# **Progress Report Link Light Rail Program**



Preparation for track plinth pour for S. 200th Link Extension

**January | 2015** 





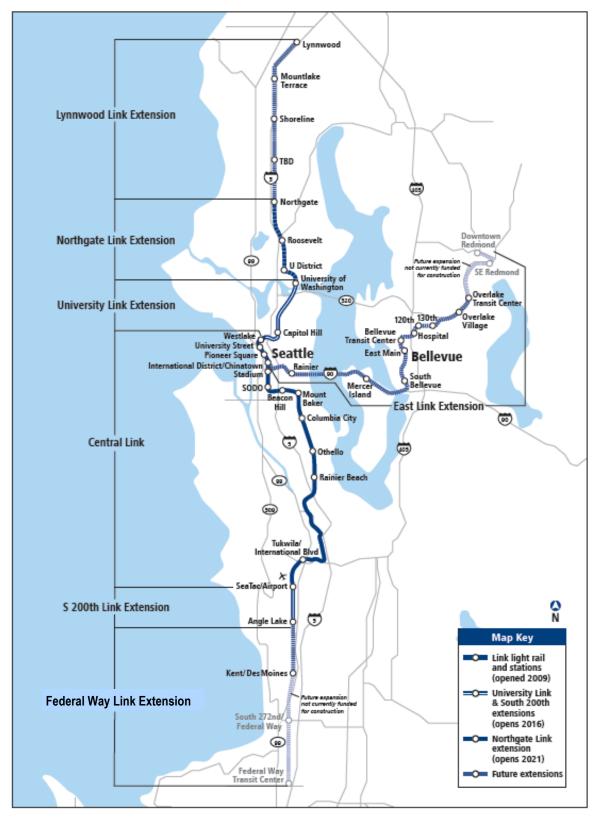




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Map of Sound Transit's current and future light rail projects.

# Link Light Rail Program Overview



### **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.

**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. The draft environmental impact statement (DEIS) was published in July 2013.

**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 Overlake Transit Center. Revenue service to the Overlake Transit Center is forecast for early 2023 with a tunnel route in Downtown Bellevue.

**Initial Segment**: Completed 13.9-mile light rail line between downtown Seattle and South 154th Street in the City of Tukwila. Revenue service began on July 18, 2009.

**Airport Link**: Completed 1.7-mile extension of the Initial Segment to Sea-Tac International Airport. Revenue service began on December 19, 2009.

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

**Federal Way Link Extension:** Sound Transit has initiated studies to identify and evaluate routing and station location requirements to inform conceptual engineering and environmental review 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.

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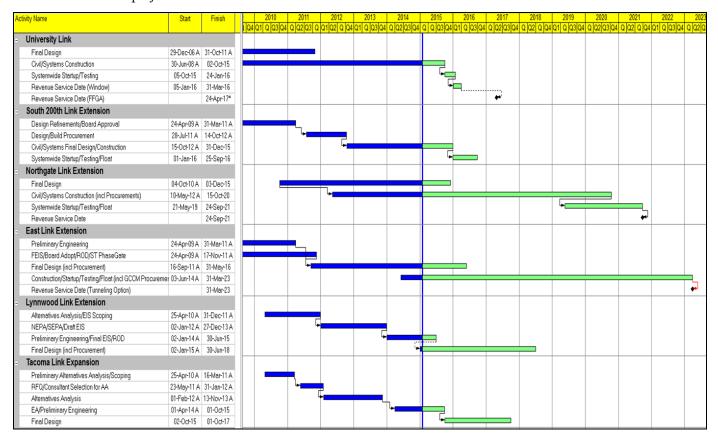
#### **Program Budget**

Project	Adopted Budget	Committed to Date	Incurred to Date
University Link <sup>(3)</sup>	\$1,947.7	\$1,656.5	\$1,507.1
Northgate Link Extension <sup>(2, 3)</sup>	\$2,131.4	\$768.5	\$412.8
Lynnwood Link Extension <sup>(1)</sup>	\$57.1	\$38.8	\$20.6
East Link <sup>(2)</sup>	\$798.3	\$321.6	\$274.2
Initial Segment <sup>(4)</sup>	\$2,433.7	\$2,323.7	\$2,296.3
Airport Link <sup>(4)</sup>	\$261.6	\$261.3	\$260.8
S. 200th Link Extension <sup>(3)</sup>	\$383.2	\$299.2	\$192.2
Federal Way Link Extension(1)	\$42.0	\$14.5	\$13.2
Tacoma Link Expansion (1,5)	\$5.8	\$4.6	\$4.0
Link Operations & Maintenance Satellite Facility <sup>(1)</sup>	\$36.8	\$32.5	\$27.7
Total	\$8,097.6	\$5,721.2	\$5,008.9

Table figures in millions (1) Preliminary Engineering Phase; (2) Final Design Phase; (3) Construction Phase; (4) In Service, (5) Updated Quarterly.

### **Program Schedule**

Schedules for active projects are summarized below.



Changes this period: No changes this period.

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### Scope

**Limits**: 3.15-mile extension of the Initial Segment

light rail transit (LRT) system from the Pine Street Stub Tunnel (PSST) in downtown Seattle to University of Washington (UW) cam-

pus near Husky Stadium.

Tunnels: Two twin bored tunnels. Two contract seg-

ments: U220 starts at Husky Stadium, continues beneath SR 520 and the Lake Washington Ship Canal and south to the Capitol Hill underground station. U230 commences at Capitol Hill Station and proceeds south un-

der the I-5 freeway to the PSST.

**Stations**: 2 underground center platform stations –

Capitol Hill (U240) and University of Washington (U250). U240 is approximately 65' underground with three station entrances. U250 is about 100' below ground, with three station entrances and connections to the UW

campus by a pedestrian bridge.

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

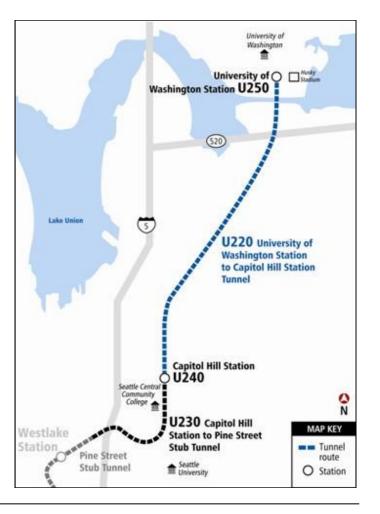
tion electrification, and SCADA communica-

tions

Budget: \$1.948 billion including finance cost (capital

subtotal of \$1.756 billion)

**Schedule**: 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. Sound Transit continues to visit the Contractor's facilities to monitor and obtain status of subcontractors SCADA software development. The interim milestones: Milestone 5 (Train Control DSTT) was successfully met on November 15, 2014 and the system continues to be stable. MS 5A (Beacon Hill Cutover) is anticipated in March 2015 with a go/no go decision anticipated in early March. MS 5B (DSTT EVS/BMS & U-Link EVS Cutover) will be in the Summer 2015 and the collaboration with U240 contractor will be critical to achieve MS 5B.
- U830 Systems—Demolition of the demising wall in Pine Street Stub Tunnel will connect the U-Link tunnels to existing Link tunnel operations. Coordination with all stakeholders especially with the Seattle Fire Department is critical.
- LRV Fleet Wide Repairs Fleet wide defect was discovered in the LRVs' traction motor/gearbox unit. Repairs on the older LRV must be made immediately as they are now unreliable. Without sufficient reliable LRVs by Revenue Service or Pre-Revenue Service, U-Link may be challenged to operate with six- minutes headways. ST Board approved an agency emergency declaration to mitigate this problem and this declaration is being implemented. ST is collaborating with Kinkisharyo, the LRV manufacturer, in aligning all necessary steps to expedite and fully repair this issue. Cost will be tracked and isolated. The minimal goal is to at least repair enough LRVs to operate with six-minutes headways.
- Early Opening: Projection to open for Revenue Service sometime during the 1st QTR 2016 continues to be on target. All project float has been released. Testing and Start-Up Period compressed with the critical path running through U240 and U830—any impact or delay will be difficult to absorb as there is no more float. Coordination with regional stakeholders has begun through rail activation activities. A comprehensive qualitative risk register related to Rail Activation has been compiled and will be revisited and updated in March.

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### **Project Cost Summary**

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

WBS Phase Elements	Baseline Budget	Ad	Current lopted Budget	Со	mmitment to Date*	ln	curred to Date	Es	t. Final Cost (EFC)	Ad	opted Budget vs. EFC
ADMINISTRATION	\$ 115.23	\$	113.55	\$	63.96	\$	65.73	\$	103.56	\$	10.00
PRELIMINARY ENGINEERING	\$ 24.39	\$	24.26	\$	24.26	\$	24.26	\$	24.26	\$	-
FINAL DESIGN	\$ 77.94	\$	89.31	\$	86.24	\$	82.48	\$	89.31	\$	(0.00)
CONSTRUCTION SERVICES	\$ 68.53	\$	95.81	\$	83.70	\$	73.53	\$	93.80	\$	2.01
3rd PARTY AGREEMENTS	\$ 18.65	\$	18.65	\$	12.08	\$	10.72	\$	17.77	\$	0.88
CONSTRUCTION	\$ 1,180.00	\$	1,158.18	\$	969.73	\$	891.39	\$	1,047.70	\$	110.48
VEHICLES	\$ 103.91	\$	103.91	\$	99.19	\$	99.18	\$	101.91	\$	2.00
ROW	\$ 167.33	\$	152.33	\$	125.63	\$	125.59	\$	127.29	\$	25.04
Capital Total	\$ 1,755.97	\$	1,756.01	\$	1,464.79	\$	1,372.88	\$	1,605.59	\$	150.41
FINANCE COST	\$ 191.71	\$	191.71	\$	191.71	\$	134.20	\$	191.71	\$	-
Project Total	\$ 1,947.68	\$	1,947.72	\$	1,656.50	\$	1,507.08	\$	1,797.30	\$	150.41

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

In January, the projected Estimated Final Cost (EFC) including Finance Cost continues to be about \$1.8B. During this period, approximately \$6.5M was incurred, increasing the project Incurred to Date amount to over \$1.37B (Finance Cost excluded). Direct construction cost accounted for about 75% of the cost incurred in December at \$4.9M essentially split three ways between Trackwork, Systems and Station Finishes. The direct construction EFC trends approximately \$1B. This trend continues to be intact as both the high risk tunnel scope are now completed. The Capitol Hill Station (U240) Contractor continues west entry work /pedestrian concourse and station mechanical/electrical work, UW Station (U250) continues on mechanical/electrical work and commissioning activities and the Systems (U830) Contractor continues track work, Signals and SCADA development. The Total Incurred to Date for the Construction Phase is over \$891M with a current commitments is now almost \$969M. Cost for LRV is approximately \$99.2M and continues to be working on repairs to the traction motor and gear unit.

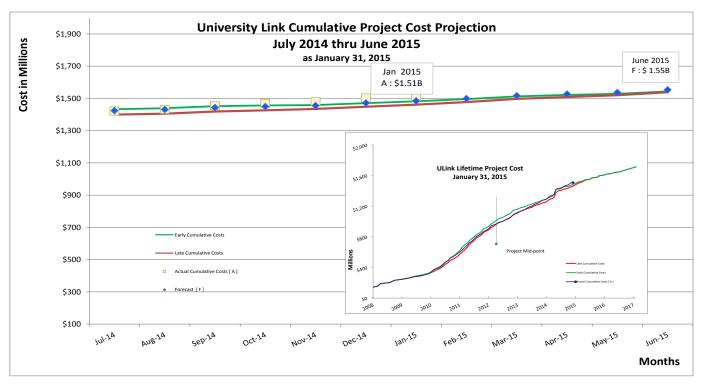
Construction EFC under the SCC format for this period remains stable and relatively unchanged at about \$1B. Construction phase expenditures in January is approximately \$4.6M. This period, U-Link construction cost is attributed almost equally to Trackwork, Systems and Stations. U240 station continues to west entry work and station, mechanical and electrical work and U250 station essentially complete with increasing focus towards commissioning. All systems work are on schedule towards completion in 4th QTR 2015.

Project Elements by SCC	Baseline	Budget	Add	Current opted Budget	Coi	mmitment to Date*	In	curred to Date	Es	timated Final Cost (EFC)	Add	opted Budget vs. EFC
10 Guidew ay & Track Elements	\$	626.83	\$	450.46	\$	455.80	\$	455.16	\$	462.41	\$	(11.96)
20 Stations	\$	366.33	\$	350.75	\$	336.04	\$	314.31	\$	354.02	\$	(3.27)
30 Support Facilities: Yards, Shops	\$	7.01	\$	24.83	\$	21.51	\$	9.81	\$	24.83	\$	0.00
40 Sitew ork & Special Conditions	\$	59.03	\$	67.49	\$	54.30	\$	50.00	\$	61.04	\$	6.45
50 Systems	\$	69.63	\$	116.44	\$	97.52	\$	58.90	\$	104.11	\$	12.33
Construction Subtotal (SCC 10-50)	\$ 1	1,128.82	\$	1,009.97	\$	965.16	\$	888.20	\$	1,006.41	\$	3.56
60 Row, Land, Existing Improvements	\$	167.33	\$	125.77	\$	125.63	\$	125.59	\$	125.77	\$	-
70 Vehicles	\$	99.76	\$	100.06	\$	99.23	\$	99.18	\$	99.76	\$	0.30
80 Professional Services	\$	306.41	\$	346.18	\$	274.76	\$	259.92	\$	342.68	\$	3.50
90 Unallocated Contingency	\$	53.65	\$	174.04	\$	-	\$	-	\$	30.93	\$	143.11
Capital Cost Total (SCC 10-90)	\$ 1	1,755.97	\$	1,756.03	\$	1,464.79	\$	1,372.88	\$	1,605.56	\$	150.47
100 Finance Cost	\$	191.71	\$	191.71	\$	191.71	\$	134.20	\$	191.71	\$	-
Project Total	\$ 1	1,947.68	\$	1,947.74	\$	1,656.50	\$	1,507.08	\$	1,797.27	\$	150.47

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

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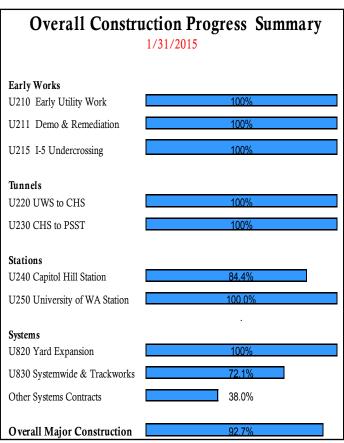




Incurred to date for Construction under the SCC is over \$888M. Total capital cost incurred to date including non -construction cost (SCC 60 thru 90) is over \$1.37B or about 78% of total project budget scoped (excluding Finance Cost).

Total cost incurred at the end of January 2015 including Finance Cost is about \$1.5B. The project financing cost incurred to date about \$135M with an annual projection of \$28M to incur in 2015. There was a minor mathematical error discovered in the financing cost calculation in December 2014 but was discovered and corrected in January 2015. The next finance cost update will be for the end of 1st QTR 2015. Overall, University Link cost to date is projected to be approximately \$1.5B by June 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.



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.

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### **Cost Contingency Management**

Project contingencies continue to remain at a healthy level of about \$277M due to the favorable construction bidding climate, ROW acquisition cost trends, diligent project risk management practices and excellent tunneling conditions. December's overall contingency notched down by about \$3 million due to change orders and the execution of amendment for addition Design Support During Construction consultant. Contingency level continues to trend well above the Planned Contingency Drawdown; the projected planned balance between the end of 4th QTR 2014 and the end of 1st QTR 2015 ranges from \$87M and \$93M 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 is now approaching 92% complete. Barring any catastrophic event, there is a high likelihood that this contingency trend will remain intact.

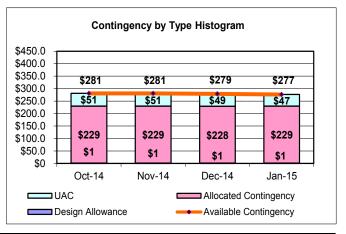
Design Allowance: The balance of design allowance has been reduced to less than \$1M and is consistent with the project cycle as all the major design has been completed. The level of design allowance currently represents less than one-half percent of the total remaining scope in the project that has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

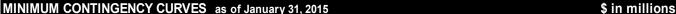
Allocated Contingency: Allocated Contingency continues to remain stable approximately at \$229M with the recent successful negotiation of the Fare Collection contract.

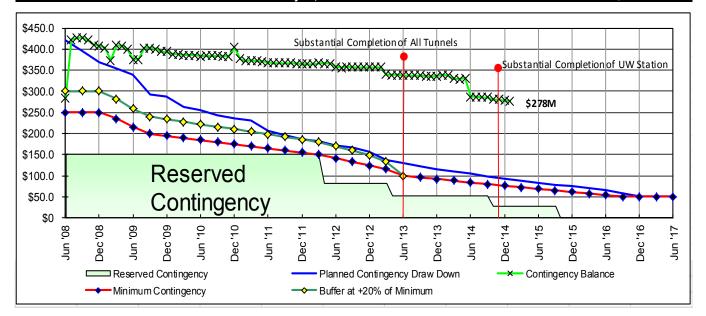
*Unallocated Contingency (UAC):* The total UAC balance is at \$47M and continues to remain stable compared to the Baseline Cost Estimate amount of \$53.7M considering that the construction is now approaching 92% complete.

Contingency	В	CE	Current Status			
Status	Amount	% of Total	Remaining Amount	% Remaining Work		
Design Allowance	\$103.9	7.8%	\$1.0	0.9%		
Allocated Contingency	\$264.3	19.8%	\$228.7	214.8%		
Unallocated Contingency	\$53.7	4.0%	\$46.9	44.1%		
Total:	\$421.9	31.6%	\$276.6	259.8%		









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### 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 subtask 40E.

#### **Project Risk Overview:**

The 4th QTR 2014 risk is currently being updated. At the end of the 3rd QTR 2014, U-Link project represents almost 90% construction completion with U220 and U230 Tunnels at Acceptance; U240 Station is now over 74% complete as it reaches basic structure completion and excavation on the West Entry's pedestrian tunnel is well underway. U250 is over 98% completion, and is now focusing on commissioning items while completing landscaping, restoration and the pedestrian bridge. U830 Systems continued work on rail installation in the tunnels; commenced development of specialty track works; ongoing verification for communication and signaling elements approaches 60% complete. Communication work is somewhat behind and is being monitored closely. 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 586 risks, of which 103 were active (483 closed). This quarterly update resulted in a total of 586 risks, of which 95 are active (491 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. While there are no new risks registered for this quarter, activities in the Rail Activation phase has commenced and the University Link team is currently in the process of building a comprehensive qualitative risk register addressing risks related to the project. It is currently in a draft state, this risk register will be included and discussed in the next quarter.

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 Long Lead Items

Long lead specialty materials and planning that are necessary to complete for timely installation signaling and communication end devices.

#### • 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

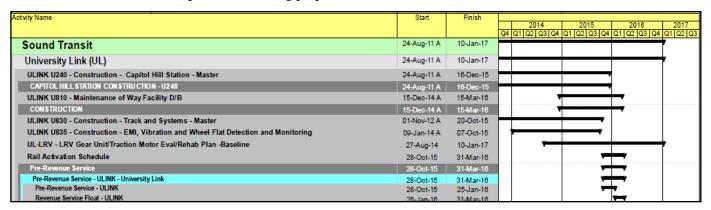
A latest defect was discovered in the Traction Motor/Gear Unit in the LRVs. Repairs require long lead materials and careful coordination to minimize any impacts to current operations. If there are insufficient reliable LRVs by Revenue Start, the 6 minutes headways promised for U-Link will be in jeopardy.

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### **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 and the Contractor is working through the punch-list, expected completion is June 2015. The U240 Contractor has returned the Pine Street site to U830. The U830 Contractor has completed rail installation and the floating slab. Acceleration of OCS activities is underway to commence an early start to System Integration Activities in March. U835 EMI/Vibration design is underway. All U860 Fiber Retrofit, upgrades and fiber installation have been completed. The U810 MOW contract has been awarded and excavation and foundation activities are now underway.

The targeted Revenue Service window is now the 1st QTR 2016 with the removal of 169 days of float contingency from the Master Schedule. The Rail Activation Schedule has been linked to the University Link Master Schedule this period and the critical path will now be tracked as schedule is updated monthly. The rehabilitation of the LRV's has been added to the Master Schedule this period for tracking purposes.



### **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 and U230, have achieved Substantial Completion and U830 has completed rail charging at the UW Station and now CHS Station. Plinth rail installation is complete in the NB and SB tunnel between CHS and PSST. Sound Transit is tracking multiple critical paths through the project as U-Link nears completion in early 2016. The critical path is progressing through U240 CHS Systems Rooms access and the handover of these rooms to U830 for equipment installation and testing and commissioning. U830's Initial Segment SCADA retrofit activities are closely being monitored at this time due to it's criticality to system-wide testing for the U-Link Extension. The Rail Activation Schedule has been linked to the University Link Master Schedule as the critical path is tracked through System Integration Testing by U830 and the commencement of Pre-Revenue Service for U-Link.

