City of Bellevue

East Link Light Rail B7/C9T to NE 2nd Portal (B7 – Revised) Alternative

TM11 – Early Cost Estimate

215382/ST Early Cost Estimate

Final Draft | May 2011

Draft

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Appendix A

Cost Estimate

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1 Executive summary

The City of Bellevue commissioned the project team to develop a concept design for the B7–Revised alternative, which is an alternate to the B7/C9T alternatives presented in the East Link DEIS/SDEIS. An Early Concept Alignment was developed to allow an early determination of the feasibility of the alternative.

A cost estimate of the Early Concept Alignment was prepared using Sound Transit's estimating methodology. This estimate is compared against the cost estimate for the B7/C9T alternative. The comparison is carried out for the alignment from the Segment A/B interface to the south end of the proposed Bellevue Transit Center Station where the two alternatives merge.

The cost estimate uses as input data the cost estimate that was presented in Sound Transit's DEIS and SDEIS, Sound Transit's unit cost report, and the Early Concept Alignment plans presented in TM06. The estimate is in third quarter 2007 dollars, to be consistent with the base year estimate that Sound Transit used. Right of Way costs are in 2007 dollars and were provided by Sound Transit based on input from the project team.

Elements of the B7–Revised considered in this estimate include all categories of Federal Transit Administration's (FTA) standard cost categories (SCC) except support facilities, vehicles, and professional services. All the essential physical features are captured in the estimate. The unit costs are Sound Transit's composite unit costs derived from their unit cost report. Quantification is from the project team's B7-Revised drawings. For design elements that have not been considered by Sound Transit, the project team derived unit costs from market data and the WSDOT database.

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Key Findings

- The Early Cost Estimate has been prepared as an interim stage in the concept development to provide initial indications of project cost. It is stated in third quarter 2007 dollars
- The total project cost for the B7–Revised alternative is estimated at $894m, compared with $884m for the B7/C9T alternative (up to the South end of the proposed Bellevue Transit Center station). Total project costs include mitigation, RoW costs and soft costs that were calculated in accordance with Sound Transit's methodology.
- The Project costs for the Segment B and the part of Segment C south of the proposed Bellevue Transit Center station are as follows:

	B7–Revised [1]	**B7/C9T [1]**
Segment B	$515m	$514m
Segment C	$379m	$370m
Total	$894m	$884m

Note 1 – From Segment A/B boundary to the south end of the proposed Bellevue Transit Center Station

2 Background

2.1 Project description

The East Link project is an extension to Sound Transit's Link light rail system that will provide light rail service across Lake Washington, linking Seattle, Bellevue, and Redmond (Overlake).

For the segment of East Link between the Lake Washington crossing and downtown Bellevue, Sound Transit has developed the B7 alternative to a conceptual engineering level of design (approximately five percent design) as part of the Draft Environmental Impact Statement (DEIS) for the project which was issued in December 2008.

A Supplemental Draft EIS, which analyzes new alternatives developed since the DEIS, was published in November 2010. That supplemental document includes updated conceptual engineering for the Sound Transit B7 alternative and a C9T alternative that could connect B7 to a station at the Bellevue Transit Center. A Final EIS is expected in the summer of 2011.

At the September 13, 2010, Bellevue City Council Study Session, the council discussed the need for design variations and for additional analysis of revised East Link B7 and C9T alternatives. The objectives of the additional analysis would be to improve performance, to reduce impacts, and to reduce costs, as compared with the Sound Transit B7 and C9T alternatives. As a result of that discussion the council initiated the development of a modified B7 alternative ("B7-Revised"). The council directed City staff to develop an "apples-to-apples" comparison of the Sound Transit B7 and C9T alternatives with a B7-Revised alternative. Arup were commissioned by the City to develop the B7-Revised alternative.

The B7-Revised alternative begins at the transition from East Link Segment A to Segment B at the east shore of Lake Washington and connects with a new elevated station (A-2 Station) over south Bellevue Way/I-90 ramps. The alignment continues east from the station along the north side of I-90 and turns north into the BNSF corridor with an at-grade profile. The alignment transitions to elevated as it leaves the BNSF corridor, crosses over SE 8th Street, and transitions back to at-grade prior to a new station (East Main Station) just south of Main Street on the current Red Lion Hotel site. The alignment crosses under Main Street and turns west on the current Sheraton Hotel site before entering a tunnel portal at NE 2nd Street. The B7-Revised alternative is approximately three miles long with a combination of at-grade, elevated, and open-cut sections.

2.2 Technical memo scope

The scope of this activity and technical memo is to provide a cost estimate for the B7–Revised alignment based: on the Early Concept Alignment; the A-2 Station concept; and on Sound Transit's estimating methodology (presented in "Sound Transit Eastside HCT study- Alternative screening evaluations- Phase 2 Basis of Estimate for Alternative Cost Comparison").

This technical memorandum should be read in conjunction with other technical memos produced for this study, in particular:

- A-2 Station Concept Report (TM03)
- A-2 Station Cost Estimate (TM05)
- Early Concept Alignment (TM06)
- Right of Way (TM08)

This memorandum focuses on costs of the B7–Revised alternative and summarizes the comparison of B7–Revised alternative and B7/C9T. The costs include construction costs, mitigation costs for property impacts, and environmental impacts, including appropriate contingency.

This technical memorandum does not include identification of other opportunities for cost savings. These will be addressed in the Interim Analysis Report.

2.3 Objectives

The objectives of this technical memorandum are as follows:

- Present the construction cost estimate for the B7–Revised alternative
- Describe the base data, assumptions, and methodology used to develop the cost estimate
- Compare the construction cost estimate with Sound Transit's estimate for the B7 and C9T

2.4 Key meetings and background documents

Meetings held with stakeholders related to the cost estimate are listed below:

Date	Meeting	Reference (Minutes)
2/17/2011	Sound Transit	Not finalized at time of submittal.
2/24/2011	City of Bellevue	Not finalized at time of submittal.
3/23/2011	City of Bellevue	Not finalized at time of submittal.

