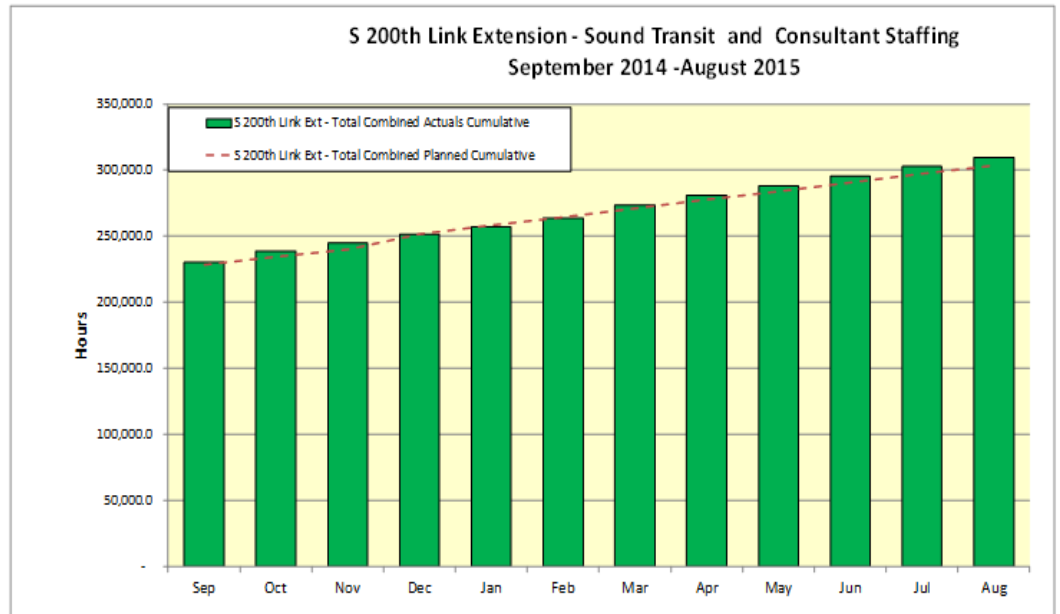
# Link Light Rail Staffing Report



## S. 200th Link Extension Staffing

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

Staffing for the South 200th Link Extension in August (43 FTE) decreased 9% (4.2 FTE) from July and was above plan by 6% (2.3 FTE); average year to date staffing of 45.5 FTE/mo. is 12% (4.8 FTE/mo.) above plan. Since January 2011, average monthly internal and consultant staffing is trending with plan.