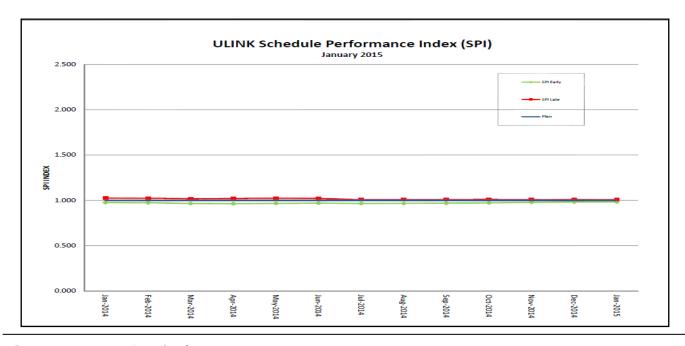
Name ( ) The state of the state	Remaining Duration	Start	Finish	2015 2016 20 24 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q
Sound Transit	424d	17-Sep-14 A	31-Mar-16	
University Link (UL)	424d	17-Sep-14 A	31-Mar-16	<del>                                     </del>
ULINK U830 - Construction - Track and Systems - Master	173d	17-Sep-14 A	06-Oct-15	<del>                                     </del>
Construction	173d	17-Sep-14 A	06-Oct-15	<b></b>
Communication	163d	17-Sep-14 A	22-Sep-15	
Testing and Commissioning	10d	23-Sep-15	06-Oct-15	▼
System Integration Test - CCS, VHLC, TC incl Final Pine Street Configuration (ST Test 504)	10d	23-Sep-15	06-Oct-15	
Rail Activation Schedule	191d	23-Sep-15	31-Mar-16	
Pre-Revenue Service	156d	28-Oct-15	31-Mar-16	<b>     </b>
Pre-Revenue Service - ULINK - University Link	158d	28-Oct-15	31-Mar-16	<u> </u>
Pre-Revenue Service - ULINK	90d	28-Oct-15	25-Jan-16	<del></del>
Pre-Revenue Service - Commencement - ULINK - October 21, 2015	0d	28-Oct-15*		<b>↑</b>   <b>♦</b>
Pre-Revenue Service - Complete and Readiness Certified - ULINK	0d		25-Jan-16*	<b>□  •  </b>
Revenue Service Float - ULINK	66d	26-Jan-16	31-Mar-16	<b>■</b>
Task Group 3.0 - System Testing and Commissioning	25d	23-Sep-15	27-Oct-15	<b>      </b>
3.2 - System Testing and Commissioning - Testing	25d	23-Sep-15	27-Oct-15	<b>T</b>
ULINK - System Integration and Testing	25d	23-Sep-15	27-Oct-15	W
Task Group 4.0 - Rail Operations	90d	28-Oct-15	25-Jan-16	<b>I</b>   <del></del>
4.5 - Rail Operations - Simulate Revenue Service	90d	28-Oct-15	25-Jan-16	<u> </u>
ULINK	90d	28-Oct-15	25-Jan-16	<u> </u>
ULINK Simulate Revenue Service	60d	28-Oct-15	26-Dec-15	
ULINK Pre-Revenue Service Float	30d	27-Dec-15	25-Jan-16	

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#### **Schedule Performance Index**

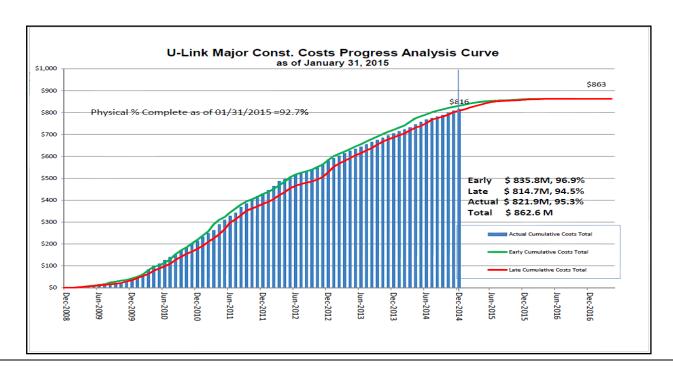
The Schedule Performance Index (SPI) for U-Link remains at 0.98 as rail completes and OCS installation production has increased for the U830 contract. (See details on individual contract sections.) Progress will continue to be monitored closely.



### **Cost Progress Analysis**

U220 and U230 are complete. U250 is complete with punchlist and MTB handrail outstanding.

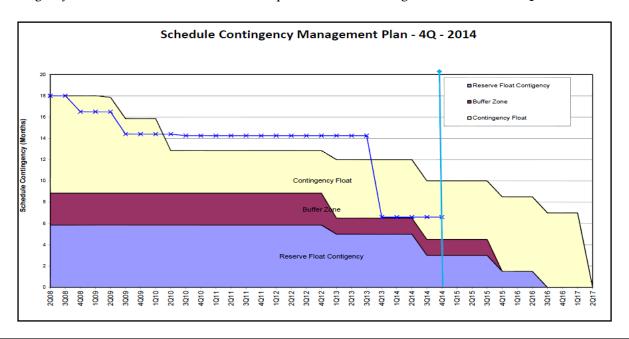
Overall U-Link physical % complete is at 92.7% against 87.1% of contract time expended. The U835 EMI/Wheel Flat Vibration Contract was added to the U-Link Major Const. Progress last period. The graph below shows the progress of major construction contracts cost compared to the early/late projections.



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### **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 Agree- ments	Admin. Settle- ments	Posses- sion and Use	Closings to date	Relocations Required	Relocations Completed
Capitol Hill Station	19	19				19	140	140
Tunnel Easements	223	222				222	1	1
TOTAL	242	241				241	141	141

<u>Capitol Hill Station:</u> The acquisitions and relocations for the station site are complete.

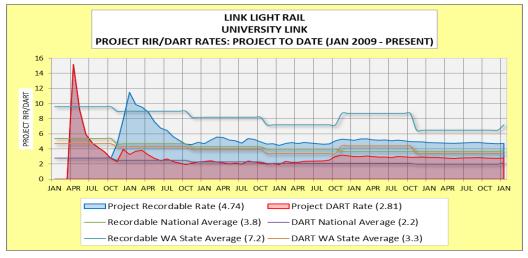
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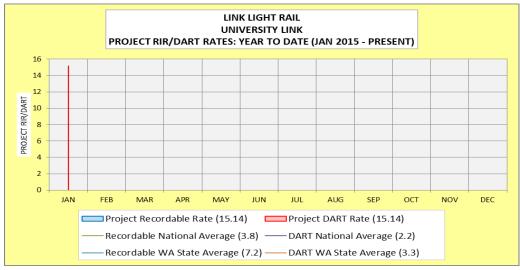
# **Construction Safety**

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

Data/Measure	January 2015	Year to Date	Project to Date
Recordable Injury/Illness Cases	1	1	86
Days Away From Work Cases	1	1	18
Total Days Away From Work	11	11	723
Restricted or Modified Work Cases	0	0	33
Total Days Restricted or Modified Work	0	0	1558
First Aid Cases	0	0	146
Reported Near Mishaps	0	0	228
Ave. Nos. of Employees on Worksite	148	-	-
Total # of Hours (GC & Subs)	13,206	13,206	3,632,115
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	15.14	15.14	4.74
DART Rate	15.14	15.14	2.81
Recordable National Average	3.70	3.70	3.70
DART National Average	2.00	2.00	2.00
Recordable WA State Average	6.50	6.50	6.50
DART WA State Average	3.40	3.40	3.40



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.



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# **Quality Assurance Activities**

#### Activities

- U250: MRB dispositioned a Use-As-Is NCR for a floor slab non conformance.
- U810: MRB dispositioned two (2) Use-As-Is NCRs for pre cast panels concrete did not meet 28 day strength test requirements

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

• None.

#### **Summary**

Description	Jan 2015	Notes
No. of Audits Planned	0	None
No. of Audits Completed	0	None
Reports in Progress	0	None
No. of Audits Post- poned	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
	None this period.	

## **Community Outreach**

- Emailed January U-Link newsletter.
- Delivered notices to Capitol Hill residents and businesses regarding the reopening of Nagle Place to through traffic.
- Attended "Sounding Board Link connections Meeting."

**Business Mitigation** 

- Held monthly ST/Capitol Hill Chamber of Commerce meeting.
- Completed first stage of YCH.com business directory.

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# U220 Contract - TBM Tunnel (UWS to CHS)

#### **Current Progress**

The U220 contract achieved Substantial Completion on June 7, 2013. Continued close-out activities.

# U230 Contract -TBM Tunnel (CHS to PSST)

### **Current Progress**

Substantial Completion was achieved in March 2013. The Contractor completed the punchlist items and continued working on final documentation. Work is 100% complete.

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

#### **Current Period**

• All NCR paperwork are now closed and Acceptance was issued in August 30, 2013.

#### Next Period

Finalize remaining Change Orders to capture remaining Work Directive costs and de-commit unused Provisional Sums.

#### **Closely Monitored Issues**

No remaining issues.

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

#### Current Period

Contract is at Acceptance and is currently in the process of achieving Final Acceptance, which includes close out of contract.

#### Next Period

Close out Activities: Continue working on achieving Final Acceptance. This includes reconciling of all outstanding monies and processing of final payment

#### **Closely Monitored Issues**

None to report.

# **Cost Summary**

Present Financial Status	Amount
U220 Contractor— Traylor Frontier- Kemper Joint Venture (TFK)	
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	98%
Physical Percent Complete:	100%
Authorized Contingency	\$30,917,527
Contingency Drawdown	\$12,233,060
Contingency Index*	2.53

<sup>\*</sup>Physical % complete / % contingency drawn down

### **Cost Summary**

Present Financial Status	Amount
U230 Contractor— JCM Joint Venture	
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	96%
Physical Percent Complete	100%
Authorized Contingency	\$15,355,600
Contingency Drawdown	\$9,896,998
Contingency Index*	1.56

<sup>\*</sup>Physical % complete / % contingency drawn down

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### **U240 Contract** – Capitol Hill Station

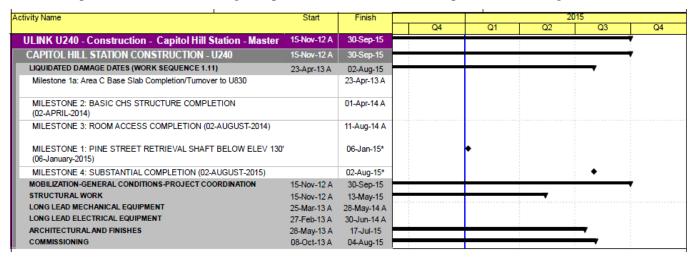
#### **Current Progress**

U240 continued the tunnel closure work at Pine Street this period. West Entry exterior wall work continues; the pedestrian corridor pile drilling operations is complete and shoring installation will continue through base slab installation next period. Eastside of Broadway open to traffic is expected in May 2015. Turnover of major systems rooms to U830 was completed in August 2014. Turnover of Pine Street access back to U830 occurred this period.

Physical % complete is at 83% against 82% contract time expended.

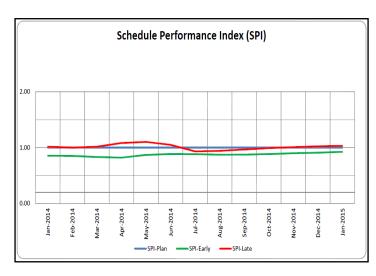
#### Schedule/Critical Path

An early turnover of Emergency Ventilation Fans to U830 for an early commencement of Level 3 commissioning of Systems in the 2nd QTR 2015 is expected to occur. Milestone #4, Substantial Completion is reporting five days of float. The critical path continues to run through the pedestrian corridor and final inspections and testing.



#### Schedule Performance Index

The U240 Schedule Performance Index (SPI) has remains at 0.93. The U240 baseline schedule represented an aggressive schedule based on payment for materials and equipment procured but not yet installed. A review of the contract documents subsequent to the baseline schedule submittal indicated payment for these items can only occur once they are in place. The logic in the schedule has been adjusted since the baseline to recognize this payment process. Production levels and material procurement will continue to be monitored closely.



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#### **Key Activities**

#### **Current Period**

- Continued hanging frame work for ceiling panels on the South mezzanine level and down at the platform level.
- Continued installing escalators and elevators.
- Continued installing tiles.
- Began conducting BMS startup and working on wiring and programing associated BMS controls in multiple electrical rooms.
- Continued excavating and began installing waterproofing at the pedestrian concourse.
- At the West Entry, the Contractor continued setting metal roof panels, erecting interior concrete stem walls.
- Continue final water line connections to the station.
- At Pine Street, continued waterproofing, concrete placement and began removing archway formwork

#### Next Period

- Continue installation of door and hardware.
- Continue work on tiling mezzanine level walls and begin floor tiling at the platform level.
- Begin delivery and installation of the "Jet Kiss" artwork.
- Continued electrical and mechanical work including wire pulling, testing, and pipe connections .
- Continue working on emergency fan commissioning, and system commissioning throughout the station.
- Continue excavating and waterproofing installation for the pedestrian concourse.
- Continue installing metal stud framing along West entry mezzanine level walls and parapet wall caps.
- Pine Street work to be completed, excluding site restoration work.

#### **Closely Monitored Issues**

- Partition wall "inefficiencies" as outlined in RFC 96 continues to be reviewed with Turner.
- A risk contingency request related to formwork removal criteria was received requesting significant funds, and is under review. This was previously submitted under an RFC and denied by Sound Transit.
- A continuing large number of incoming RFC's continue to be received weekly. This continues to be a concerning trend on the project.
- A draft plan for removal of the red construction wall is anticipated by mid-February for review with ST and CM team

#### **Cost Summary**

Present Financial Status	Amount
U240 Contractor - Turner Construction	
Original Contract Value	\$104,850,276
Change Order Value	\$4,274,419
Current Contract Value	\$109,124,695
Total Actual Cost (Incurred to date)	\$90,065,215
Financial Percent Complete:	82%
Physical Percent Complete:	82%
Authorized Contingency	\$10,242,514
Contingency Drawdown	\$4,274,419
Contingency Index	1.95



Concrete placement at West Entry of CHS.

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### U250 Contract - University of Washington Station

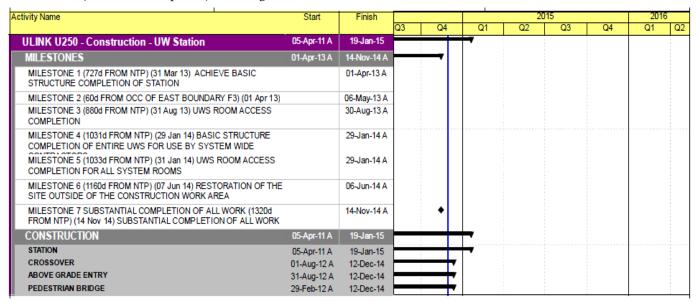
### **Current Progress**

Milestone #7, Substantial Completion, was granted in November 2014. U250 has commenced punchlist work and is expected to be complete by June 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.

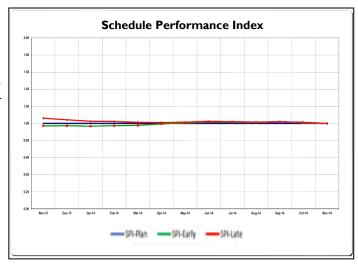
#### Schedule/Critical Path

Milestone #7 (Substantial Completion) has been granted. Punchlist work has commenced.



#### **Schedule Performance Index**

The U250 Schedule Performance Index (SPI) remains at 1.00 this period. Construction progress is trending per plan as the U250 Contractor completes inspections, training and commissioning. Coordination with U830 continues.



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#### **Key Activities**

#### Current Period

- Continued punch list item completion. Items are expected to be complete by the end of February.
- Continued commission test demonstrations.
- Continued final inspections for escalator and elevator operations.
- Continued testing and balancing throughout the building.
- Continued Building Management System (BMS) terminations and testing.

#### Next Period

- Install pedestrian bridge guardrail mockup for approval and commence fabrication of materials.
- Continue Building Management System (BMS) terminations and testing.
- Continue commissioning test demonstrations
- Complete final inspections for elevator and escalator operation.
- Continue punch list item completion efforts.

#### **Closely Monitored Issues**

- The Seattle Department of Transportation (SDOT) has advised that a trench drain and site wall will be required due to drainage concerns with the previously-approved design slope of planter beds adjacent to Montlake Boulevard. ST is pursuing the issue with SDOT.
- Vibrations testing of the smoke exhaust fans on the north end of the project have resulted in alarm-level vibrations with both smoke exhaust fans running simultaneously. Review of the test data by the Engineers of Record were unable to determine the reason for the vibration, and requested the Contractor arrange for review by a vibration specialist to determine the source of the issue.
- The permanent operating permits at Elevators 1 and 2 could be held up pending L&I confirmation of hoist beam connections designed by Kone.

#### **Cost Summary**

Present Financial Status	Amount
U250 Contractor - Hoffman Construction Co.	
Original Contract Value	141,745,898
Change Order Value	6,913,494
Current Contract Value	148,659,392
Total Actual Cost (Incurred to date)	144,831,455
Financial Percent Complete:	97%
Physical Percent Complete:	97%
Authorized Contingency	7,087,295
Contingency Drawdown	6,913,494
Contingency Index	1.0



Completing punch list for UWS..

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

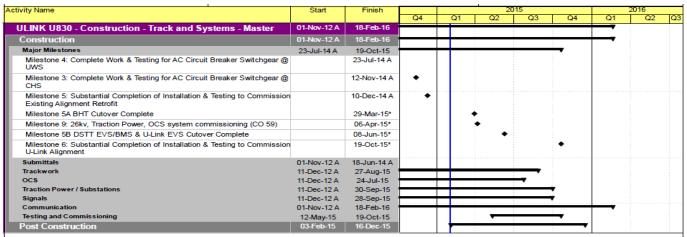
#### **Current Progress**

Track construction is now 100% complete with the installation of the crossover and the completion of the floating slab. Permanent power has been established at the UWS and CHS station. OCS installation has been accelerated and is well underway. Coordination between station contractors continues. The first cutover of the SCADA System was completed in November. Floating Slab Installation and Permanent Power to CHS were also completed in November. Emergency Ventilation Level 3 Testing is expected in 2nd Quarter 2015 and critical SCADA cutovers are expected in March and May of 2015.

#### Schedule/Critical Path

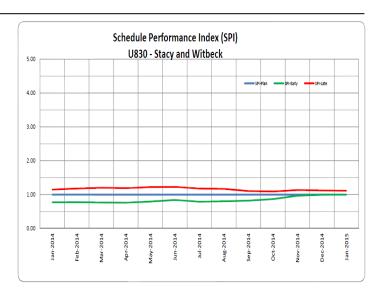
A schedule update for January has been received and it addresses OCS acceleration. Expected completion for OCS installation is forecasting for early March. Early completion of OCS is expected to provide early starts to critical system integration tests prior to the demising wall removal in June 2015. Milestone #6 (Substantial Completion) is reporting one day of positive float.

The U830 Critical Path runs through the communication equipment and testing/commissioning. Contractor production rates and construction submittals are being tracked closely.



#### **Schedule Performance Index**

The SPI based on early forecast has risen slightly above a 1.0 this period. The completion of rail and floating slab installation and improved production with OCS installation has improved the performance indices for U830.



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# Link Light Rail University Link Extension - Systems



#### **Key Activities**

#### Current Period

- Completed 4<sup>th</sup> QTR 2014 Risk Register Meeting on January 9, 2015.
- Began installation of tunnel signage.

#### Trackwork

- Completed welding and final adjustment to the double crossover.
- Completed the final track survey of the tunnels.
- Completed rail-to-rail and rail-to-earth testing at the UWS.

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

- Continued installation of fiber optic cables between PSST and WLS.
- Continued installing communication devices at CHS and UWS.
- Began installation of fan damper control panels at UWS and CHS.
- Began installation of EMI splices at UWS.
- Continued installation of overhead catenary system between UWS and CHS tunnel.
- Continued installation of the signal cable and equipment in the tunnels between CHS and UWS.
- Began preparation for the systems integration testing phase.
- Ongoing design and software development for all system scopes.

#### Next Period

- Scheduled to begin rail profile grinding in tunnels.
- Continue installation of fiber optic cables between PSST to WLS.
- Continue installing communication devices at CHS and UWS.
- Continued installation of fan damper control panels at UWS and CHS
- Continue installation of EMI splices at UWS.
- Continue installation of overhead catenary system between UWS and CHS tunnel.
- Continue installation of the signal cable and equipment in the tunnels between CHS and UWS.
- Continue preparation for the systems integration testing phase.

#### **Closely Monitored Issues**

• Current focus is on overhead catenary support installation at UWS and communications systems installation at CHS.

#### **Cost Summary**

Present Financial Status	Amount
U830 GC/CM Contractor - Stacy & Witbeck	
Original Contract Value	\$119,167,433
Change Order Value	\$1,758,386
Current Contract Value	\$120,925,820
Total Actual Cost (Incurred to date)	\$86,631,976
Financial Percent Complete	71%
Physical Percent Complete:	75%
Authorized Contingency	\$5,958,373
Contingency Drawdown	\$1,758,386
Contingency Index	2.6



Signal system installation.

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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 repair to the Traction Power/ Gear Unit is completed.

#### Other Systems

- U835 EMI/Vibration & Wheel Flat Monitoring continue final design activities and work plans.
- U810 MOW to submit 100% Design and mobilization of construction activities
- U829 Fare Collection Contracts TVM work commenced

#### Next Period

#### P821 – Light Rail Vehicles

- Contract Close Out on hold until repair to the Traction Motor/ Gear Unit (TM/GU) repairs is completed.
- Collaborate with manufacturer on the TM/GU fleet repair .