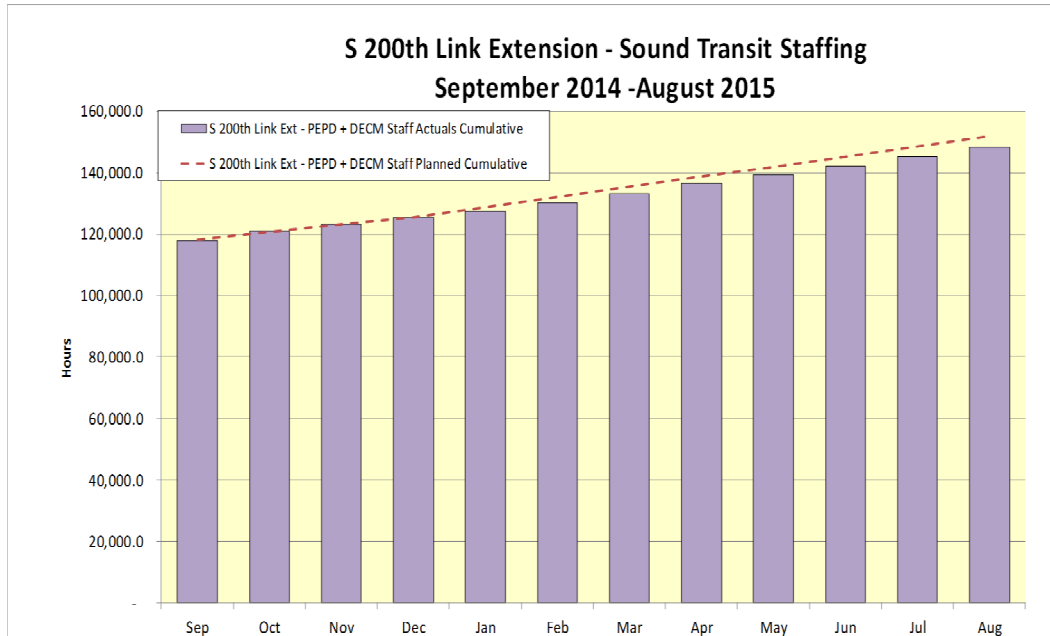


	Labor Hours Jan 2011 - Aug 2015				Current Period Aug 2015			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	303,513.6	309,576.0	6,062.4	102.0%	6,512.0	6,883.0	371.0	105.7%
<b>Monthly Average</b>	5,419.9	5,528.1	108.3					
<b>Monthly FTE</b>	33.9	34.6	0.7		40.7	43.0	2.3	

## S. 200th Link Extension Staffing

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

Internal staffing in August (19.3 FTE) was 2% (0.3 FTE) above July staffing and 6% (1.3 FTE) below plan. Cumulatively, since January 2011, average monthly internal staffing is trending 2.3% (0.4 FTE/mo.) below plan.



	Labor Hours Jan 2011 - Aug 2015				Current Period Aug 2015			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	151,872.9	148,385.2	-3,487.7	97.7%	3,296.0	3,095.0	-201.0	93.9%
<b>Monthly Average</b>	2,712.0	2,649.7	-62.3					
<b>Monthly FTE</b>	17.0	16.6	-0.4		20.6	19.3	-1.3	

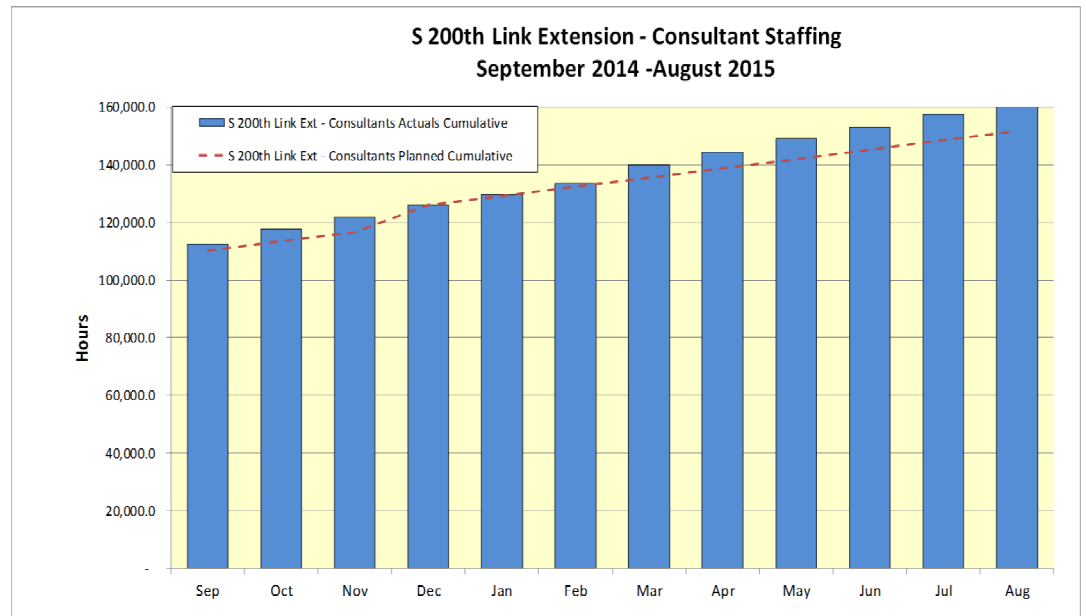
# Link Light Rail Staffing Report



## S. 200th Link Extension Staffing

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

Consultant staffing on the S. 200th Link Extension in August (23.7 FTE) decreased 16% (4.5 FTE) from July and was 18% (3.6 FTE) above plan. Cumulatively since January 2011, average consultant staffing is trending 6% (1 FTE/mo.) above plan.

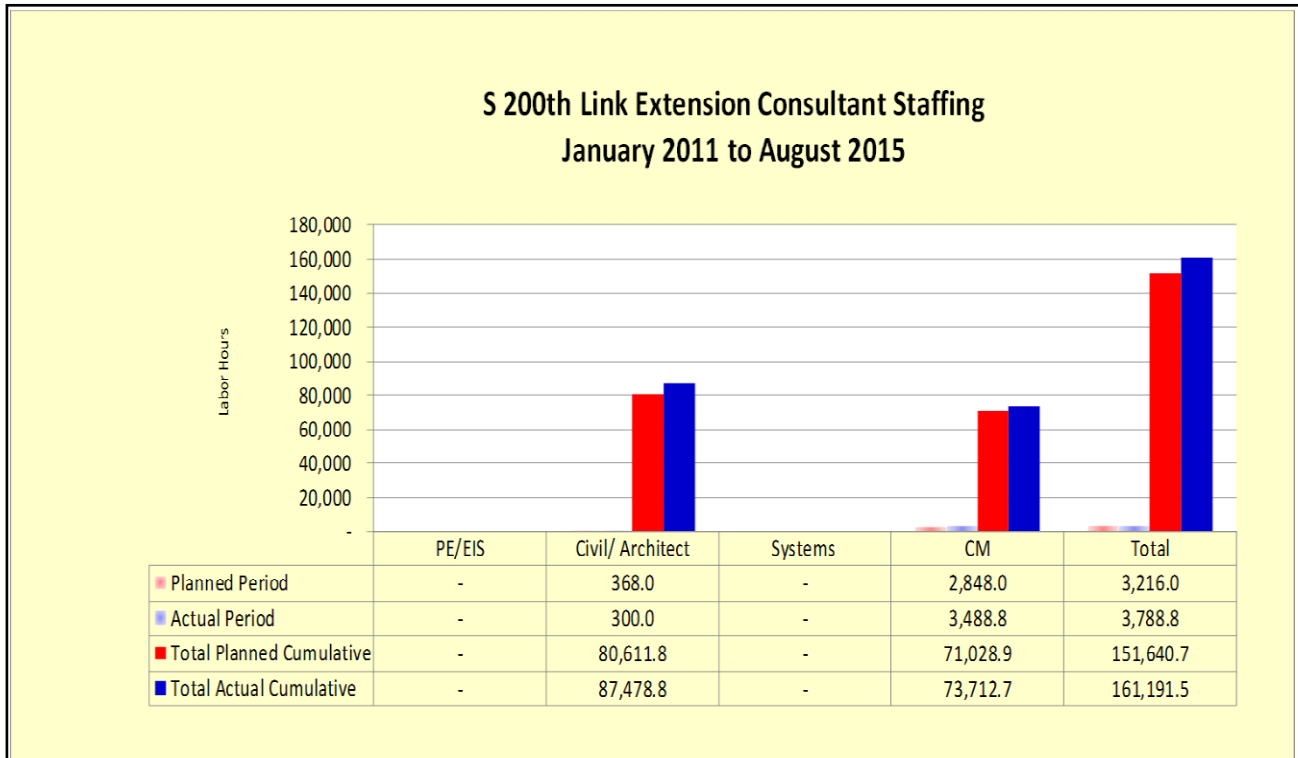


	Labor Hours Jan 2011 - Aug 2015				Current Period Aug 2015			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	151,640.7	161,190.8	9,550.1	106.3%	3,216.0	3,788.0	572.0	117.8%
<b>Monthly Average</b>	2,707.9	2,878.4	170.5					
<b>Monthly FTE</b>	16.9	18.0	1.1		20.1	23.7	3.6	

## S. 200th Link Extension Staffing

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

Design/build project management consultants (21.8 FTE) accounted for 92% of consultant staffing in August; additional consultant staff (1.9 FTE) provided civil and architectural engineering support for on-going construction.