#### Other Systems

- U835 EMI/Vibration & Wheel Flat Monitoring continue final design activities and work plans.
- U810 MOW to mobilize for construction activities
- 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

### **P821 Cost Summary**

Present Financial Status	Amount
P821 Manufacturer — Kinkisharyo Intl.*	
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

<sup>\*</sup>Change Order to Initial Segment LRV Contract

#### **C802 Cost Summary**

Present Financial Status	Amount
C802 Train Control —GETS Global Signaling, LLC*	
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

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

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### 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 sta-

tion 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.

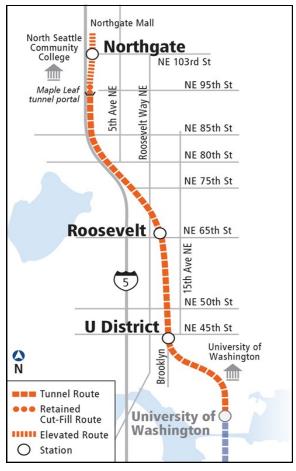
Systems: Include Signals, track electrification, and

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**

- The Sound Transit Board approved a motion to increase contingency for the Jacobs Associates contract for Final Design.
- Held a second station area facility integration workshop with King County and SDOT.
- Continued working with City to review submittals required for Master Use Permits (MUPs), Street Improvement Permits (SIPs) and to discuss the "Green Streets" concepts for the U District and Roosevelt Stations
- Finalized the terms of a Possession and Use Agreement for Northgate Mall properties with the Simon Property Group (SPG) and was signed on January 22.
- For N160 Northgate Station, Aerial Guideway & Garage, Finalized negotiations with M.A. Mortenson Company for preconstruction services. Completed 30% design submittal for the Northgate Parking Garage and advanced work on cost estimates and temporary parking facilities.
- For N111 Advanced Utility Relocation, NTP was issued to Walsh Construction Company.

- For N125, northbound tunnel TBM No. 1 advanced 2,350 feet for a total to date of 6,550 feet. TBM No.2 advanced 80 feet for a to date total of 1,250 feet.
- At the Roosevelt Station, excavation of the station box continued, which is now about 90% complete and scheduled for completion in February 2015.
- At the U District Station, excavation continued to about 55% complete and completed work on a bridge that will support a new roadway on NE 43<sup>rd</sup> Street, a week ahead of milestone date.

# **Closely Monitored Issues**

- The tunnel contractor has had some challenges in meeting planned TBM production rates including delays in starting mining operations with TBM No. 2. A recovery schedule has been submitted with a plan to get this work back on track.
- An alternative route for the relocation of the 115 kV power lines in the Northgate area continues to be evaluated and discussed with FHWA, SCL and WSDOT.

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### **Project Cost Summary**

The Northgate Link project cost is summarized below by two cost categorizations. In the first table, the cost is summarized in accordance with Sound Transit's Work Breakdown Structure (WBS). The second table summarizes the project in accordance with the FTA's Standard Cost Category (SCC) format. The figures in both tables are shown in millions. Cost Summary by Phase

Project Phase	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
ADMINISTRATION	\$147.5	\$147.5	\$25.4	\$26.9	\$147.5	\$0.0
PRELIMINARY ENGINEERING	\$15.1	\$15.1	\$15.1	\$15.1	\$15.1	\$0.0
FINAL DESIGN	\$128.5	\$128.5	\$103.3	\$76.9	\$128.5	\$0.0
CONSTRUCTION SERVICES	\$117.9	\$117.9	\$78.4	\$15.7	\$117.9	\$0.0
3rd PARTY AGREEMENTS	\$11.8	\$11.8	\$10.4	\$3.9	\$11.8	\$0.0
CONSTRUCTION	\$1,324.2	\$1,324.2	\$476.1	\$219.3	\$1,324.2	\$0.0
VEHICLES	\$259.1	\$259.1	\$4.7	\$0.4	\$259.1	\$0.0
ROW	\$127.3	\$127.3	\$55.1	\$54.5	\$127.3	\$0.0
Total	\$2,131.4	\$2,131.4	\$768.5	\$412.8	\$2,131.4	\$0.0

The Estimated Final Cost (EFC) for the project as of this reporting period is \$2,131.4M, which is equal to the project budget. This period approximately \$20.6M was incurred, of which \$17.3M was for the N125 tunneling contract. Another \$0.9M was for civil and systems final design and design support during construction, and \$1.2M was for construction management. The remaining expenditures were for permit costs, right-of-way, third party coordination, staff, and other direct charges.

SCC Element	Baseline Budget	Current Adopted Budget	Commitment to Date	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 GUIDEWAY & TRACK	\$615.1	\$628.4	\$327.6	\$151.7	\$595.6	\$32.8
20 STATIONS	\$434.2	\$278.5	\$39.9	\$18.6	\$372.3	(\$93.7)
30 SUPPORT FACILITIES: YARD, SHOP	\$5.3	\$5.3	\$5.2	\$5.2	\$5.2	\$0.1
40 SITEWORK & SPECIAL CONDITIONS	\$64.3	\$201.8	\$97.4	\$42.4	\$140.9	\$60.9
50 SYSTEMS	\$110.9	\$110.9	\$0.9	\$0.9	\$110.9	\$0.0
Construction Subtotal (SCC 10 - 50)	\$1,229.9	\$1,224.9	\$471.1	\$218.8	\$1,224.9	(\$0.0)
60 ROW, LAND, EXISTING IMPROVEMENTS	\$143.1	\$119.9	\$55.1	\$54.5	\$119.9	\$0.0
70 VEHICLES	\$236.9	\$236.9	\$4.7	\$0.4	\$236.9	\$0.0
80 PROFESSIONAL SERVICES	\$400.8	\$424.3	\$237.6	\$139.0	\$419.2	\$5.0
90 CONTINGENCY	\$120.8	\$125.4	\$0.0	\$0.0	\$130.5	(\$5.0)
Capital Total (SCC 10 - 90)	\$2,131.4	\$2,131.4	\$768.5	\$412.8	\$2,131.4	\$(0.0)

The Estimated Final Cost (EFC) for some contract packages have been reassessed and revised as a result of updated design development estimates and the award of 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 \$29.6M to \$366.6M, which is 21.3% of project work remaining. During this reporting period, a net decrease of \$6.3M in the overall project contingency occurred. Detailed information is provided below.

**Design Allowance** – Compared to the baseline amount of \$113.9M, Design Allowance has decreased by \$105.7M to \$8.2M as a result of updated construction cost estimates that have utilized DA as the scope development has progressed. No changes to DA occurred during this period.

*Allocated Contingency* – Compared to the baseline amount of \$184.0M, Allocated Contingency has increased by \$49M to \$233M. During this reporting period, an increase of \$24.5M occurred due to the incorporation of the adopted 2015 budget which reallocated UAC funds to AC across various project phases, and adjusted for actual final costs on contracts and tasks completed in prior years.

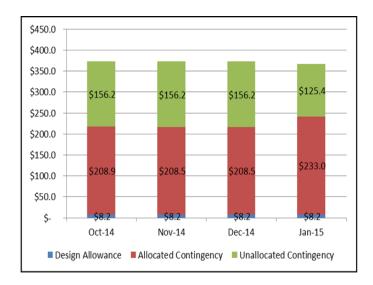
*Unallocated Contingency* – Compared to the baseline amount of \$98.3M, Unallocated Contingency has increased by \$27.1M to \$125.4M. During this reporting period, a decrease of \$30.8M occurred due to the incorporation of the adopted 2015 budget which reallocated UAC funds to AC, increased various contract budgets, and adjusted for actual final costs on contracts and tasks completed in prior years.

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#### Cost Contingency Status, continued

	Baseline				Current		
Contingency Status	Amount		Amount % of Total		Amount	% of Work Remaining	
Design Allowance	\$	113.9	5.3%	\$	8.2	0.5%	
Allocated Contingency	\$	184.0	8.6%	\$	233.0	13.6%	
Unallocated Contingency	\$	98.3	4.6%	\$	125.4	7.3%	
Total	\$	396.2	18.6%	\$	366.6	21.3%	



### **Project Schedule**

The design for the N105 Key Bank Site Demolition remains on hold pending resolution of the City's comments on the Grading Permit regarding the proposed shoring system. N111 Advanced Utilities Relocation Contractor Walsh Construction Company received Notice to Proceed on January 19, 2015 and is currently completing required submittals and preparing to mobilize to the site in the first week of March.

For N113 115kV Transmission Line Relocation, Sound Transit is moving forward with the evaluation of an alignment on the west side of I-5 within the WSDOT Right-of-Way. ST is working to complete survey and wetlands delineation of the new alignment. This will allow completion and permitting of the Geotechnical Boring Plan, and the start of 30% design.

The Contractor of N125 TBM Tunnels is operating two TBMs at this time. TBM No. 1 resumed mining January 5 and TBM No. 2 continues to lag behind its' planned production. The Contractor anticipates an increase in the production of TBM No. 2 once the current soil conditions are cleared. Excavation of the Roosevelt Station is nearing completion with almost all soil nails completed and the last row of tie-backs being installed. The conveyor will be removed and north wall readied for TBM No. 1 breakthrough. Tie-Back and lagging installation continue at U-District Station as planned. JCM has achieved Milestone No. 1 with completion of the NE 43<sup>rd</sup> St. Bridge.

The design team continued the 90% design effort for N140 U-District Station. Review of the N150 Roosevelt Station 90% design is scheduled to be completed in mid-February with the 100% design effort following. The estimated construction start remains 1st QTR 2017 after accounting for the apparent slippage in N125.

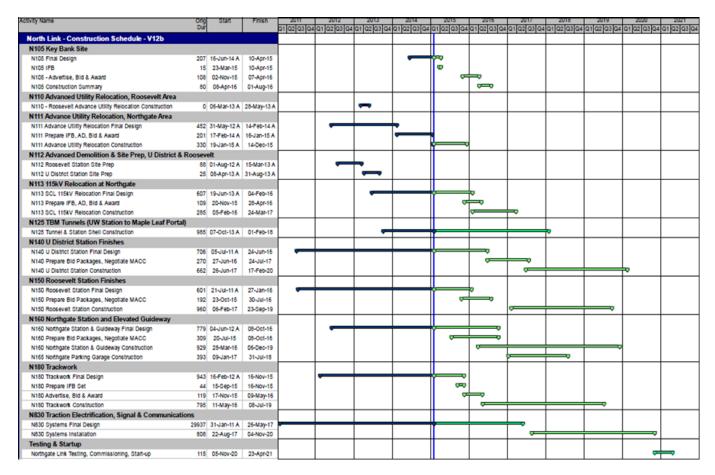
The N160 Northgate Station & Guideway timeline remains unchanged: 100% design start is on track to start in March 2015. NTPP for the GC/CM Pre-construction Construction Services is still planned for late February 2015. The 30% design for the Northgate Station Parking Garage is currently in review. The 60% Garage design is scheduled to start in early March and finish in late May 2015. The 90% Garage submittal is scheduled for mid-August 2015 after which the Garage will be integrated into the N160 100% design package for submission in December 2015.

N180 Trackwork design will remain on hold until mid-February 2015 at which time the design will be updated based on the U830 feedback on the floating slab. This updated design will be used to advertise for Industry Review. The 100% design is scheduled for ST review in Aug-Sept. of 2015 with the IFB package scheduled for November 2015.

The Northgate Link Extension Revenue service is still scheduled for September 2021 with overall project float remaining unchanged at 165 days.

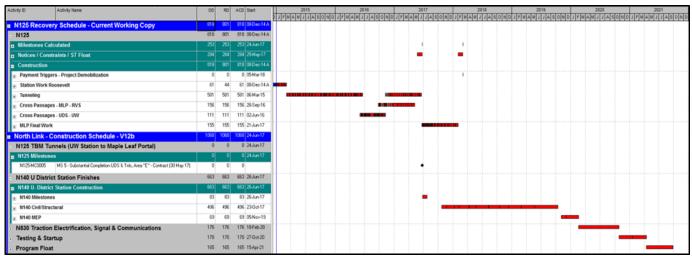
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### Project Schedule, continued



# **Critical Path Analysis**

The longest path through the Northgate projects is unchanged in from last period. The N125 Milestone No. 5, turnover of the U-District station site to the N140 Contractor, is the key milestone at this point. Tunneling is the driving element, with station box excavations anticipated to be complete in advance of the TBM reaching them. TBM No. 2 continues to be the primary driver in turning over the station to the N140 contractor, followed by completion of the cross passages. The CM team is currently analyzing the progress of TBM No. 2 and evaluating potential recovery efforts. The Revenue Service date is still forecast for September 2021 with the use of overall project float.

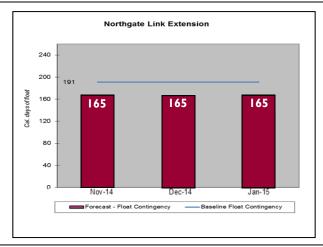


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#### **Critical Path Float**

The Northgate Link baseline schedule included 191 days of project-wide float. Some of those days have been allocated as buffers at critical interfaces between adjacent contracts. Revenue Service is still scheduled in September 2021.



### **Construction Safety**

Data/Measure	January 2015	Year to Date	Project to Date
Recordable Injury/Illness Cases	2	2	14
Days Away From Work Cases	0	0	0
Total Days Away From Work	0	0	0
Restricted or Modified Work Cases	2	2	10
Total Days Restricted or Modified Work	42	42	230
First Aid Cases	0	0	9
Reported Near Mishaps	2	2	31
Average Number of Employees on Worksite	293	-	-
Total # of Hours (GC & Subs)	43,627	43,627	670,106
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	9.17	9.17	4.18
DART Rate	9.17	9.17	2.98
Recordable WA State Average	3.80	3.80	3.80
DART WA State Average	2.20	2.20	2.20

# 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** - Final offer letter sent for one parcel; Two parcels awaiting for appraisal update due to modification of TCE term; Condemnation package prepared for two parcels, and in QA/QC. Two parcels granted P&U and payment will take place in the next few weeks. Appraisal will need to be revised on one parcel.

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	2
Roosevelt Station	20	18	0	0	0	18	26	26
Tunnel Easements	190	188	0	0	0	188	0	0
Northgate Station	П	6	0	0	0	0	13	0
Total	237	227	0	0	0	221	43	28

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# **Quality Assurance Activities**

#### **Activities**

None to report

#### **Issues**

· None to report

#### Summary

Description	Jan 2015	Notes
No. of Audits Planned	_	N150 90% Design Audit
No. of Audits Completed	0	None
Reports in Progress	0	None
No. of Audits Post- poned	3	N125 RE Audit, N180 100% Design, N105 100% Design

#### **Sound Transit Board Actions**

Board Action	I Description			
M2015-04	To increase the contingency for the civil final design services contract with Jacobs Associates for the Northgate Link Extension in the amount of \$8,200,000, for a new total authorized contract amount not to exceed \$100,008,106	Jan 22		

#### **Environmental**

 Completed SEPA Addendum for the N113 115kV Line Relocation.

### **Community Outreach**

Emailed monthly newsletter to Northgate Link distribution list.

#### Northgate Station

- Met with businesses at the strip mall regarding traffic revisions and sidewalk closures.
- Notified mall management of survey work on mall property.

#### Maple Leaf Portal and tunnels

- Distributed dewatering well installation alerts to nearby residents.
- Delivered right of entry notifications for video surveys.

#### Roosevelt Station

- Distributed construction alerts ahead of tunnel progress in the Roosevelt neighborhood.
- Mailed the notification for the start of the Major Public Construction Variance to nearly 450 residents. The variance allows for some types of work to be done 24-hours a day.

#### U District Station

- Coordinated with UW Tower staff on issues regarding parking and tieback installation noise.
- Contacted Century Link about leasing parking stalls to alleviate loss of parking during restoration work.
- Met with SPD regarding illegal parking around the construction site.
- Distributed construction alert regarding opening if NE 43rd Street and posted it on signage and social media.
- Coordinated with Pronto Bike share and SDOT following the NE 43rd paving restoration work.

#### **Business Mitigation**

- Created and supplied a "Business is Open" banner on restaurant adjacent to cross passage dewatering work.
- Conducted door to door outreach to businesses ahead of intersection restoration work.
- Visited businesses to discuss results of the Spend Five Get a Drive promotion.

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# Link Light Rail Northgate Link Extension - Final Design



#### 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**

<u>Contract Package N105</u> – Key Bank Demolition and Remediation:

• Continued 100% design effort.

Contract Package N113 –115kV Relocation at Northgate Sta.

- Evaluated alternative 115 kV alignments within the WSDOT Right of Way to the west of I-5 and conducted initial reconnaissance site visits.
- Conducted site visit with ST Environmental staff to observe wetland and other surface water features within the N113 utility corridor.

Contract Package N140 - U District Sta. Civil and Finishes:

- Continued 90% design effort.
- Continued preconstruction phase activities with the GC/CM contractor including workshop sessions.
- Continued with efforts on Green Street designs.

Contract Package N150 - Roosevelt Sta. Civil and Finishes:

- Continued responding to 90% design review comments.
- Coordination with GC/CM continued including responses to GC/CM Constructability Log recommendations and comments.

<u>Contract Package N160</u> - Northgate Sta. and Aerial Guideway Civil and Finishes:

- Continued to update and resolve 90% Outstanding Issues, including preparation of action items list for completion during 100% design phase.
- Continued responding to 90% review comments.

<u>Contract Package N165</u> – Northgate Parking Garage (will be included in N160):

• Began responding to 30% design review comments.

Contract Package N180 – Trackwork:

- Design on hold pending industry review and input from U Link floating slab test section.
- Continued to track issues and information available from U Link Contract U830 following floating slab inspection which took place in December.

<u>Contract Package N830</u> – *Traction Electrification, Signals, and Communications:* 

- Finalized decision for N180 Contractor to install early 26kV power to support UDS station testing
- Completed Statement of Work for 3D Modelling of Systems elements for N830
- Supported EMI Workshop with the University of Washington
- Continued preparation for advertisement of GC/CM preconstruction services for the N830/E750 Systems construction project.

#### Final Design Schedule

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

Work Packages	<u>60%</u>		<u>90%</u>		100% to ST	
	<u>Plan</u>	<u>F/A*</u>	Plan	<u>F/A*</u>	<u>Plan</u>	<u>F/A*</u>
N105 Key Bank Demolition and Remediation	7/31/14	7/31/14A	10/3/14	10/3/14A	2/23/15	2/23/15
NIII Advanced Utility Relocation – Northgate	12/21/2012	5/23/2013A	3/29/2013	10/14/2013A	7/12/2013	1/31/2014A
N113 115kV Relocation at Northgate	10/29/2013	11/21/2014A	3/27/2014	6/8/2015	6/19/2014	9/4/15
N140 U District Station Finishes	12/24/2011	4/27/2012A	9/18/2012	8/19/2015	5/10/2013	5/12/16
N150 Roosevelt Station Finishes	4/13/2012	2/27/2012A	1/28/2013	12/18/2014	10/23/2013	9/10/2015
N160 Northgate Sta. Civil/Finishes/Guideway	6/27/2012	10/5/2012A	4/17/2013	3/7/2014A	11/26/2013	12/15/2015
N180 Trackwork	8/23/2012	8/23/2012A	5/22/2013	4/8/2013A	8/26/2013	11/18/2015
N830 Traction Electrification, Signals, Communications	12/12/2012	12/20/2012A	4/10/2014	8/31/2015	12/9/2014	5/16/2016

F/A\* = Forecast/Actual

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# Link Light Rail Northgate Link Extension - Final Design

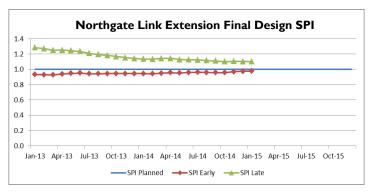
#### Final Design Schedule Performance

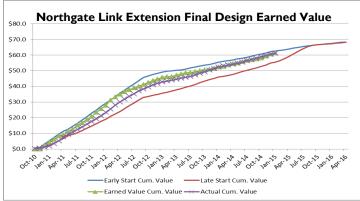
For Final Design activities only, the Schedule Performance Index (SPI) reported this period is 0.98 based on the early start dates and the late start SPI is 1.10. The design consultant has had some design deliverable milestones for N113, N140, N150 and N180 pushed back.



Through this period, the total amount spent for Civil Final Design is \$65.3M, which is approximately 73% of the total contract amount. For Final Design activities only, the total amount spent is \$61.2M, which is approximately 86.9%. The Consultant reported 86.7% complete for final design activities, resulting in an Earned Value of \$60.6M.

The current period Cost Performance Index (CPI) of 0.6 offsets the previous period reported CPI of 1.8 due to delayed billing of previously earned cost. The cumulative CPI is currently 1.0, which indicates expenditures are in line with planned cost (Earned Value).





Performance	Previous Period	Current Period	Cumula- tive To Date
Amount Invoiced	\$60,362,005	\$859,928	\$61,221,933
Spent	85.7%	1.2%	86.9%
Earned Value	\$60,578,762	\$519,366	\$61,098,128
% Complete	86.0%	0.7%	86.7%
CPI	1.0	0.6	1.0

#### Other Key Final Design Activities

#### Geotechnical Investigation

- Continued analysis and report preparation for geotechnical exploration program for the Northgate Parking Garage.
- Prepared N113 Geotechnical exploration program. Surveying and ROW
- Continued field survey of N113 revised alignment.
- Continued updates to Northgate Parking Garage parcel map and potholed 8 locations to confirm storm water vault locations.
- Continued to update the N150 ROW Plans. *Permits*
- Continued coordination support on MUP and SIP applications.
- Continued revision of NEPA re-evaluation for N113. <u>Construction Noise Variances</u>
- None to report.

#### Noise Mitigation for At Grade and Elevated Guideway

• None to report.

#### Ground Borne Noise and Vibration

• Reviewed vehicle procurement specification with respect to truck design.

#### Construction Cost Estimating

Submitted N150 90% cost estimate and KCM Bus Layover Facility cost estimate.

#### Construction Schedules

• Submitted N150 90% schedule.

#### Quality Assurance

- Continued preparation of N150 90% QA audit report. <u>Design and Project Integration</u>
- Provided coordination and integration between all contracts in the Northgate area.
- Integration and coordination with Systems Consultant (LTK), Art Consultant and Station Artists.

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# Link Light Rail Northgate Link Extension - Construction



# **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** - Civil and architectural finishes work for the Maple Leaf Portal, the aerial guideway, and the Northgate Station and Tail Track.

N165 Northgate Parking Garage (will be part of N160) - 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.

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

# **Construction Schedule Highlights**

Package	Bid Advertisement	NTP	Substantial Completion
N105-Key Bank Remediation/Demo	Dec 2015*	Apr 2015	Sep 2016
NIII-Advanced Utility Relocation	Sept 2014A	Jan 2015A	Nov 2015
N113-SCL 115kV Relocate	Oct 2015**	Feb 2016**	Dec 2016**
N125-Station Box Exc. & TBM Tunnels	Jan 2013A	Sep 2013A	Feb 2018
N140-U District Station Finishes	Oct 2013A (GCCM-Precon)	Jun 2017 (construction)	Apr 2020
N150-Roosevelt Station Finishes	Apr 2013A (GCCM-Precon)	Jan 2017 (construction)	Sep 2019
N160-Northgate Station & Guideway	July 2014A (GCCM -RFQ)	Feb 2015 (GCCM-Precon)	Sep 2019
N180-Trackwork to Northgate Station	Jan 2016	May 2016	Jul 2019
N830-Traction Power, Signals & Com	Dec 2016 (GCCM-RFQ)	Jan 2018 (construction)	Sep 2020

A = Actual

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<sup>\*</sup> 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.

<sup>\*\*</sup>These dates are based on the alternative alignment proposed, which places the 115kV line on WSDOT property west of I-5.

# Link Light Rail Northgate Link Extension - Construction

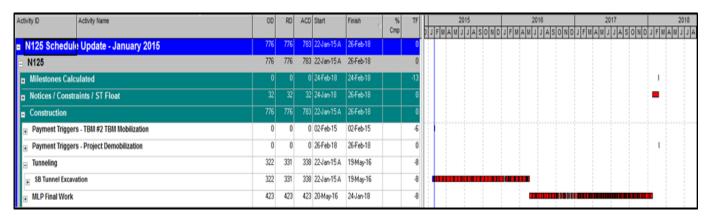
#### Contract N125 - TBM Tunnels

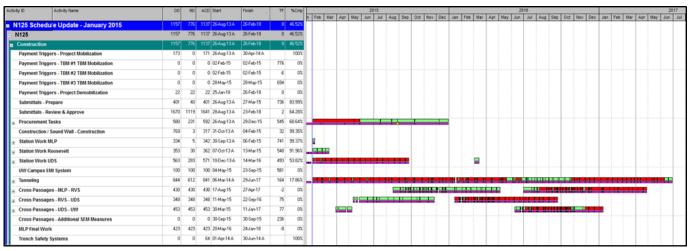
#### **Current Progress**

TBM No. 1 resumed mining on January 5 and exceeded the planned rate. The northbound bore is now 34.8% complete. Installation of dewatering wells for cross passages has moved to Cross Passage 35. The southbound bore is 6.84% complete and is slower than planned rate. *At the Roosevelt Station*, excavation of the station is at 90%. Contractor will begin night work on the base slab in the coming month. Street restoration is currently underway at the intersection of NE 65th St. & 12th Ave. NE. Restoration work at Weedin Place is complete. *At U District Station (UDS)*, excavation and installation of lagging & tie-backs continues, with 49.3% of the soil removed as of the end of January. Milestone No. 1, completion of the 43rd St. Bridge was achieved on January 23 with punchlist work following. The 1600amp vault has been completed, and the punchlist generated in preparation for turnover to SCL. The Contractor is reporting an overall Performance Percent Complete of 46.2% with a Cost % Complete of 45.2%.

#### Schedule/Critical Path

The critical path as illustrated below continues to be driven by TBM No. 2 followed by completion of the Maple Leaf Portal. Revised sequencing of the Cross Passages has taken Cross Passages off the critical path. Production rates for TBM No. 2 have increased to 221 ft. /week, but still lag behind the planned 375 ft. /week. According to the Contractor this is the result of mining in an area of dense sand and silt. The January schedule update now calculates –9 calendar days of negative float in achieving Milestone No. 5 - Substantial Completion U-District Station & Tunnels. Milestone 2 – Demobilization from U-District Station and Milestone No. 6 – Substantial Completion of All N125 Work, are now -13 calendar days behind their contract dates. Milestone No. 4 – Substantial Completion of Area "B" MLP has -5 calendar days of float. Changing the sequence of construction in the Cross Passages has alleviated some, but not all, of the negative float.





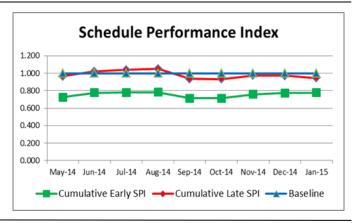
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# Link Light Rail Northgate Link Extension - Construction



#### Schedule Performance Index

The SPI for January is 0.77, virtually unchanged from the 0.77 reported in December. Completion of the 43<sup>rd</sup> St Bridge was offset by the slow progress of TBM No. 2. Overall performance continues below the late curve. The project has a 0.71 Cumulative Early SPI lifetime average and a 0.75 SPI since April 2014. At this point, even relatively large increases in the Monthly Actual Performance will produce only small changes in the Cumulative SPI. JCM's current Schedule Update is currently in review.



#### **Key Activities**

#### Current Period

- CSI continued casting segment rings 68.7% have been produced.
- Completed installation of dewatering wells at CP36 and CP39.

#### Maple Leaf Portal (MLP)

- Continued TBM No.1 mining in NB tunnel. Total progress to date: 1,286 rings.
- Continued TBM No.2 mining in SB tunnel: 252 rings total.

#### Roosevelt Site (RVS)

- Continued shaft excavation and tie-back installation; approx. 118,000 out of 130,886 cubic yards.
- Completed restoration work at 12th Ave.NE and NE 63rd St & final striping at Weedin Place.

#### U District Site (UDS)

• Continued excavation, installation of lagging and tie-backs; approx. 58,650 out of 126,432 cubic yards.

- Completed door installation for the 1,600 amp vault and punch list item to handover to SCL for completion of electrical & mechanical work.
- •Completed sidewalk on Brooklyn near U Manor. Next Period
- Continue casting production segment rings.
- Continue mining with TBM No. 1 and 2.
- At RVS, continue shaft excavation and tie-back installation and continue soil nail installation and repairing of slurry wall bulges and defects. Begin extended evening hours working for base slab and tunneling related work and begin drilling perimeter holes for NB tunnel receiving eye.
- At UDS, continue excavation of shaft and installation of tie-backs; continue 1,600 amp vault finishing work; continue UDS bridge punch list work.

#### **Closely Monitored Issues**

• TBM No. 2 schedule continues to fall behind the planned production rate. The Contractor anticipates an increase in the production of TBM No. 2 once the current soil conditions are cleared.

#### **Cost Summary**

Present Financial Status	Amount
N125Contractor - JCM Northlink	
Original Contract Value	\$440,321,000
Change Order Value	\$ 1,902,397
Current Contract Value	\$442,223,397
Total Actual Cost (Incurred to date)	\$202,442,342
Financial Percent Complete:	45.8%
Physical Percent Complete:	46.2%
Authorized Contingency	\$22,016,050
Contingency Drawdown	\$ 1,902,397
Contingency Index	5.35



Excavating central shaft area at the U District Station shaft.

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# Link Light Rail Lynnwood Link Extension

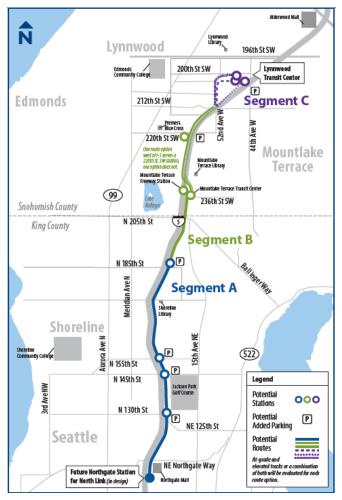


## Scope

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, completed in the 3rd QTR 2011 and Environmental Scoping, completed in the 4th QTR 2011. Development of the Conceptual Engineering and Draft EIS concluded in 2013. In November 2013, the Sound Transit Board identified the preferred route and station alternatives for the Final EIS.

# **Key Project Activities**

- Phase 3 (Final EIS and Preliminary Engineering) began in December 2013.
- Preparing for Final EIS and PE completion in 2nd QTR 2015.
- Preparing for PE completion and application for FTA New Starts Engineering phase authority.



Map of Lynnwood Link Extension route and station alternatives.

# **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.

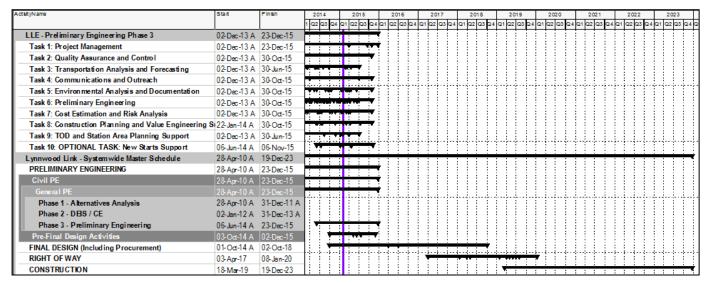
Phase	Adopted Budget	Commitment to Date	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Budget Versus EFC
Administration	\$11.7	\$4.5	\$5.0	\$7.3	\$11.7	\$0.0
Preliminary Engineering	\$44.3	\$37.9	\$33.1	\$6.5	\$44.3	\$0.0
3 <sup>rd</sup> Party Agreements	\$1.0	\$0.7	\$0.2	\$0.3	\$1.0	\$0.0
Right of Way	\$7.1	\$0.5	\$0.4	\$6.5	\$7.1	\$0.0
Total	\$64.I	\$43.5	\$38.8	\$20.6	\$64.I	\$0.0

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# Link Light Rail Lynnwood Link Extension

## **Project Schedule**

The Lynnwood Link Extension, environmental documentation and preliminary engineering is anticipated to be completed in 2015. The project schedule is presented below.



### **Sound Transit Board Actions**

Board Action	Description	Date
	None to report this period.	

#### **Environmental**

Preparing Final EIS for publication in early 2015.

# **Community Outreach**

- FEIS Notification Plan is completed. Postcards, community posting, ads, kiosk and email notification will be distributed.
- Sent out email notification regarding upcoming FEIS and other 2015 major project milestones.
- Attended the Shoreline Station area citizens committee meeting on the DEIS.
- Drafted letters to impacted property owner letters which will be sent in late March prior to the publication of the FEIS.

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# Link Light Rail Lynnwood Link Extension- PE & Final EIS



# Phase 3 Preliminary Engineering and Final EIS

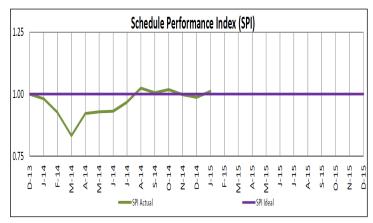
Sound Transit executed a contract amendment for Phase 3, Preliminary Engineering and Final EIS for Lynnwood Link, in December 2013.

## Phase 3 Key Activities

- Continued to advance the engineering of the preferred alternative and final PE submittal.
- Completing Final EIS and preparing for publication in the spring.
- Continued development of the work program to obtain FTA New Starts Engineering authority.

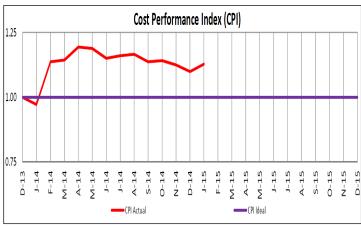
### **Phase 3 Schedule Performance**

The cumulative Schedule Performance Index (SPI) for the Phase 3 contract is 1.01 through January, indicating work performed to date is close to the amount originally planned.



### **Phase 3 Cost Performance**

\$32.1 M of the total contract amount, approximately 88%, has been spent through January. Phase 3 contract expenditures through January totaled \$15.7 M, approximately 78% of the Phase 3 contract total. The Phase 3 contract percent complete reported at the end of January is 88%, with an earned value of \$17.7 M. The cumulative Cost Performance Index (CPI) through January is 1.13; indicating costs are lower than the budget planned for work accomplished.



Phase 3 Performance	Previous Period	Current Period	Cumulative To-date
Amount Invoiced	\$14,696,510	\$975,998	\$15,672,508
% Spent	73%	5%	78%
Earned Value	\$16,153,357	\$1,525,633	\$17,678,990
% Complete	80%	8%	88%
SPI	0.99	1.35	1.01
СРІ	1.10	1.56	1.13

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Map of East Link Extension.

# 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: Rainier Ave/I-90, Mercer Island, South Bellevue, East Main, Bellevue Transit Center, Hospi-

tal, 120<sup>th</sup>, 130<sup>th</sup>, Overlake Village and the Overlake Transit Center (OTC).

**Systems:** Signals, traction power, and communications (SCADA).

**Budget:** \$798.3 Million Lifetime Budget through the Final Design Phase.

**Phase:** Final Design

Construction Starts: 2016 Service: 2023

# **Key Project Activities**

• Provided an East Link Update for the Sound Transit Board.

#### Seattle to South Bellevue

- R8A Stage 3A: HOV lane construction continues; approximately 60% complete.
- Stations: Continued traffic study preparation for the 80th Street Transit Center at the Mercer Island Station and the field test with King County Metro was done on January 28. At the Rainier Avenue Station, LRRP approved the location and screening concepts for the two TPSS. A pedestrian circulation concept at and around the Rainier Ave. entrance is being developed for review and concurrence by SDOT and WSDOT.
- IDS Turn Back Track: Continued studying the construction sequencing and durations, part of the VE recommendations.
- Track Attachment: Continued structural component and system testing at UW.
- Floating Bridge: Continued stress analysis.
- Utilities: Discussions with SCL and PSE regarding electric power supply and routes are on-going.

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# Link Light Rail East Link Extension

## Key Project Activities, continued

#### Seattle to South Bellevue

- D2: Held a meeting to discuss deviation process to brief the Materials Review Board.
- Continued meetings with WSDOT on O&M issues.

#### South Bellevue to Redmond

- Met with City of Redmond staff to consider refinements to Plaza Street design.
- Received draft Staffing Reimbursement Agreement from City of Redmond. Agreement is scheduled for Capital Committee and Board action in March.
- Master Relocation Agreements have been finalized with Comcast and OPL. Negotiations continue with Century Link for a Master Relocation Agreement.
- Agreement with PSE for advanced relocations (E320, E335, and E340) has been updated to reflect the relocation of the existing transmission and overhead distribution systems at SE 30<sup>th</sup>. ST and PSE are finalizing the estimate.
- E360 NTP has been issued for Design Build Project Management Services. Design development continued.
- Continued working with City of Bellevue on scope concurrence and interface issues such as the 120<sup>th</sup> and 124<sup>th</sup> projects in E335/E340, the Alcove Creek outfall improvements and the Bellefield Pump Station and related sewer main projects in E320, and proposed roadway design deviations in E340.

# **Project Cost Summary**

The following table summarizes the cost information for the East Link Extension. Lifetime Budget reflects the project budget adopted by Sound Transit Board, which includes budget through the Final Design Phase.

	Lifetime Budget	Commit- ment to Date	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Budget vs. EFC
Administration	\$68.1	\$28.7	\$31.7	\$39.4	\$68.1	\$0.0
Preliminary Engineering	\$56.6	\$54.3	\$53.9	\$2.3	\$56.6	\$0.0
Final Design	\$232.6	\$155.0	\$124.3	\$77.6	\$232.6	\$0.0
Construction Services	\$12.3	\$6.9	\$.5	\$5.4	\$12.3	\$0.0
3rd Party Agreements	\$39.3	\$6.1	\$3.7	\$33.2	\$39.3	\$0.0
Construction	\$24.0	\$12.7	\$6.8	\$11.3	\$24.0	\$0.0
Right-of-way	\$365.4	\$57.8	\$53.5	\$307.6	\$365.4	\$0.0
Total	\$798.3	\$321.6	\$274.2	\$476.7	\$798.3	\$0.0

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# Link Light Rail East Link Extension

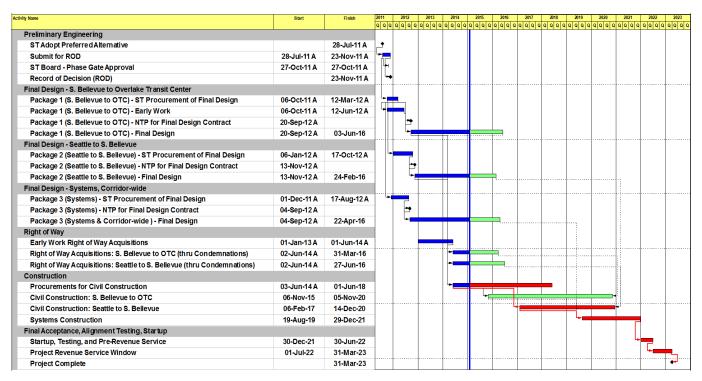


### **Project Schedule**

The East Link Extension is in Final Design. First early contract, Early Utilities for E340 (Bel Red) is scheduled to start 2nd QTR 2015. Contract packaging and sequencing of construction continues to be refined. Target date to baseline East Link is 1st QTR 2015.

East Link construction-related contract procurements continue: E335 GC/CM (Downtown Bellevue to Spring District) and Bellevue Segment CMC Contract were awarded. E130 GC/CM (I-90 Heavy Civil), E750 GC/CM (East Link Systems) and I-90 Segment CMC procurement planned for 1st QTR 2015. E360 Design Build contractors have been shortlisted and final RFP release is planned for 2nd QTR 2015. Systems CMC procurement timeline pending.

East Link Extension Revenue Service to the Overlake Transit Center is forecast for 2023.



\*Note: Dates tracked are contractual baseline dates with the exception of the Package 2 - Final Design which is showing forecasted date that is currently being negotiated. Project baselining is scheduled to occur in the 1st QTR 2015, at which time the dates shown will all be baseline dates.



South Bellevue Station platform (60% design).

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# Link Light Rail East Link Extension

## 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.

	East Link Extension Property Acquisition Status									
Line Section	Board Approved									
Seattle to S. Bellevue	2	0	0	0	0	0	0			
S. Bellevue to OTC	232	105	3	0	57	220	71			
Bellevue Mile	I	I	1	0	I	0	0			
Total	235	106	4	0	58	220	71			

In an effort to clearly track the individual parcels as they directly relate to each individual project segment or multiple segments, the report has been modified to reflect those parcels that fall into the multiple segment category. Therefore, 19 parcels were removed from E320 and placed into the E330/E335 segment and 26 parcels were removed from E330 and placed in the E330/E335 segment. Status of the City of Bellevue parcels are found in the "Board Approved" column.

#### Seattle to S. Bellevue

E110 IDS Rail Connection Upgrades - No new activity.

#### S. Bellevue to OTC parcels

E130 I-90/E320 S. Bellevue- No new activity.

*E320* - Five offers made, One parcel signed, two closed and four parcels vacated.

E330 Downtown Bellevue / E335 Downtown Bellevue to Spring District – No new activity.

E335 – Three offers were made and one vacated.

E340 Bel-Red - Nine offers were made and four were vacated

E360 SR 520 to OTC – Two more relocations were identified.

# **Quality Assurance Activities**

#### Activities

None to report.

#### **Issues**

 Request for Deviation for noise and vibration mitigation for downtown Bellevue tunnel.

#### <u>Summary</u>

Description	Jan 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

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# Link Light Rail East Link Extension



### **Environmental**

 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
	None to report this period.	

# **Community Outreach**

- Distributed the 2014 Wrap-up and 2015 Look-ahead enewsletter to the East Link list serve.
- Solicited formal feedback from the cities of Mercer Island and Seattle on permanent station names for the Board's consideration.
- Coordinated with City of Bellevue staff on presentation to the City Council on January 26 which included updated animation with mitigation labels.
- Met with 40 businesses as part of the ongoing East Link Stakeholder Canvasing effort in Overlake.
- Published the Mercer Island Parking/Transit Integration Public Involvement Summary.

### Construction

#### I-90

- Continued I-90 (Stage 3A) HOV ramp construction.
- Completed Phase 2B and opened the realigned Bellevue Way HOV off-ramp.
- I-90 Stage 3 (adding HOV lanes on outer roadway between Mercer Island and Seattle) pre-construction underway.
- I-90 Construction management Services Request for Qualification (RFQ) in development.

#### Bellevue-Redmond

- Bellevue Segment Construction Management Services (for preconstruction services), contract awarded, work underway.
- E335 GC/CM (Downtown Bellevue to Spring District was awarded, work underway.