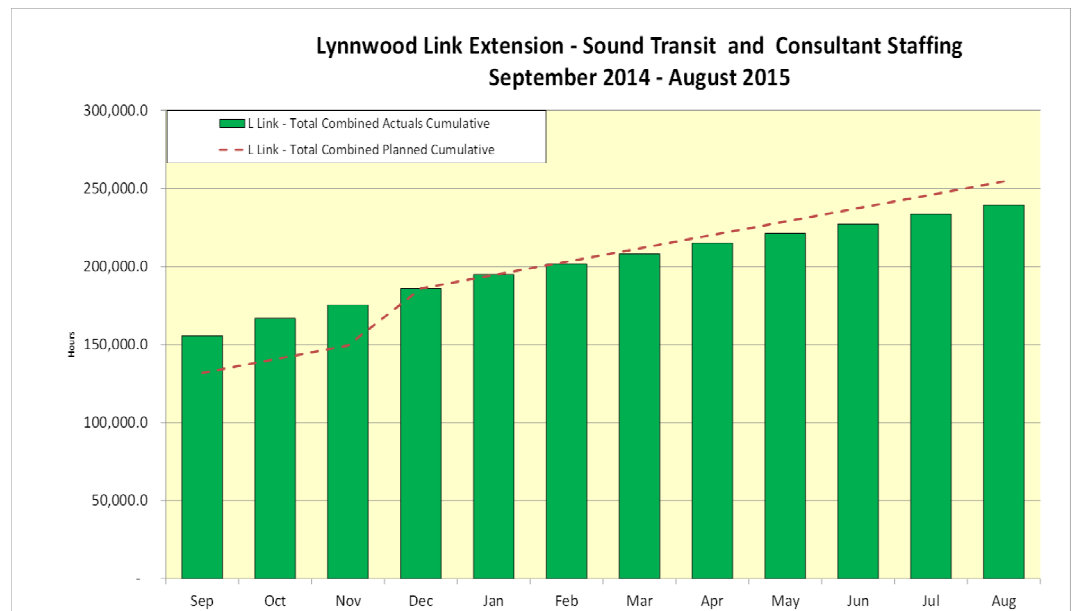
# Link Light Rail Staffing Report



## Lynnwood Link Extension Staffing

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

During August there were 20.6 consultant and 15.7 internal FTE (68% of plan) assigned to the Lynnwood Link Extension. Internal staffing for August was 8% (1.3 FTE) below July staffing and 41% (10.9 FTE) below plan. Consultant staffing (20.6 FTE) was 5% (1.1 FTE) below July staffing and 24% (6.4 FTE) below plan. All consultant staff assigned to the project are supporting preliminary engineering. Average year to date project staffing (41.6 FTE/mo.) is 22% (12 FTE/mo) below plan; cumulatively since January 2013, staffing for the Lynnwood Link Extension (46.7 FTE/mo.) is 6% (3 FTE/mo.) below plan.



	Labor Hours Jan 2013 - Aug 2015				Current Period Aug 2015			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
<b>No. of Hours</b>	254,496.1	239,244.2	-15,251.9	94.0%	8,576.0	5,812.3	-2,763.8	67.8%
<b>Monthly Average</b>	7,953.0	7,476.4	-476.6					
<b>Monthly FTE</b>	49.7	46.7	-3.0		53.6	36.3	-17.3	

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### ACRONYMS

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

ACRONYMS, continued

LRRP	Light Rail Review Panel
LRT	Light Rail Transit
LRV	Light Rail Vehicle
LTK	LTK Engineering Services
MACC	Maximum Allowable Construction Cost
MDA	Major Discharge Authorization
MLK	Martin Luther King, Jr. Way
MOA	Memorandum of Agreement
MOS	Minimum Operable Segment
MOU	Memorandum of Understanding
MPPCV	Major Public Project Construction Variance
MRB	Material Review Board
MTP	Montlake Triangle Project
MUP	Master Use Permit
NB	Northbound
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
OTC	Overlake Transit Center
PE	Preliminary Engineering
PEP	Project Execution Plan
PEPD	Planning, Environment and Project Development
PMOC	Project Management Oversight Consultant
PSST	Pine Street Stub Tunnel
QA	Quality Assurance
QC	Quality Control
QTR	Quarter
RE	Resident Engineer
RFC	Request for Change
RFD	Request for Deviation
RFI	Request for Information
RFP	Request for Proposal
RFQ	Request for Qualifications
RIR	Recordable Injury Rates

ACRONYMS, continued

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

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