Demolishing existing concrete barrier on the I-90 East Channel Bridge as part of R8A Stage 3A HOV ramp construction.

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

### 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 Overlake Transit Center (OTC). 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 OTC.



Map of South Bellevue to the Overlake Transit Center in Redmond.

### Final Design Key Activities

### E320 So. Bellevue

- Completed coordination of Surrey Downs Park area, establishing limits and extent of work to be shown in the E320 100% drawings.
- Updated standpipe calculations based on 6-inch diameter.
- Completed 100% interdisciplinary review and began revisions

# E330 Downtown Bellevue/E335 Downtown Bellevue to Spring District

- Completed review of Sound Transit's Special Conditions, resolution of 100% review comments, and incorporated 100% review comments into the IFB contract documents.
- Completed QC of drawings, specifications and reports for the IFB submittal.
- Advanced added work of building basement strengthening.

#### E335 Downtown Bellevue to Spring District

- Responded to right-of-way related questions.
- Obtained City of Bellevue's approval of the evaluation of the Downtown Bellevue Tunnel mid-tunnel fan room fire protection classification.

#### E340 Bel-Red

- Completed the concurrence process on the 136<sup>th</sup> NE Pl Kelsey Tributary drainage crossing. Concurrence exhibits were signed on January 24, 2015 by the City of Bellevue and Sound Transit at the DAVE collaboration meeting.
- Received signed copies of the City of Bellevue letters of concurrence #12 and #13 for the Bel-Red corridor roadway deviations.
- Conducted the relocation assessment and the structural pipe loading calculations for the 48-inch King County sewer pipe.

### E360 SR 520 to OTC

- Updated utilities at the north leg of the pedestrian bridge on Microsoft West Campus.
- Updated Operation and Maintenance drawings for the Sound Transit/WSDOT Airspace Lease based on WSDOT comments.
- Incorporated revisions to station site to align with plaza street changes.

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



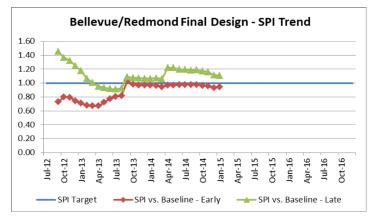
### **Final Design Schedule**

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

Contract	<u>60% Su</u>	60% Submittal		90% Submittal		100% Submittal		IFB Submittal	
<u>Packages</u>	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	7/13/2015	7/13/2015	
E330 Downtown Bellevue Tunnel	11/18/2013	11/18/2013	6/2/2014	6/02/2014	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	5/23/2016	
	Draft RFP	Submittal	Final RFP	Submittal	*Baseline schedule dates revised to reflect final contract packag			act packaging	
	Baseline*	Forecast/ Actual	Baseline*	Forecast/ Actual	ana constructioi	n delivery methods.			
E360 SR-520 to OTC	2/18/2014	2/18/2014	1/19/2015	3/31/2015					

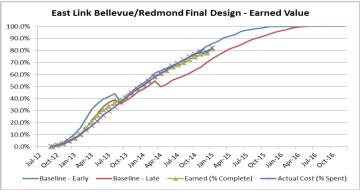
### Final Design Schedule Performance

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 1.20 when measuring against the Late Schedule Baseline.



### Final Design Cost Performance

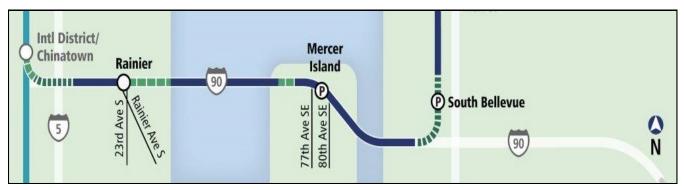
Labor cost (for Phase 2 Final Design) to-date is \$61.8 million, or 79.1% of the budget. Progress earned through the same period is approximately 78.2% or \$61.1 million of earned value. This yields a cumulative Cost Performance Index (CPI) of 0.99, which indicates approximately on-budget cost efficiency of the current contract budget, including executed change orders. There are upward cost pressures in several areas due to refinements to the design and potential 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.



Doufoumones	Previous	Current	Cumulative	
Performance	Period	Period	To Date	
Labor Amt. Invoiced	\$60,549,479	\$1,205,513	\$61,754,992	
% Spent	77.9%	1.2%	79.1%	
Earned Value	\$60,056,929	\$1,029,561	\$61,086,490	
% Complete	77.2%	1.0%	78.2%	
СРІ	0.99	0.85	0.99	

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# 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 and community outreach support.

The project in this segment has been grouped into three Contract Packages: (1) E110 Rail Connection and Upgrades at IDS, (2) E120 Seismic Retrofits of WSDOT Structures, (3) E130 I-90 Civil/Architectural, which also includes the two at-grade stations, and Electrical/Mechanical Upgrades to existing Tunnels.

### Final Design Key Activities

- Held a VE/Constructability Review of E120 and a project-wide Risk Assessment Workshop. Construction sequencing and durations for the IDS Turn back track are being studied as part of the VE recommendations.
- *Mercer Island Station:* Continued traffic study preparation of the 80th Street Transit Center and work continued with Mercer Island staff on identifying additional parking alternatives.
- Rainier Avenue Station: The LRRP approved the location and screening concepts for the two TPSS at the Rainier Avenue Station; SDOT and WSDOT concurrence will be sought for a pedestrian circulation concept for the station's Rainier Ave entrance area, currently under development.
- Track Attachments: Held a VE workshop. Phase 2/Stage 2, structural testing, began in late January.

### Final Design Schedule

	60% Submittal		90% Submittal		100% Submittal		IFB Submittal	
Contract Packages	Baseline	Actual	Baseline	Forecast/ Actual	Baseline	Forecast/ Actual	Baseline	Forecast/ Actual
EI IO - Rail connection & IDS upgrades	12/6/2013	6/3/2014	10/9/2014	3/15/2015	2/13/2015	6/22/2015	4/28/2015	10/6/2015
E120 - Seismic Retrofits	11/1/2013	9/24/2014	1/15/2015	7/17/2015	3/25/2015	11/6/2015	4/28/2015	2/24/2016
E130 – I-90 Civil/ Arch./Elect. & Mech. Upgrades	4/4/2014	7/11/2014	12/17/2014	4/15/2015	3/25/2015	1/2/2016	4/30/2015	2/5/2016

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



### Final Design Schedule Performance

Schedule information was not reported by the consultant for the December 2014 period, due to a moratorium on non-critical work requested by Sound Transit. A revised baseline design schedule will be submitted once current scope & budget realignment negotiations have been resolved by senior management for ST and the Consultant, in 1st QTR 2015. Upon ST acceptance of revisions, baseline milestones will be revised by an administrative change order.

### **Final Design Cost Performance**

Cost Performance data was not submitted by the Consultant, due to ST's moratorium on non-critical work. Excluding professional fee, total Labor and Other Direct Costs for Final Design through December 2014 is \$28.1M, or 98.2% of the budget was expended. The ST Board authorized contract contingency of \$5.5M in October 2014. The current budget includes executed change orders. A revised final design budget will be submitted once current scope & budget realignment negotiations have been resolved by senior management for ST and the consultant, due 1st QTR 2015. Upon ST acceptance of revisions, cost performance for all work will again be monitored moving forward, to ensure project completion in a cost-effective and successful manner.



Plinth blocks ready for testing at the Structure Lab, University of Washington.

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# Link Light Rail East Link Extension Final Design - Systems

### **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, preparations of comprehensive construction contract documents, 3rd party coordination, cost estimating, scheduling, and bid support.

### Final Design Key Activities

- Incorporated comments to the Division 1 specifications in preparation for the prequalification phase of preconstruction.
- Team supported the East Link Project Risk workshops.
- Finalized Radio System demand report and recommendation based on traffic studies.

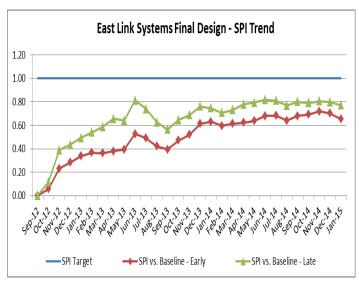
### Final Design Schedule

Though IFB submittal is showing six months behind schedule, there is no impact to the overall schedule.

	<u>60% Su</u>	<u>bmittal</u>	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	7/8/2015	7/8/2015	1/28/2016	1/28/2016	4/22/2016	4/22/2016

### Final Design Schedule Performance

In January 2015, the project is 46.7% complete resulting in an Earned Value of \$8.23M. The project has an early SPI of 0.75 and a late SPI of 0.99 which indicates that the contract is behind schedule. Revisions to the civil design schedules resulted in a delay to the Systems deliverables.



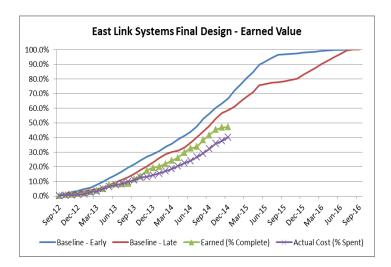
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# Link Light Rail East Link Extension Final Design - Systems



### **Final Design Cost Performance**

Through the end of January 2015, the project has spent approximately 39.7% of the budget resulting in a cumulative CPI of 1.2. The current Estimate at Completion (EAC) is expected to be less than the current budget of \$17.7M.



Perfor- mance	Previous Period	Current Period	Cumulative To Date
Labor Amt. Invoiced	\$6,545,679	\$456,878	\$7,002,557
% Spent	37.1%	2.6%	39.7%
Earned Value	\$8,160,048	\$415,720	\$8,575,768
% Complete	46.3%	0.4%	46.7%
CPI	1.3	0.9	1.2

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## Scope

Limits: South 200th Link Extension consists of 1.6-

mile extension of light rail from the SeaTac/Airport Station to South 200th

Street.

Alignment: The extension continues in an aerial config-

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

Build contract.

Angle Lake Station is located at South 200th Station:

Street.

Signals, track electrification, and SCADA Systems:

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): Held S. 200th Strategic Planning meeting and Executive Partnering meeting; City of SeaTac (COS) has indicated King County Storm Water codes may require adding detention facilities to the previously approved S440 storm water IFC and permitted design. COS provided feedback to S440 sub-contractor, which they are taking action to update and submit the revised drainage report.
- Design Build Parking Garage (S445): The 100% Structural design package was reviewed & approved with comment by City. IFC Structural submitted for review and permit issuance by City.
- Roadway Improvements (S447): Final Design Consultant prepared IFC/permit set for submittal to City for ROW use permit. Held meeting with Johansen to evaluate their low bid of S447 construction contract and prepared staff report for ST Board approval scheduled February 26, 2015. Working with utilities to finalize agreements and schedules to support S447 construction.

Military Road/South 200th (S446): Final design consultant submitted 90% to WSDOT for review. Conducted field visit with WSDOT construction staff.

# **Closely Monitored Issues**

• None to report this period.

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# **Project Cost Summary**

The S. 200th Link Extension project cost is summarized in two cost tables. The first table in in accordance with Sound Transit's Work Breakdown Structure (WBS), and in the second table, cost is summarize 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	\$8.7	\$9.4	\$15.8	\$0.0	
PRELIMINARY ENGINEERING	\$5.9	\$5.7	\$5.7	\$5.7	\$5.7	\$0.0	
FINAL DESIGN	\$20.0	\$9.9	\$8.4	\$8.4 \$8.1 \$9		\$0.0	
CONSTRUCTION SERVICES	\$15.1	\$17.3	\$15.0	\$6.8	\$17.1	\$0.2	
3rd PARTY AGREEMENTS	\$6.9	\$7.1	\$5.6	\$2.7	\$7.1	\$0.0	
CONSTRUCTION	\$275.7	\$283.8	\$214.2	\$123.2	\$263.5	\$20.3	
VEHICLES	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	
ROW	\$43.5	\$43.5	\$41.6	\$36.3	\$43.5	\$0.0	
Capital Total	\$383.2	\$383.2	\$299.2	\$192.2	\$362.7	\$20.5	
FINANCE COST	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	
Project Total	\$383.2	\$383.2	\$299.2	\$192.2	\$362.7	\$20.5	

The overall project Estimated Final Cost (EFC) for this period continues to reflect \$362.7M. This period incurred cost increased approximately \$2.9M for construction activities S440 Guideway & Station Design Build contract and S445 Parking Garage Design Build contract. Construction services were \$0.3M and the remaining expenditures for \$0.5M were related to civil final design, third party, ROW and administrative charges.

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

Project Elements by SCC	Baseline Budget	Current Adopted Budget	Commit- ment to Date*	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 Guideway & Track Elements	\$144.8	\$133.0	\$98.4	\$60.0	\$118.1	\$14.9
20 Stations	\$46.4	\$51.3	\$38.1	\$11.0	\$37.8	\$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	\$39.3	\$22.5	\$53.0	-\$1.9
50 Systems	\$30.8	\$19.9	\$19.2	\$11.4	\$20.1	-\$0.2
Construction Subtotal (SCC 10-50)	\$256.6	\$255.3	\$195.1	\$104.9	\$229.1	\$26.3
60 Row, Land, Existing Improvements	\$43.5	\$43.5	\$41.6	\$36.3	\$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	\$62.6	\$51.0	\$76.2	-\$5.7
90 Unallocated Contingency	\$19.0	\$13.8	\$0.0	\$0.0	\$13.8	\$0.0
Project Total (SCC 10-90)	\$383.2	\$383.2	\$299.2	\$192.2	\$362.7	\$20.5
100 Finance Cost	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Project Total (SCC 10-90)	\$383.2	\$383.2	\$299.2	\$192.2	\$362.7	\$20.5

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# **Cost Contingency Management**

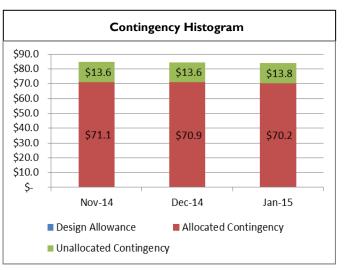
The overall project contingency balance as of this period is \$84.5M.

<u>Design Allowance (DA):</u> 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.

<u>Allocated Contingency (AC)</u>: This period the AC shows a current balance of \$70.2M, a decrease of \$0.5M from the previous period. The reduction was primarily due to construction change orders from \$440 and \$445 contracts.

<u>Unallocated Contingency (UAC)</u>: This period the UAC is \$13.8M, an increase of \$0.2M in the Final Design phase that was incorporated into the 2015 Adopted Budget.

Contingen-	Base	line	Current				
cy Status	Amount	% of Total	Amoun t	% of Work Remaining			
Design Allowance	\$26.7	7.0%	\$ -	0.0%			
Allocated Contingency	\$29.8	8.0%	\$70.2	41.2%			
Unallocated Contingency	\$19.0	5.0%	\$13.8	8.1%			
Total	\$75.5	20.0%	\$84.0	49.3%			



# Risk Management

The South 200th Link Extension Risk Management Plan (RMP) established a risk management and oversight process for assessing and monitoring risks to determine how risks have been reduced or mitigated. RMP captures scope growth, schedule delay, and cost growth risks that could arise during any phase of the project and potentially affect parts of the project scope. On a quarterly basis, the South 200th Link Extension team reviews and updates risk to reflect conditions. Below is a list of the top five major risk review items identified through 4th QTR 2014:

- 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:* Integrating the various System and Station components.
- Third Party: Port of Seattle changing rules of engagement on their property after DB contract awarded (S440).
- Construction: Delays due to L&I inspections and Certificate of Occupancy for elevators (S440 and S445).

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# **Project Schedule**

S440 contractor typical span erection by the overhead truss is at 68% complete. Full production rate of the truss has not been achieved. S445 DB Parking Garage Design/Builder has mobilized on site in August 2014. Tower crane has now been erected and may help the contractor reach full production. The S. 200th master schedule has been tied to the Rail Activation Schedule but commissioning activities in the S440 schedule needs more detail to be tied properly. The S. 200th Link Extension anticipated service launch is September 2016. (See Project Schedule Summary below).

ivity Name	Start	Finish													
			Q4	Q1	20 Q2	15 Q3	04	01	Q2	016 Q3	Q4	Q1	Q2	017 Q3	Q4
Sound Transit	28-Sep-12 A	24-Sep-16	QT.	Q(I	U/L	QJ.	ųт	W,I	Q2	Q,S	▼ <b>Q</b> T	Q I	Q2	Q3	QT.
University Link (UL)	26-Mar-16	24-Sep-16						,	_		•				
Rail Activation Schedule	26-Mar-16	24-Sep-16						,	_		•				
Pre-Revenue Service	26-Mar-16	24-Sep-16						,	_		₹				
Pre-Revenue Service - S. 200th Link	26-Mar-16	24-Sep-16						,			7				
Pre-Revenue Service - S. 200th	26-Mar-16	22-Apr-16		[				,	_			T			
Revenue Service Float - S. 200th	23-Apr-16	24-Sep-16							_		•				
Task Group 4.0 - Rail Operations	26-Mar-16	22-Apr-16						,	_						
4.5 - Rail Operations - Simulate Revenue Service	26-Mar-16	22-Apr-16						,	_						
\$200th	26-Mar-16	22-Apr-16		ļ <u>.</u>					<u> </u>			ļ			
S200th Simulate Revenue Service	26-Mar-16	14-Apr-16						'	~_						
\$200th Pre-Revenue Service Float	15-Apr-16	22-Apr-16							*						
LRT Extension - South	28-Sep-12 A	16-Jun-16							,	'					
S440 South 200th Link Extension - Update	28-Sep-12 A	19-May-16							_						
Design	15-Oct-12 A	10-Mar-16						_							
Construction	28-Sep-12 A	19-May-16							_			T			
SL 442 - Fare Collection Equipment (TVM/ORCA)	24-Jan-14 A	21-Feb-16						_							
SL 443 - SCADA (U830)	20-Jan-16	16-Feb-16						•							
\$445 S. 200th Link Extension Parking Garage Design-Build	03-Mar-14 A	02-Feb-16						-							
DESIGN	03-Mar-14 A	02-Feb-16						-							
CONSTRUCTION	03-Mar-14 A	02-Feb-16						7				†			
SL 446 - S. 200th WSDOT Roadway - Preliminary	01-Nov-12 A	16-Jun-16							_	•					
SL 447 - S. 200th Station Area Roadway	15-Oct-12 A	09-Feb-16						_							

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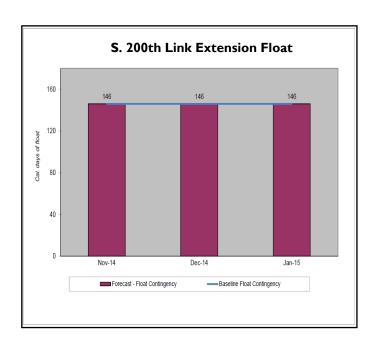
# **Critical Path Analysis**

The critical path of S. 200th Link Extension runs through S440 which commences with the procurement of the guideway erection truss, guideway erection. The critical path this period runs through procurement of special track and the installation of plinths through systems installation and commissioning and system wide testing and integration.

tivity Name	Start	Finish		2015		5	2016			2017			
			Q	Q	Q	Q Q	Q	Q	Q	Q	2 Q	Q	)
S440 South 200th Link Extension - Update	11-Jun-14 A	21-Mar-16			7		T	,		Т			•
Construction	11-Jun-14 A	21-Mar-16			+	+	┿	,					
Milestone-1	21-Mar-16	21-Mar-16					1	,					
Sound Transit Milestones	21-Mar-16	21-Mar-16					1	•					
ST MS 10F - Achieve S440 Substantial Completion (3/25/16)		21-Mar-16*					1	•					
ST MS 07F - Systems Commissioning (60 calendar days prior to rev service)(2/25/16)		21-Mar-16*	-				4	٠					
Material Procurement	11-Jun-14 A	08-Dec-14 A	_										
Trackwork and Plinths	08-Dec-14 A	07-Aug-15	١		ш	7							
Systems	08-Aug-15	17-Feb-16	6		,	w.	•						
Sound Transit Activities	18-Feb-16	16-Mar-16	1				T	,					
L 443 - SCADA (U830)	20-Jan-16	16-Feb-16					•						
Rail Activation Schedule	25-Mar-16	24-Sep-16					1	_	_				
Pre-Revenue Service	26-Mar-16	24-Sep-16					1	_	_				
Pre-Revenue Service - S. 200th Link	26-Mar-16	24-Sep-16					1	_	_				
Pre-Revenue Service - S. 200th	26-Mar-16	22-Apr-16	7				1	#					
Revenue Service Float - S. 200th	23-Apr-16	24-Sep-16					1	•	_				
Project Delivery	25-Mar-16	25-Mar-16					1	,					

#### **Critical Path Float**

The float contingency for S. 200th Link Extension is at 146 days.



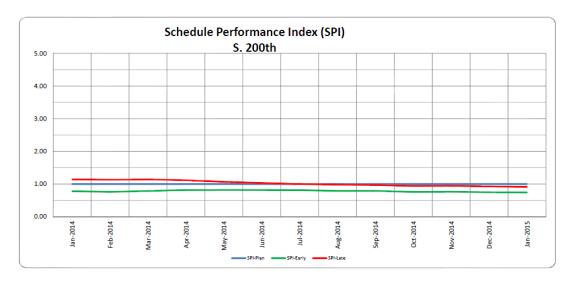
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### **Schedule Performance Index**

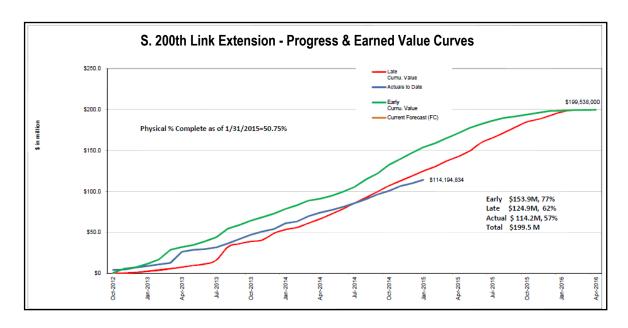
The Schedule Performance Index (SPI) for S.200th Link Extension continues to fall to 0.74 due to slower than expected span erection by the gantry truss and segment casting at the casting yard for S440. S440 continues to use the excessive float identified in their baseline schedule as a mitigation tool. S445 delays have been related to the following: design, weather, permitting, contaminated soils, and poor production delays. S445 will be submitting a recovery schedule to address these delays. (See details on individual contract sections.)

Progress will continue to be monitored closely.



# **Cost Progress Analysis**

Overall S. 200th physical % complete is at 50.8%. 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.



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## Right-of-Way

The S. 200<sup>th</sup> Link Extension involves the acquisition of a range of property interests, including owner and tenant residential and commercial relocations. Property interests include compensable (e.g., easements, fee acquisitions) and noncompensable rights (e.g., rights of entry). The S. 200th Link Extension project involved the advance acquisition of three parcels that the Board approved in 2006 and 2007; the final decree was entered in 2009. The acquisition of property rights from additional parcels along the route was authorized by the Board in July 2011 (52 parcels) and February 2012 (6 parcels). On November 21, 2013 the Sound Transit Board authorized the acquisition of 21 parcels for S447. Seven parcels previously certified for S440 also have acquisitions on S447. Three parcels that had previous acquisitions on S440 have new acquisitions on the same project.

The right-of-way program is summarized below.

Line Section	Total Parcels Certi- fied*	Of- fers Made	Signed Agree- ments	Admin. Settle- ments	Posses- sion and Use	Closings to date	Baseline Relocations Required	Relocations Completed
S440	61	56	0	0	0	56	8	8
S445	I	I	0	0	0	I	0	0
S447	30	18	I	0	0	7	0	0
Total	92	75	I	0	0	64	8	8

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

S440 DB Guideway and Station - Offers have been made on 56 parcels. A total of 33 parcels were submitted for condemnation - 32 parcels have been filed in court and condemnation on one parcel was dismissed. All owners have settled and no parcels remain in condemnation. Three new acquisitions have been identified and added to the project; appraisal waivers have been received and offer packages are in process.

S445 Parking Garage and Plaza—Completed.

S447 Station Area Roadways - Two parcels were closed. Condemnation package prepared and submitted. Offers on two parcels rescinded via certified mail. Counter-offer received on two parcels.

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# **Construction Safety**

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

Data/Measure	January 2015	Year to Date	Project to Date
Recordable Injury/Illness Cases	0	0	4
Days Away From Work Cases	0	0	0
Total Days Away From Work	0	0	0
Restricted or Modified Work Cases	0	0	3
Total Days Restricted or Modified Work	0	0	195
First Aid Cases	I	I	29
Reported Near Mishaps	2	2	15
Average Number of Employees on Worksite	125	-	-
Total # of Hours (GC & Subs)	19,459	19,459	496,709
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	0.00	0.00	1.61
DART Rate	0.00	0.00	1.21
Recordable National Average	3.80	3.80	3.80
DART National Average	2.20	2.20	2.20
Recordable WA State Average	7.20	7.20	7.20
DART WA State Average	3.30	3.30	3.30

# **Quality Assurance Activities**

### **Activities**

 S440: MRB dispositioned an NCR to Repair structural unconsolidated concrete; dispositioned two (2) NCRs to Use-As-Is duct misalignment and duct wobble on precast segments.

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

- NCR documentation
- S445Contractor performing work without IFC Drawings.

#### **Summary**

Description	Jan 2015	Notes
No. of Audits Planned	I	S440 RE Audit
No. of Audits Completed	0	None
Reports in Progress	0	None
No. of Audits Postponed	0	None

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# **Community Outreach**

- Distributed construction alerts for overnight closures of 182nd Street (airport entrance).
- Coordinated access with Alaska Airlines for timelapse camera installation on their rooftop.
- Met with property owners on access as gantry passes over driveways.

### **Sound Transit Board Actions**

Board Actions	Description	Date
	None to report this period.	

## **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).

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

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

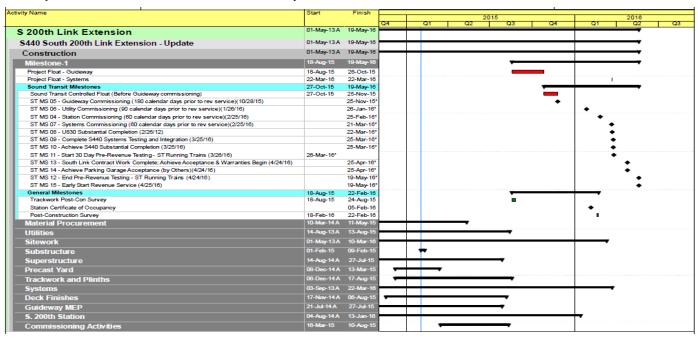
### **Current Progress**

Completed drilled shaft construction and column erection. Casting yard production is approx. 99% completed. Gantry erection has not progressed into full production. Typical Span Erection by the gantry is well underway but is progressing slower than expected; approx. 67.9% complete.

Overall the progress of this contract represents 62.5% physical completion; the Design element is 100% complete and Construction is 60% complete.

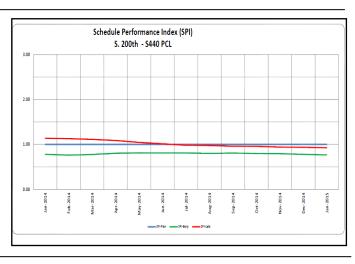
### Schedule/Critical Path

The schedule update for January has been submitted and is under review. Milestone #5, Guideway Commissioning, is reporting 65 days of positive float, including owner controlled float. Milestone #10 (Substantial Completion) is reporting 16 days of positive float. The critical path this period runs through the station civil construction and finishes and communication installation and System Testing and Integration. Guideway and Track systems will also be tracked closely. Production rates will be monitored closely.



#### **Schedule Performance Index**

The SPI remains below 1.00 at 0.77 this period. 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 are expected in future updates. .



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



### **Key Activities**

#### Current Period

- Continued coordination meetings.
- Angle Lake Station/Plaza activities: continued plaza retaining walls; continued structural steel erection of North and South plaza elevators and stairs towers; began electrical underground & rough-in; install storm vault and cistern at North plaza; began underground utility work for the Ancillary Building.
- Began task force meetings to address BMS design details.
- Continue guideway platform decking.
- Continue special trackwork and plinth installation.
- Began cable tray installation.
- Continued long span activities: lower falsework; minor joint repairs to cantilever segments; began second to last cantilever segment erection.
- Continue Gantry segmental span by span erection on 28th Ave; 68% spans complete and 18 remain.
- Cantilever segment erection on Port of Seattle ROW; 71% spans complete and 2 remain.
- Segment production this month at casting yard is 33, total produced to date is 1155 out of 1170 (or 99%).

#### Next Period

- Continue casting precast segments at Casting Yard, finish up mid March.
- Continue launching gantry to erect spans.
- Continue cantilever segment erection.
- Continue Station work-retaining walls; underground electrical; Ancillary foundation.
- Construct Canopy, Windscreen and Rail at Platform.
- Continue guideway work: special trackwork installation; typical plinths and track installation; temporary handrails.
- Other miscellaneous work: align permanent bearings; post tensioning, and grout.

### **Closely Monitored Issues**

- Conflict between T3 post-tensioning tendon anchor heads and tie-downs on simple spans is a significant engineering issue. The Contractor is analyzing this issue.
- Electrical issues at Angle Lake Station regarding code interpretation of several items, including sprinklers that the Contractor needs to resolved with City of Seatac, which is preventing COS from issuing an electrical permit at station for above ground work; an electrical permit was already issued for underground work at station.

# **Cost Summary**

Present Financial Status	Amount
S440 Contractor—PCL Civil Contractors, Inc.	
Original Contract Value	\$169,000,000
Change Order Value	\$2,594,601
Current Contract Value	\$171,594,601
Total Actual Cost (Amount Billed)	\$108,170,550
Financial Percent Complete:	63%
Physical Percent Complete:	63%
Authorized Contingency	\$13,520,000
Contingency Drawdown	\$2,594,601
Contingency Index*	3.3



Gluing and scrubbing segments.

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

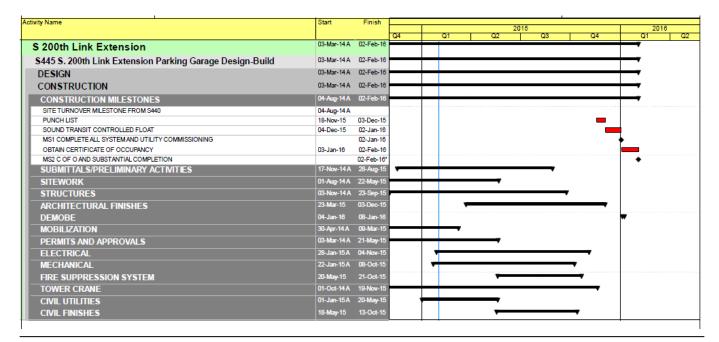
# S445 Contract—Design -Build Parking Garage

### **Current Progress**

S445 DB Parking Garage Design/Builder was issued the Notice to Proceed and a baseline schedule submittal has been accepted. Mass excavation and foundation installation are well underway. The first slab pour at the detention vault was completed this period. The tower crane is now in operation. Production will be watched closely.

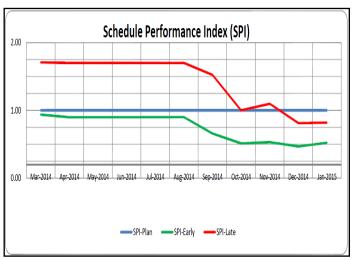
#### Schedule/Critical Path

The January schedule update has been submitted. The garage design is well under way at 85% complete. Construction work has commenced and is 15% complete. Site work and mass excavation at the garage are now underway. The critical path this period follows footing concrete, through levels 1 through 7 deck form and pours and then architectural finishes. Milestone #2 Substantial Completion is reporting 27 days of negative float with 30 days of owner controlled float intact. A recovery schedule is expected prior to the next update.



### **Schedule Performance Index**

The SPI this period has risen slightly this period to 0.52. Now that the tower crane is in operation, performance is expected to improve. The Contractor has submitted a claim for unusually severe weather from October 2014 to January 2015 and negotiations are underway.



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



### **Key Activities**

#### Current Period

- Continue design package development and coordination meetings with ST, RE team and other third party agencies.
- Continued design and construction interface coordination meetings with S440 DB Contractor.
- Continue with excavation, formwork, rebar and pour garage footings.
- Continued form, rebar and pour retaining walls and grade beams.
- Continued forming walls and columns at detention vault.
- Began pouring walls and columns at detention vault
- Completed pours of exterior walls at retaining wall.
- Began waterproofing selected walls.
- Continued back fill and compaction of footing and wall areas.
- Erected tower crane and load tested.
- Continue ongoing survey and control.

#### Next Period

- Continue design and coordination meetings.
- Anticipate review of: IFC Structures, IFC Architecture design package submittals.
- Continue with ongoing survey and control
- Continue excavate, form, rebar and pour garage footings.
- Continue excavate, form, rebar, pour, and backfill retaining walls.
- Continue excavate, form, rebar and pour of interior walls at detention vault.

### **Closely Monitored Issues**

 Contractor has indicated current design is significantly over its budget and they are considering potential Value Engineering proposals.

# **Cost Summary**

Present Financial Status	Amount
S445 Contractor—Harbor Pacific/Graham	
Original Contract Value	\$29,978,000
Change Order Value	\$143,372
Current Contract Value	\$30,121,703
Total Actual Cost (Amount Billed)	\$7,647,703
Financial Percent Complete:	25%
Physical Percent Complete:	24%
Authorized Contingency	\$2,398,240
Contingency Drawdown	\$143,372
Contingency Index*	4.0



Workers installing forms and rebar for retaining wall.

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# Link Light Rail Federal Way Link Extension

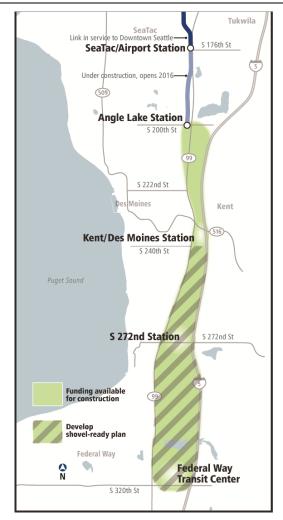


## Scope

The Federal Way Link Extension includes alternatives analysis, environmental work and conceptual engineering for an extension of Link Light Rail from S. 200<sup>th</sup> St. in SeaTac to the Federal Way Transit Center. Preliminary engineering will be performed only for the segment from S. 200<sup>th</sup> St. to Kent/Des Moines (in the vicinity of Highline 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.
- Conceptual design, cost estimates and risk assessment activities are complete.
- Cooperating agency review of the Draft EIS is complete; document has been revised to address comments.
- Project Schedule updated to reflect Sound Transit Board LPA in June 2015.



Map of Federal Way Link Extension.

# **Project Cost Summary**

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. Board approval for additional funding for final design and construction of the segment from S. 200<sup>th</sup> St. to Kent/Des Moines will be sought upon completion of funded work. The proposed 2014 budget includes an increase to the project lifetime budget to fund Right of Way activities needed to advance the design work. Table (below) figures in millions.

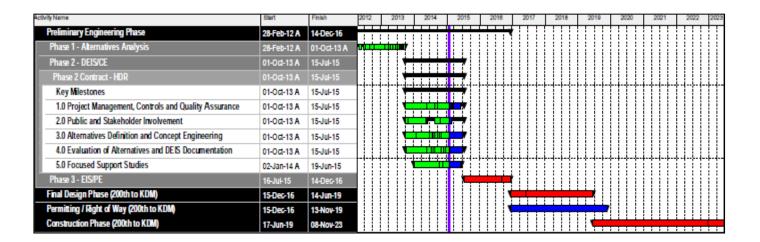
Phase	Adopted Budget	Commitment to Date	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Budget Versus EFC
Administration	\$9.4	\$1.8	\$2.1	\$7.6	\$9.4	\$0.0
Preliminary Engineering	\$30.9	\$12.3	\$10.7	\$18.6	\$30.9	\$0.0
Third Parties	\$1.6	\$0.2	\$0.1	\$1.4	\$1.6	\$0.0
Right of Way	\$1.0	\$0.2	\$0.2	\$0.8	\$1.0	\$0.0
Total	\$42.9	\$14.5	\$13.2	\$28.4	\$42.9	\$0.0

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# Link Light Rail Federal Way Link Extension

## **Project Schedule**

The DEIS and Conceptual Engineering Phase will run through the 2nd QTR 2015. 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.

Motior Number		Description	Date
	·	None to report.	

## **Community Outreach**

- Met with property owners at Marlene's Market and Kent Starbucks to discuss and answer questions about potential impacts.
- Visited properties along the alignment to inform and discuss potential impacts.

### **Environmental**

• Preparing Draft EIS for publication early 2015.

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# Link Light Rail Federal Way Link Extension— Conceptual Engineering



# **Phase 2 Conceptual Engineering**

In October 2013, Sound Transit executed an amendment to the professional services agreement with HDR Engineering, Inc. for Phase 2 professional services, including Conceptual Engineering and a Draft Environmental Impact Statement.

## Phase 2 Key Activities

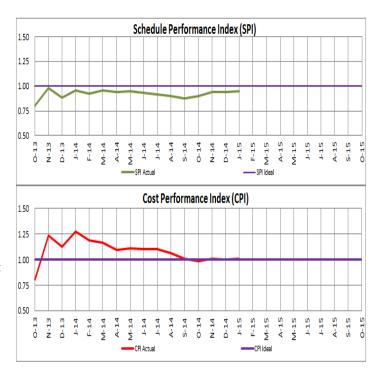
- Continued preparations for public outreach efforts for Draft EIS publication.
- Conducted one-on-one meetings with potentially affected property owners.
- Completed revisions to Administrative Draft EIS to address cooperating agency comments.
- Continued assessment of Transit-Oriented Development (TOD) potential of the Draft EIS alternatives.
- Continued coordination activities with key stakeholders in advance of Draft EIS publication.
- Continued advancement of permitting activities for Phase 3 field investigations.

### **Phase 2 Schedule Performance**

The cumulative Schedule Performance Index (SPI) is 0.95 through January, indicating the overall amount of work accomplished is less than planned. Review of the critical path indicates that publication of the Draft EIS will be in April 2015, with Board identification of a preferred alternative (& Phase 3 contract approval) in June 2015. Although this represents a three month extension of the Phase 2 schedule, the project team still expects to complete Phase 3 PE work on schedule in late 2016.

#### Phase 2 Cost Performance

\$10.4M of the total contract amount, approximately 86%, has been spent through January 2015. Phase 2 expenditures through January totaled \$7.2M, approximately 81% of the Phase 2 contract total. The Phase 2 percent complete reported at the end of January is 82%, with an earned value of \$7.2M. The cumulative Cost Performance Index (CPI) through January is 1.01, indicating costs planned are very close or equal to work accomplished. Based on the current trend, the Phase 2 cost is expected to be on budget. Currently there is no indication that a two month schedule extension will result in increased costs to Phase 2.



Phase 2 Performance	Previous Period	Current Period*	Cumulative To Date	
Amount Invoiced	\$6,912,387	\$254,256	\$7,166,643	
% Spent	78%	3%	81%	
Earned Value	\$6,914,904	\$301,408	\$7,216,312	
% Complete	78%	4%	82%	
SPI	0.94	1.10	0.95	
СРІ	1.00	1.19	1.01	

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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.
- Conceptual Engineering (CE): Final CE Plans are almost complete. Value Engineering and Risk Assessment studies were conducted in October 2014.
- Environmental: The FTA made a preliminary decision to proceed with DCE. The environmental review process is scheduled to be completed in 1st QTR 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. The proposed 2015 budget includes an increase to the project lifetime budget to fund Right of Way activities needed to advance the design work. (Table in millions.)

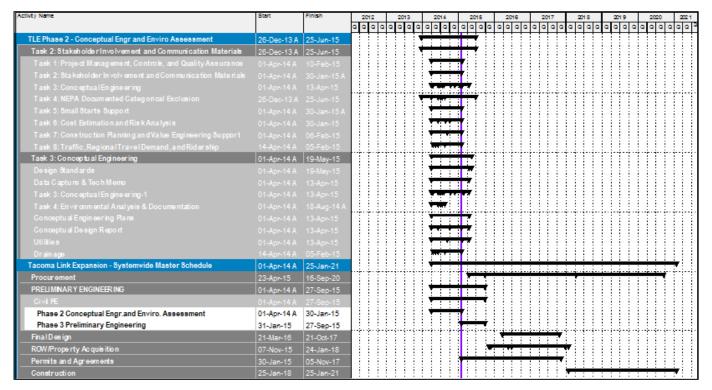
Phase	Adopted Budget	Commitment to Date	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Budget Versus EFC
Administration	\$1.8	\$1.0	\$1.1	\$0.8	\$1.8	\$0.0
Preliminary Engineering	\$5.9	\$3.6	\$2.9	\$2.3	\$5.9	\$0.0
Right of Way	\$0.1	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0
Total	\$7.8	\$4.6	\$4.0	\$3.1	\$7.8	\$0.0

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# Link Light Rail Tacoma Link Expansion

# **Project Schedule**

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



### **Environmental**

• Sound Transit identified a preferred alignment that will be evaluated as part of the environmental process.

# **Community Outreach**

- Attended the Technical Advisory Committee and presented the Spring Outreach plan.
- Met with City of Tacoma to begin discussions of parking and transportation issues.
- Attended Downtown Merchants Group.
- Attended various community group committees.

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## Link Light Rail Tacoma Link Expansion—Conceptual Engineering



## **Phase 2 Conceptual Engineering**

In March 2014, Sound Transit executed an amendment to the professional services agreement with CH2M Hill, Inc. for Phase 2 professional services, including conceptual engineering and environmental work.

## Phase 2 Key Activities

- Continued public outreach efforts.
- Prepared detailed Phase 2 work plan and schedule.
- Prepared design criteria and various conceptual engineering technical memos.
- Drafted methodology for the environmental analysis.
- Continued to refine the design of the E-1 alternative.

#### Phase 2 Schedule and Cost Performance

This project will begin reporting earned value data for the Phase 2 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**

- Urban Land Institute conducted Advisory Services Panel in March 2014.
- DEIS published in May 2014 and comment period closed June 23, 2014.
- Phase 1 work is now complete and Phase 2 NTP on September 08, 2014.
- Issues with obtaining ROE's for two parcels. To date, owners have denied Sound Transit ROE requests limiting the ability to completely survey the site and prepare basemap.

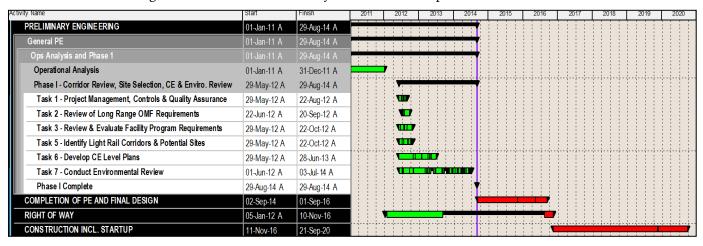
### **Program Cost**

The Link Operations and Maintenance Satellite Facility (OMSF) project 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	Commit- ment to Date	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Budget Versus EFC
Administration	\$3.2	\$0.7	\$0.8	\$2.5	\$3.2	\$0.0
Preliminary Engineering	\$10.0	\$8.6	\$3.7	\$1.4	\$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
Total	\$36.8	\$32.5	\$27.7	\$4.3	\$36.8	\$0.0

## **Program Schedule**

The project schedule is presented below. The extension of Phase 1 completion to August 2014 requires 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, such as design-build, in order to retain the desired service date in 2020. Moving the service date into 2021 may conflict with the operational needs of the East Link Extension.



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## Link Light Rail Link Operations and Maintenance Satellite Facility

## 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

- Delivered Final Phase 2 Baseline Schedule December 2014.
- Expediting Cultural Resources and Biological Assessment Technical Reports.
- ROE and environmental coordination revisions to geotechnical site investigation plan.

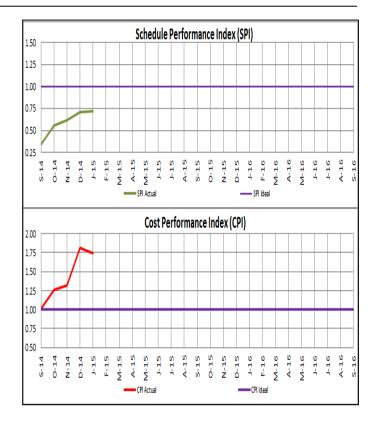
#### Phase 2 Schedule Performance

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

The cumulative Schedule Performance Index (SPI) trends at 0.72 through January 2015, which means that cumulative work accomplished is less than the planned work. The Consultant effort was focused on tasks that were not in the baseline plan. The Consultant has been asked to provide a revised plan that is consistent with the current work requirements.

#### Phase 2 Cost Performance

\$0.6M of the total contract amount, approximately 11%, was spent through January 2015. The Phase 2 percent complete is 19%, with an earned value of \$1.0M. The cumulative Cost Performance Index (CPI) is 1.74, 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	\$392,706	\$203,209	\$595,915
% Spent	7%	4%	11%
Earned Value	\$712,244	\$239,371	\$1,038,797
% Complete	13%	6%	19%
SPI	0.71	0.76	0.72
СРІ	1.81	1.61	1.74

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# **Link Light Rail Staffing Report**



## **Staffing Variance Report**

### **Recruiting Activity**

During reporting period of December 2014 the following positions were filled to support the capital program.

Position	Project Assignment	Planned Hire Date
Project Director	Sounder and Regional Express	2013 Attrition*
Construction Manager	Northgate Link Extension	April 2014
Corridor Design Manager	Systems	May 2014
Project Manager	Public Art	May 2014
Project Manager	Sounder and Regional Express	2014 Attrition
Sr. Cost Engineer	Project Controls	2014 Attrition
Cost Engineer	Project Controls	2014 Attrition*
Sr. Noise &Vibration Engineer	Link	2014 Reclassification

<sup>\*</sup>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
Construction Manager	East Link Extension	2013 Attrition
Systems Engineer	Traction Power	2013 Attrition
Deputy Project Director	University Link Extension	2013 Attrition*
Construction Manager	East Link Extension	2013 Attrition*
Construction Claims Specialist	Construction Management	March 2014
Deputy Construction Manager	Northgate Link Extension	April 2014
Construction Manager	Systems	April 2014
Project Manager	Non-corridor projects	May 2014
Deputy Director	Construction Management	May 2014
Fire Protection Engineer	All capital projects	June 2014
Civil Engineering Supervisor	All Capital Projects	2014 Reclassifica-
Sr. Project Manager	Tacoma Link Extension	2014 Attrition*
Sr. Architect	Northgate Link Extension	2014 Attrition*
Community Outreach Assistant	East Link Extension	2014 Attrition*
Sr. Design Technology Specialist	All capital projects	2014 Attrition
Systems Engineer	Link	2014 Attrition
Architect	East Link Extension	2014 Attrition
Director	Systems Eng. and Integration	2014 Attrition

<sup>\*</sup>Attrition resulting from internal promotion

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#### **Annual Staffing Summary—2014**

An average of 594 FTE/mo. consultant and in house staff participated in the major Link light rail projects in 2014. Overall, staffing was within 7% of the Plan for the year with internal staffing at 97% and consultant staffing 111% of plan. Staffing met resource needs for maintaining schedule, addressing project technical challenges and issues and providing stakeholder outreach. All of the major capital projects are on target to meet schedule milestones. Variance by project follows:

				2	2014 Staff	ing Plan	Variance	Summar	У				
	Average Staffing (FTE/mo.)												
	Consultants Sound Transit Staff All Staff												
	F	TE	Vari	ance	F	TE	Vari	ance	F	TE	Vari	ance	
				% of				% of				% of	
Link Extension	Plan	Actual	FTE	Plan	Plan	Actual	FTE	Plan	Plan	Actual	FTE	Plan	
University	55.7	59.2	3.5	106%	31.0	37.0	6.0	120%	86.7	96.3	9.6	111%	
Northgate	77.6	89.9	12.3	116%	42.1	35.3	-6.8	84%	119.7	125.2	5.5	105%	
South 200th	19.8	22.6	2.8	114%	15.6	15.5	-0.1	100%	35.4	38.2	2.8	108%	
East	194.4	200.8	6.4	103%	65.4	64.1	-1.2	98%	259.8	264.9	5.1	102%	
Lynnwood	38.7	55.9	17.2	145%	16.0	13.1	-2.9	82%	54.7	69.1	14.4	126%	
Total	386.2	428.4	42.2	111%	170.1	165.1	-4.9	97%	556.2	593.6	37.3	107%	

*University Link Extension:* Staffing for 2014 was 111% of plan. Consultant staffing exceeded plan by 6% and internal staffing by 20% largely due to the decision to advance station finishes and systems contractors activity and complete the Maintenance-of-Way Building to achieve early opening in the first quarter of 2016.

**Northgate Link Extension:** Staffing for 2014 was 105% of plan. Consultant staffing was 16% above plan as the level of construction activity increased with the start of tunneling and significant progress on excavation of the Roosevelt and U District Station boxes. A larger number of consultant resources were used to provide additional capacity; internal staffing was 84% of plan for the year.

**South 200<sup>th</sup> Link Extension:** Staffing for 2014 was 108% of plan. Consultant staffing for the South 200<sup>th</sup> Extension was 114% of plan as significant progress was made on construction of the guideway. In addition the Design/Build (D/B) contract for station parking progressed through much of the design and early site work was completed. Internal staffing in 2014 was 100% of plan

East Link Extension: Staffing for 2014 was 102% of plan. Consultant staffing was 103% of plan and internal staffing was 98% of plan. During 2014 final design was advanced, early procurement activities were completed for the General Contractor/Construction Management (GC/CM), Design/Build (D/B), and Construction Management contracts. In addition negotiations with third parties continued.

*Lynnwood Link Extension:* Staffing for 2014 was 126% of plan. Internal and consultant staffing for 2014 trended 82% and 145% of plan respectively.

In 2014, 18 of the 34 Agency's annual milestones (See Milestones) were related to the capital program; Sound Transit successfully met 16 of these milestones and met all but one of the milestones for the major Link Extensions: University, East, Northgate, South 200th and Lynnwood Link Extensions. The reasons for the unmet milestones were unrelated to Agency technical capacity and capabilities. The unmet Link-related milestone: Baseline the East Link Extension project is to be completed in 1Q 2015 to allow for input on design development and constructability from the GC/CM and the D/B contractors, and further advancement of design.

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#### 2014 Agency Milestone Status



#### Fourth Quarter

#### Serving our Customers

- Asset management system implemented for Sounder Lakewood-Tacoma
- Board approves purchase of five double-deck and 17 CNG 40-foot buses
- New Tacoma Link public announcement and signage systems completed
- Twenty-two new articulated buses arrive
- Tacoma Link fares begin
- ST Express mobile communications projects completed
- Ridership reaches more than 31 million
- Pilot parking management strategies implemented
- Board approves new bus service agreements with partner agencies
- First Hill Streetcar service begins

#### Building the System

- Construction starts on Capitol Hill Station pedestrian tunnel
- Final Design begins for Sounder yard expansion
- First East Link construction management contract awarded
- Design build contract begins for S. 200th parking garage
- Sounder positive train control installation begins
- Design build contract begins for Link Maintenance of Way Building
- Tunneling begins on Northgate Link
- Construction starts on I-90 Two Way Transit and HOV Operations Stage 3 project
- Tukwila Sounder station substantially complete
- University of Washington Station substantially complete
- East Link project schedule and budget adopted

#### Planning for the Future

- Alternatives identified for Tacoma Link environmental review
- All High-Capacity Transit Corridor Studies completed
- Environmental review completed on Sounder Yard and Shops facility
- Preferred site identified for Link Operations and Maintenance Satellite Facility
- Environmental review completed for Tacoma Trestle replacement
- Access improvements identified for Sumner and Puyallup Sounder stations
- Board updates the Long-Range Plan

#### Committed to Sustainability and Transit-Oriented Development

- Transit-Oriented
   Development Strategic Planrevised
- TOD Purchase and Sale Agreement awarded for Othello Station
- Two Sounder locomotives upgraded to Tier 3 emission standards
- Fuel efficient bus driving pilot begins to reduce ST Express diesel use
- TOD finalists selected for Capitol Hill Station
- Sustainability Plan updated

1st Quarter
2nd Quarter
3rd Quarter
4th Quarter

This information is available on the Sound Transit website at soundtransit.org/milestones.

SOUNDTRANSIT

Milestones are a valuable tool for charting Sound Transit's achievements and holding the agency accountable throughout the year.

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#### Annual Staffing Summary-2014, continued

To meet the staffing requirements of on-going projects 63 positions were filled in Design Engineering and Construction Management (DECM) in 2014 including systems engineering and construction management staff that we had experienced some difficulty in recruiting. Twenty-four of these positions were approved by the Board and had remained unfilled. In keeping with our commitment to retain institutional knowledge, capitalize on experience working on completed Sound Transit projects and familiarity with our processes, systems, policies and procedures and to provide advancement opportunities for our staff, 13 of these positions were filled through internal promotions. The voluntary attrition rate for DECM in 2014 was 10% (20 of the 196 FTE working in DECM voluntarily transferred to other departments or left the Agency in 2014 to pursue other opportunities).

Nearly \$240 million in engineering and construction service contracts were awarded in 2014. We continue to recognize value in using GC/CM and D/B alternative procurement methods, two of the 11 contracts awarded in 2014 were D/B and one of the 11 was GC/CM. We have also adopted the best practice of contracting for Construction Management Services during the design phase of a project to assist in constructability reviews. We are preparing for or are in the process of procuring utility relocations at Northgate (Northgate Link Extension), D/B contracts for the State Route (SR) 520 to Overlake segment of the East Link Extension and the Sounder Yard Expansion in Lakewood, final design services for the Lynnwood Link Extension and Puyallup and Sumner Sounder Stations, and construction of Sounder track and signal improvements including replacement of the Tacoma Trestle and the Point Defiance By-Pass.

#### Capital Contracts Awarded in 2014

Contract	Award Value	Contract
Contract	(\$000)	Through Mo/Yr
On-Call Architecture and Engineering Services (2 contracts)	\$ 4,000	Dec. 2018
E-N I-90 to Bellevue Way HOV Access	\$ 10,291	Dec. 2015
East Link Costruction Management Services	\$ 3,445	Dec. 2021
Light Rail Vehicle Engineering and Inspection Services	\$ 4,698	Dec. 2019
N140 U District Station Finishes Pre-Construction Services	\$ 1,475	Jul. 2017
I-90 Two-way Transit and HOV Ops. Stage 3	\$ 166,324	Aug. 2016
S445 S. 200th Link Extension Parking Garage and Plaze	\$ 29,978	Dec. 2016
Sounder Construction Management Services	\$ 2,000	Dec. 2016
U810 Maintenance-of-Way Building	\$ 11,999	Mar. 2016
Baeacon Avenue Restoration	\$ 988	May 2014
Environmental Sustainability On-Call Services	\$ 2,550	Mar. 2019
Total	\$ 237,748	

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## Link Light Rail Staffing Report



In 2014, we launched the Continuous Process Improvement (CPI) and Management Excellence programs. Sound Transit provided Kaizen training to 143 staff members, some of whom are now trainers and performed two 5-day Kaizen workshops to improve efficiency in administrative processes and procurements. In its inaugural year, 25 staff members participated in our year-long Management Excellence Program (MEP). Through this program participants receive 100 hours of training in advanced project management, interpersonal relations, and CPI. An additional 25 staff members are now participating in the 2015 MEP.

We have furthered our partnering relationship with the American Council of Consulting Engineers (ACEC) and the Association of General Contractors (AGC) of Washington whose membership work with Sound Transit to gain a better understanding of our work program and the systems and processes we have put in place to ensure on time and budget project performance. These trade groups share industry trends, lessons-learned and experiences with other transit providers with Sound Transit. We are fortunate that a number of our consultants and contractors have direct experience with Sound Transit with both Link and non-Link related transit infrastructure development minimizing the learning curve.

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### Project Staffing-Link Light Rail Program-December 2014

A total of 519.5 (93% 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 December 2014, a decrease of 2% (8.6 FTE) from November. Staffing exceeded plan for the all of the Link programs with the exception of the East Link Extension; staffing for the East Link extension was 26% (68 FTE) below plan. Year-to-date average staffing of 593.6 FTE/mo. for the Link capital program is trending 7% (37.3 FTE/mo.) above plan. Staffing variance to plan for the month by project follows.

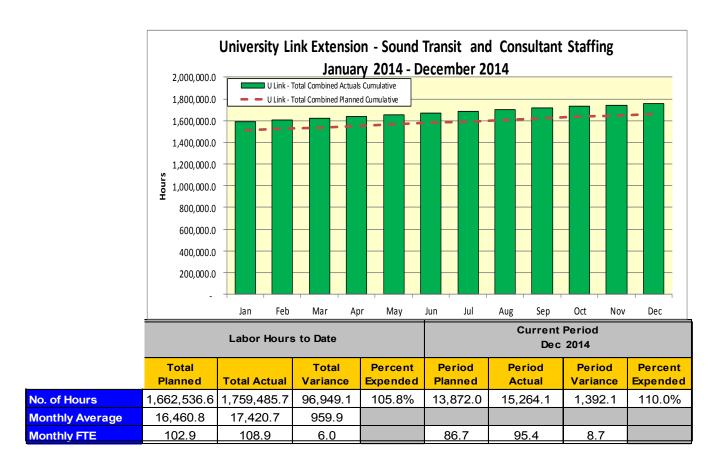
									2014 St	affing Va	riance Su	mmary								
		December 2014 Average Year to Date																		
		Consu	Itants		,	Sound Tra	nsit Staff			Consulta	ints		!	Sound Tra	ansit Staf	f		All S	Staff	
	F	TE Variance FTE Variance			ance	F	TE	Vari	ance	F	TE	Vari	ance	F	TE	Vari	ance			
				% of				% of				% of				% of				% of
Link Extension	Plan	Actual	FTE	Plan	Plan	Actual	FTE	Plan	Plan	Actual	FTE	Plan	Plan	Actual	FTE	Plan	Plan	Actual	FTE	Plan
University	55.7	60.7	5.00	109%	31.0	34.7	3.7	112%	55.7	59.2	3.5	106%	31.0	37.0	6.0	120%	86.7	96.3	9.6	111%
Northgate	77.6	97.6	20.00	126%	42.1	28.9	-13.2	69%	77.6	89.9	12.3	116%	42.1	35.3	-6.8	84%	119.7	125.2	5.5	105%
South 200th	20.2	25.7	5.50	127%	15.6	14.4	-1.2	92%	19.8	22.6	2.8	114%	15.6	15.5	-0.1	100%	35.4	38.2	2.8	108%
East	194.4	127.7	-66.70	66%	65.3	64.1	-1.2	98%	194.4	200.8	6.4	103%	65.4	64.1	-1.2	98%	259.8	264.9	5.1	102%
Lynnwood	38.7	52.8	14.10	136%	16.0	13.1	-2.9	82%	38.7	55.9	17.2	145%	16.0	13.1	-2.9	82%	54.7	69.1	14.4	126%
Total	386.6	364.5	-22.10	94%	170.0	155.2	-14.8	91%	386.2	428.4	42.2	111%	170.1	165.1	-4.9	97%	556.2	593.6	37.3	107%

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#### <u>Total Internal and External Staffing – University Link Extension</u>

There were 95.4 FTE assigned to the University Link Extension in December including 60.7 consultant and 34.7 internal FTE. Staffing for the month decreased 3% (2.9 FTE) from November and was above plan by 10% (8.7 FTE). Year-to-date, staffing is trending 11% (9.6 FTE/mo.) above plan. Cumulatively, since August 2006, average monthly project staffing is trending approximately 6% (6 FTE/mo.) above plan.

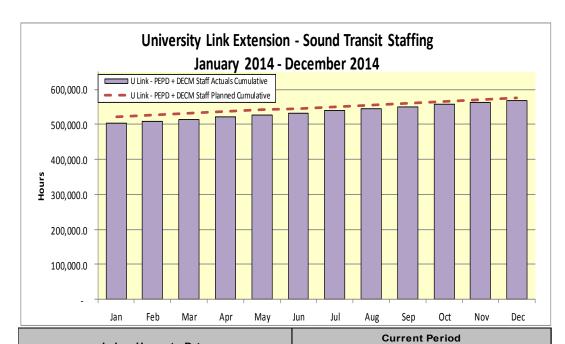


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#### Internal Resource Commitments to University Link Extension

There were 34.7 internal FTE assigned to the University Link Extension in December. Internal staffing was 12% (3.7 FTE) above plan; year-to-date, average internal staffing of 37 FTE/mo. is 20% (6 FTE/mo.) above plan. Cumulatively, since August 2006, average monthly internal staffing is trending approximately 1.3% (0.5 FTE/mo.) below the baseline.



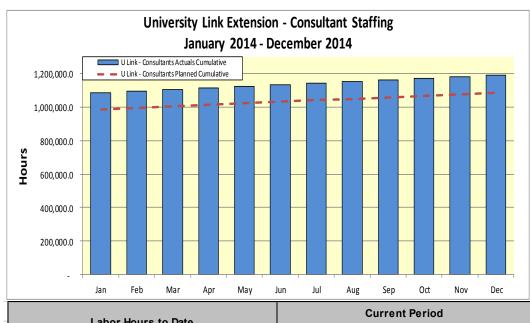
		Labor Hours	s to Date	Dec 2014					
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended	
No. of Hours	575,919.8	568,563.6	-7,356.2	98.7%	4,960.0	5,557.6	597.6	112.0%	
Monthly Average	5,702.2	5,629.3	-72.8						
Monthly FTE	35.6	35.2	-0.5		31.0	34.7	3.7		

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#### Consultant Resource Commitments to University Link Extension

During December, 60.7 consultant FTE were assigned to the University Link Extension; consultant staffing was 9% (5 FTE) above plan. Year-to-date average University Link Extension consultant staffing is trending 6% (3.4 FTE/mo.) above plan; cumulatively, since August 2006, average monthly consultant staffing continues to trend approximately 10% (6.5 FTE/mo.) above plan.



		Labor Hours	s to Date	Dec 2014					
	Total		Period	Period	Period	Percent			
_	Planned	Total Actual	Variance	Expended	Planned	Actual	Variance	Expended	
No. of Hours	1,086,616.8	1,190,922.1	104,305.3	109.6%	8,912.0	9,706.5	794.5	108.9%	
<b>Monthly Average</b>	10,758.6	11,791.3	1,032.7						
Monthly FTE	67.2	73.7	6.5		55.7	60.7	5.0		

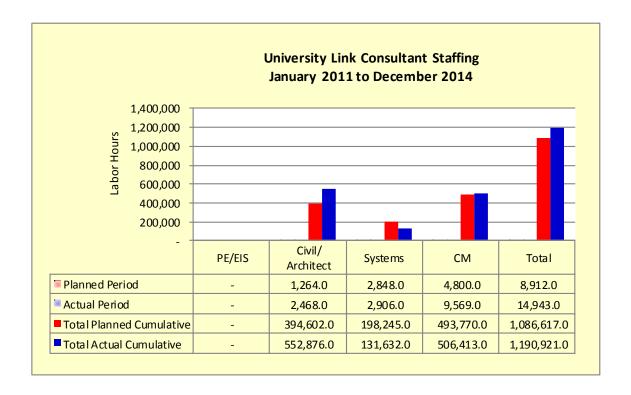
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#### Consultant Resource Commitments to University Link Extension, continued

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

In December civil engineering consultant staffing (8.7 FTE) was 10% (0.8 FTE) above plan and 24% (2.7 FTE) below November staffing. Systems engineering staffing (18.2 FTE) was consistent with plan and with Systems staffing in November. Construction management consultant staffing (33.8 FTE) decreased 7.9% (2.9 FTE) from November and was 13% (3.8 FTE) above plan. Cumulatively, civil engineering and architecture consultant staffing (34.2 FTE/mo.) continues to trend 40% (9.8 FTE/mo.) above plan; cumulative, systems consultant staffing (8.1 FTE/mo.) is 34% (4.2 FTE/mo.) below plan. Cumulative construction management staffing (31.3 FTE/mo.) is 2.6% (0.8 FTE/mo.) above plan.

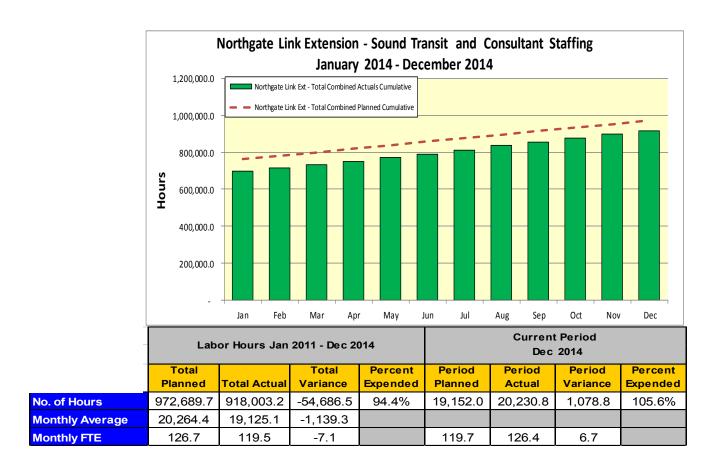


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#### Total Internal and External Staffing - Northgate Link Extension

During December, 29 internal and 98 consultant FTE were assigned to the Northgate Link Extension. This is a 1% (1.2 FTE) increase from November and is 6% (6.7 FTE) above plan. Year-to-date average internal and consultant staffing of .125.2 FTE/mo. is 5% (5.5 FTE/mo.) above plan; cumulatively since January 2011 average monthly staffing is trending approximately 6% (7.1 FTE/mo.) below plan.

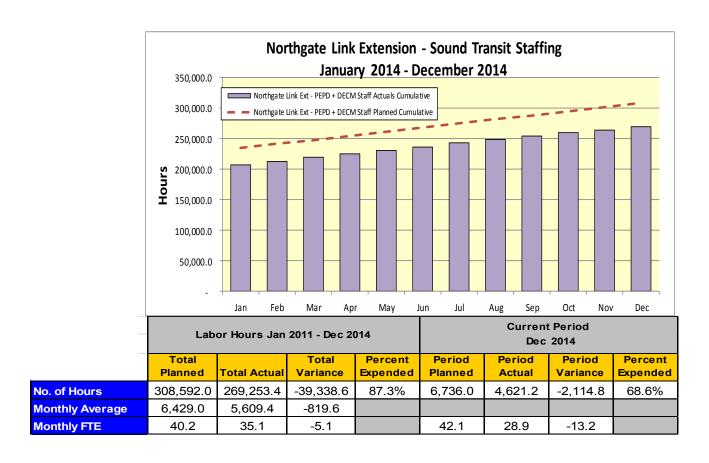


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#### Internal Resource Commitments to Northgate Link Extension

Internal staffing in December (29 FTE) increased 7% (1.8 FTE) from November and was 31% (13.2 FTE) below plan. Year-to-date internal staffing (35.3 FTE/mo.) is trending 26% (6.8 FTE/mo.) below plan; cumulatively, since January 2011, average monthly internal staffing continues to trend approximately 13% (5.1 FTE/mo.) below plan.



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#### Consultant Resource Commitments to Northgate Link Extension

In December, 97.6 consultant FTE were assigned to the Northgate Link Extension; consultant staffing was above plan by 26% (20 FTE) and decreased 1% (0.6 FTE) from November staffing. Year-to-date, consultant staffing is 16% (12.3 FTE/mo.) above plan; cumulatively, since January 2011, average consultant utilization is trending approximately 2% (2 FTE/mo.) below plan.

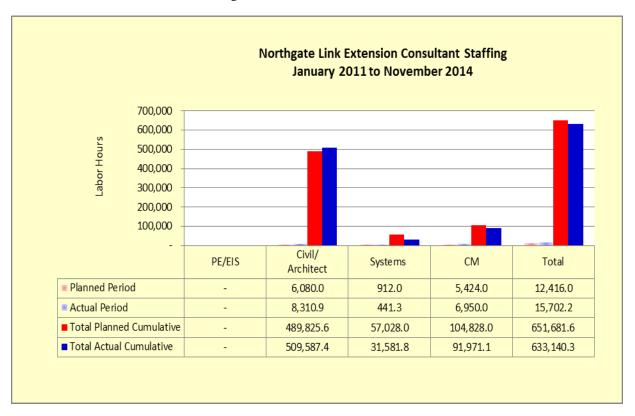


	Lab	or Hours Jan	2011 - Dec 20	014	Dec 2014					
	Total		Total	Percent	Period	Period	Period	Percent		
	Planned	<b>Total Actual</b>	Variance	Expended	Planned	Actual	Variance	Expended		
No. of Hours	664,097.7	648,749.8	-15,347.9	97.7%	12,416.0	15,609.5	3,193.5	125.7%		
Monthly Average	13,835.4	13,515.6	-319.7							
Monthly FTE	86.5	84.5	-2.0		77.6	97.6	20.0			

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#### Consultant Resource Commitments to Northgate Link Extension



#### Consultant utilization by discipline follows:

- Civil/architecture consultant utilization in December (46.4 FTE) decreased 11% (5.6 FTE) from November and was 22% (8.4 FTE) above plan. Cumulatively since January 2011, civil engineering/architecture consultant staffing of 67.3 FTE/mo. is 4% (2.7 FTE/mo.) above plan.
- Systems consultant utilization (2.8 FTE) was consistent with November staffing and was 51% (2.8 FTE) below plan. Since January 2011, average monthly Systems consultant staffing is trending 45% (3.4 FTE/mo.) below plan.
- CM consultant staffing in December (48.4. FTE) increased 11% (5 FTE) from November and was 43% (14.5 FTE) above plan. Cumulatively, since January 2011, average monthly CM consultant (12.9 FTE) staffing is trending 10% (1.4 FTE/mo.) below plan.

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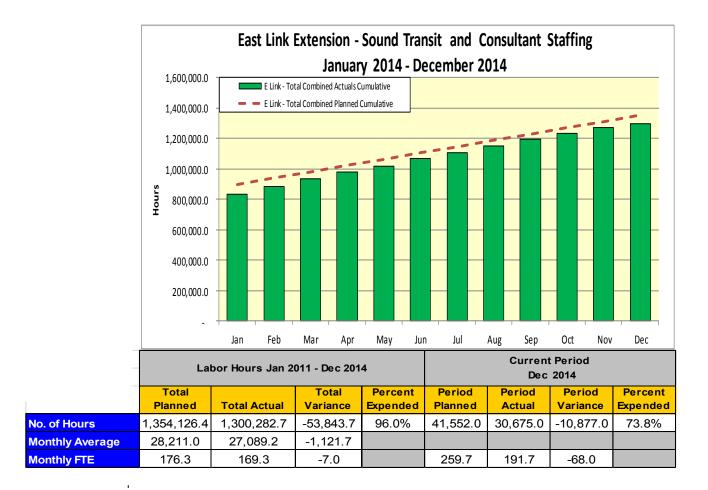
## Link Light Rail Staffing Report



#### **East Link Extension Staffing**

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

Staffing for the East Link Extension in December (191.7 FTE) decreased 9% (18.7 FTE) from November and was 26% (68 FTE) below plan. Year-to-date internal and consultant staffing of 264.9 FTE/mo. is trending 2% (5.1 FTE/mo.) above plan; cumulatively since January 2011, average monthly staffing continues to trend 4% (7 FTE/mo.) below plan.



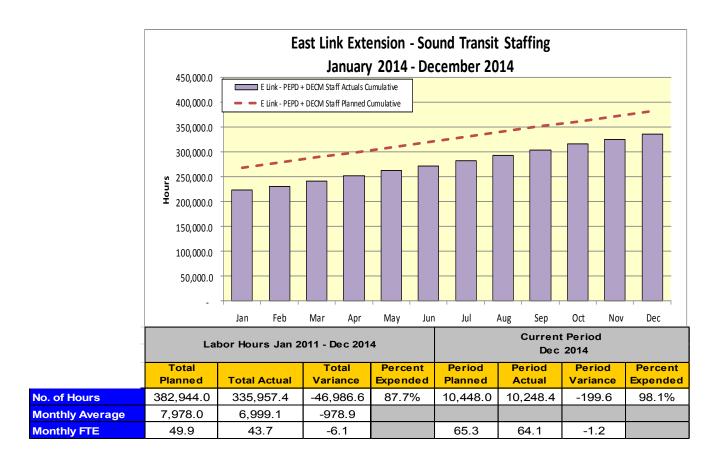
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#### **East Link Extension Staffing**

#### Internal Resource Commitments to East Link Extension

During December internal staffing for the East Link Extension (64.1 FTE) increased 13% (7.3 FTE) from November and was 2% (1.3 FTE) below plan. Year-to-date average internal staffing (64.1 FTE/mo.) is 2% (1.2 FTE/mo.) below plan; cumulatively, since January 2011, average monthly internal staffing is trending nearly 12% (6.1 FTE/mo.) below plan.



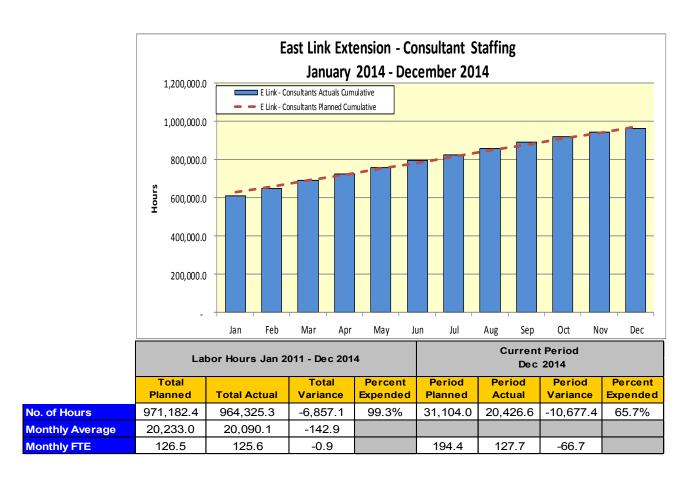
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#### **East Link Extension Staffing**

#### Consultant Resource Commitments to East Link Extension

There were 127.7 consultant FTE assigned to the East Link Extension during December. Consultant staffing decreased 20% (26 FTE) from November and was 34% (66.7 FTE) below plan. Year-to-date average consultant staffing (200.8 FTE/mo.) is 3% (6.4 FTE/mo.) above plan; cumulatively since January 2011, average monthly consultant staffing is trending 0.6% (0.9 FTE/mo.) above plan.



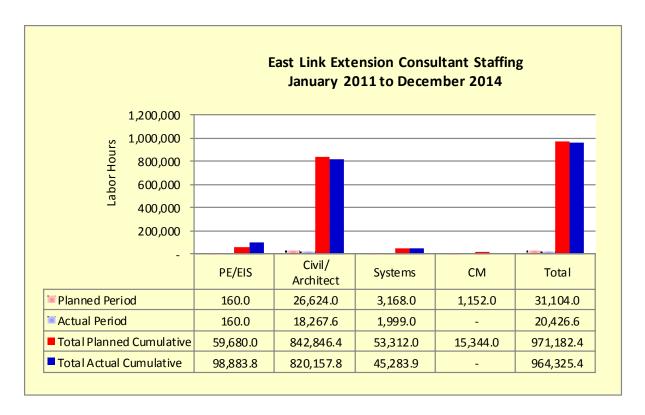
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#### **East Link Staffing**

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

In December civil engineering consultant staffing (114.2 FTE) was 89% of consultant staffing for the month. Civil engineering consultant staffing was 31% (52.2 FTE) below plan. Systems consultant staffing (12.5 FTE) decreased 20.5% (7.3 FTE) from November and was below plan by 37% (4.1 FTE). Cumulatively since January 2011, Preliminary Engineering (PE) consultant staffing (12.9 FTE/mo.) is nearly 75% (5.5 FTE/mo.) above plan. Cumulative Civil engineering (107 FTE/mo) was 3% below plan; cumulative Systems consulting staffing (5.9 FTE) is 15% (0.9 FTE/mo.) below plan.

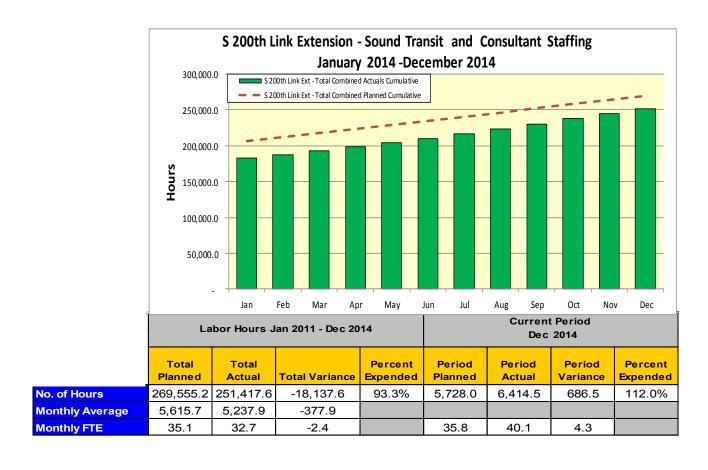


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#### <u>Total Internal and External Staffing - S. 200th Link Extension</u>

Staffing for the South 200<sup>th</sup> Link Extension in December (40.1 FTE) increased 1% (0.4 FTE) from November but remained above plan by 12% (4.3 FTE). Year-to-date consultant and internal staffing of 38.23 FTE/mo. is 8% (2.8 FTE) above plan; since January 2011, average monthly internal and consultant staffing is trending 6.7% (2.4 FTE/mo.) below plan.

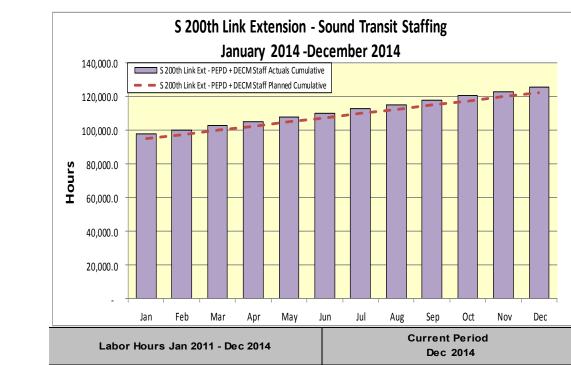


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#### Internal Resource Commitments South Link to S.200th Link Extension

Internal staffing in December (14.4 FTE) was 4% (0.6 FTE) below November staffing and 7% (1.2 FTE) below plan. Year-to-date internal staffing of 15.5 FTE/mo. is consistent with plan; cumulatively, since January 2011, average monthly internal staffing continues to trend approximately 3% (0.4 FTE/mo.) above plan.



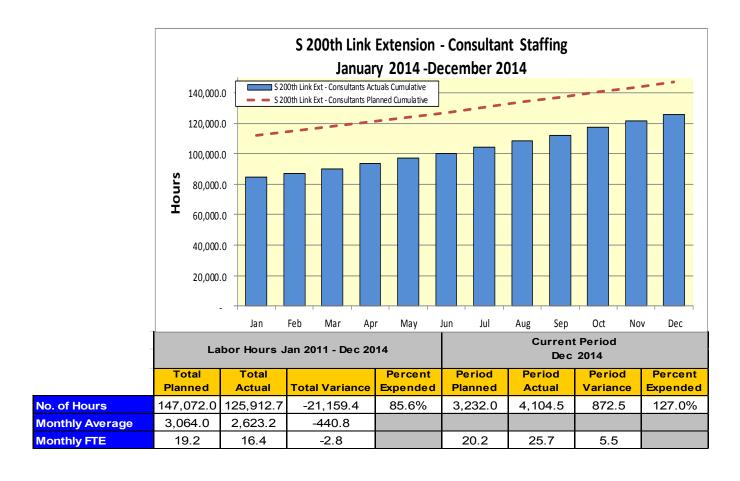
	La	bor Hours J	an 2011 - Dec 20	Dec 2014					
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended	
No. of Hours	122,483.2	125,504.9	3,021.7	102.5%	2,496.0	2,310.0	-186.0	92.5%	
<b>Monthly Average</b>	2,551.7	2,614.7	63.0						
Monthly FTE	15.9	16.3	0.4		15.6	14.4	-1.2		

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

Consultant staffing on the S. 200<sup>th</sup> Link Extension in December (25.7 FTE) decreased 1% (0.2 FTE) from November but was 27% (5.5 FTE) above plan. Year-to-date consultant staffing is 14% (2.8 FTE/mo.) above plan; cumulatively since January 2011, average consultant staffing is trending approximately 14% (2.8 FTE/mo.) below plan.

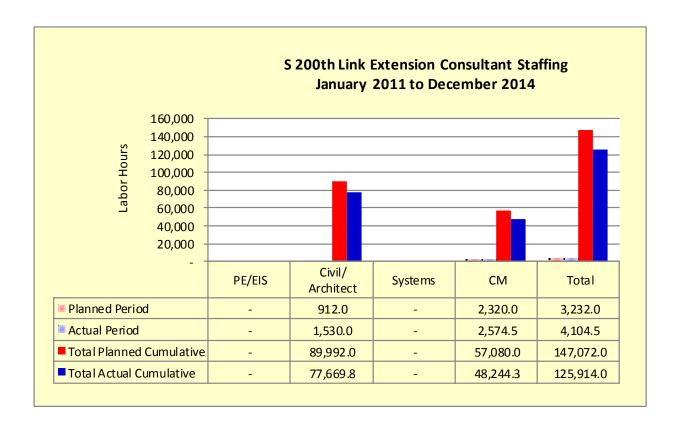


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#### Consultant Resource Commitments to S. 200th Link Extension

Design/build project management consultants (16.1 FTE) accounted for 63% of consultant staffing in December and was 13% (1.9 FTE) above plan. Additional consultant staff (9.6 FTE) provided civil and architectural engineering support. Civil engineering consultant staffing was 68% (9.6 FTE) above plan Similar to other reporting periods, Systems consultant utilization is not reported as it has been incorporated into the station and guideway design/build contract and is not being tracked or reported separately from design/build consultant staffing.



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## Link Light Rail Staffing Report



#### Lynnwood Link Extension Staffing

Total Internal and Consultant Staffing – Lynnwood Link Extension

During December there were 65.9 consultant and internal FTE (120% of plan) assigned to the Lynnwood Link Extension. Internal staffing for December (13.1 FTE) was consistent with November staffing and was below plan by 18% (2.9 FTE). Consultant staffing (52.8 FTE) increased 21% (11.3 FTE) from November and was above above plan by 36% (14.1 FTE). All consultant staff assigned to the project are supporting preliminary engineering. Year- to- date average consultant and internal staffing (69.1 FTE/mo.) is 26% (14.4 FTE) above plan. Year- to- date internal staff (13.1 FTE/mo.) is 18% (2.9 FTE/mo.) below plan; year- to- date consultant staffing (55.9 FTE/mo.) is 45% (17.2 FTE/mo.) above plan. Cumulatively since January 2013, staffing for the Lynnwood Link Extension (65.9 FTE/mo) is trending with plan.

	Labo	or Hours Jan	2013 - Dec	2014	Current Period Dec 2014						
	Total Planned	Total Actual	Total Variance	Percent Expended							
No. of Hours	187,008.0	185,888.1	-1,119.9	99.4%	8,752.0	10,538.8	1,786.8	120.4%			
Monthly Average	7,792.0	7,745.3	-46.7								
Monthly FTE	48.7	48.4	-0.3		54.7	65.9	11.2				

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# Link Light Rail Acronyms



#### **ACRONYMS**

AA Alternative Analysis
APE Area of Potential Impact
BCE Baseline Cost Estimate
BCWS Budgeted Cost of Work

BIM Building Information Modeling

BNSF Burlington Northern Santa Fe Railway

CCB Change Control Board
CDF Controlled Density Fill
CHS Capitol Hill Station

CM Construction Management
CMU Concrete Masonry Unit

CO Change Order

CPI Cost Performance Index
CPM Critical Path Method

DAHP Department of Archaeology & History Preservation

DART Days Away, Restricted or Modified

DB Design -Build

DECM Design, Engineering and Construction Management

DEIS Draft Environmental Impact Statement

DPD Seattle Department of Planning and Development

DSC Differing Site Conditions

DSDC Design Support During Construction
DSTT Downtown Seattle Transit Tunnel

EFC Estimated Final Cost

EMI Electro Magnetic Interference

FD Final Design

FHWA Federal Highway Administration

FSEIS Final Supplemental Environmental Impact Statement

FFGA Full Funding Grant Agreement FTA Federal Transit Administration

FTE Full Time Employee

GC/CM General Contractor / Construction Management
HVAC Heating, Ventilation and Air Conditioning

ICD Integration Control Document
IRT Independent Review Team
IWP Industrial Waste Permit

JA Jacobs Associates

JARPA Joint Aquatic Resource Permit Application

KCM King County Metro

LNTP Limited Notice to Proceed

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# Link Light Rail Acronyms

ACRONYMS, continued

LRRP Light Rail Review Panel

LRT Light Rail Transit
LRV Light Rail Vehicle

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

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# Link Light Rail Acronyms



#### ACRONYMS, continued

SB

RMP Risk Management Plan
ROD Record of Decision
ROW Right of Way

SCADA Supervisory Central and Data Acquisition

Southbound

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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