Table 1 - Relevant meetings

Relevant documents and reports used to support the analysis include the following:

Document	Referred to in Technical Memo as:	Relevance to Technical Memo:
CH2MHill (February 2008). *Sound Transit Eastside HCT Study – Alternative Screening Evaluations-Phase 2, "Basis of Estimate for Alternative Cost comparison"*. Seattle, WA: Sound Transit.	Sound Transit Basis of Estimate	Provides Sound Transit costing methodology
CH2MHill (February 2008). *Sound Transit Eastside HCT Study – Alternative Screening Evaluations-Phase 2, "Composite Unit Cost Report"*. Seattle, WA: Sound Transit.	Sound Transit Unit Cost Report	Provides Sound Transit cost data
Puget Sound Energy (January 2010). *Puget Sound Energy's Supplemental DEIS Comments.*	PSE DEIS Comments	Additional costs referenced in Section 6.3

Table 2 - Relevant documents and reports

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3 Methodology and data

The project team was directed by the Bellevue City Council to prepare an "apples-to-apples" comparison of the B7–Revised alternative with the Sound Transit Draft Environmental Impact Statement (DEIS) and the Supplemental Draft Environmental Impact Statement (SDEIS) B7/C9T alternative, while staying consistent with Sound Transit's cost estimating methodology.

Such an assessment requires consistency of three elements: base data and information, key assumptions, and methodology. The following sections and tables outline key aspects of the B7–Revised alternative early cost estimate, how these aspects were addressed in the Sound Transit analysis, and whether the approach adopted for this cost estimate represents an "apples-to-apples" comparison with Sound Transit's cost estimating approach. Comments highlight differences in approach.

3.1 Base data and information

B7–Revised	B7/C9T	"Apples-to-Apples"	Comment
Unit costs - Sound Transit unit costs used for estimate generation	Sound Transit unit costs used for estimate generation	Yes	Consistent composite unit costs for both analyses
Work Breakdown Structure - Consistent with Sound Transit's estimate. Additional elements added to estimate's work breakdown structure needed as per the design	Sound Transit Work Breakdown Structure	Yes	Additional cost elements have been highlighted in the estimate
Soft costs - Calculated per Sound Transit methodology	Soft costs included using Sound Transit methodology	Yes	
Costs are reported in 3rd Qtr 2007 dollars	Costs are reported in 3rd Qtr 2007 dollars	Yes	
Sound Transit has provided the RoW costs which are in 2007 dollars	RoW costs calculated by ST in 2007 dollars	Yes	

Table 3 - Comparison with Sound Transit DEIS and SDEIS base data and information

The base data and information other than the right of way costs were developed in a comparable way to Sound Transit's methodology and facilitated an "Apples to Apples" comparison of the cost estimate for the two schemes.

Sound Transit's unit costs are used in the estimate to facilitate comparison. In cases where new elements were added to the Work Breakdown Structure (WBS), because of design updates, unit costs were developed based on current market trends and WSDOT data and then adjusted using RS Means CCI (Construction Cost Index) for Seattle to third quarter 2007 dollars.

B7–Revised costs are based on quantities from the Early Concept Alignment (TM06) with Sound Transit's memorandum titled "Sound Transit Eastside HCT Study –Alternative Screening Evaluations – Phase 2, Basis of Estimate for Alternative Cost Comparison," prepared by CH2M Hill, February 15, 2008.

The project team's adopted unit costs are based on Sound Transit's composite unit costs. Sound Transit's composite costs include markups for contractor and subcontractor overhead, profit, bonds, B&O tax, and general conditions (mobilization). A 9.5% sales tax rate is used on materials and equipment. Hazardous material costs are based on the information from the Draft EIS Report.

The project team applied contingency similar to Sound Transit. The design allowance used in the estimate ranges from 20% to 25% with the average being about 21 %. An allocated contingency was applied to the base cost plus the design allowance. This markup is for potential risks of unknowns associated at this level of design. It also considers unforeseen conditions during construction. The allocated contingency in this estimate ranges from 10% to 50%, and the average is about 16%.

Change order contingency is calculated over the construction cost without the RoW. This added to the construction cost without the RoW gives the total construction cost. Soft costs are calculated over the total construction cost. Also, the unallocated contingency is calculated as 10% over the total construction cost. Hence, the total project cost is the sum of total construction cost, RoW costs, unallocated contingency and soft costs.

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3.2 Key assumptions

B7 Revised	B7/C9T	"Apples-to-Apples"	Comment
Project team adopted the same assumptions as Sound Transit for utility modification costs. Puget Sound Energy's comments on the SDEIS which indicate additional cost have not been incorporated.	Puget Sound Energy's (PSE) comments were provided in 2010, and were not included in ST's estimate	Yes	These PSE costs are noted as an addition but are not included in the direct comparison.
Variable contingency: as per Sound Transit	Variable contingency as design allowance average 21% and allocated contingency average 16%	Yes	

Table 4 - Comparison with Sound Transit DEIS and SDEIS key assumptions

The assumptions adopted in this cost estimate are consistent with Sound Transit's estimating approach. The key assumptions are as follows:

- The general contractor will work a standard 40 hour week.
- Costs are based on a design–bid–build contract
- A 9.5% sales tax rate is applied to material, equipment and subcontract costs
- Shoring for open excavations is soldier pile with timber lagging and tiebacks
- Mostly retaining walls for retained cut and fill guide ways, stations, and roadway ramps are cast-in-place concrete. Retaining walls used for roadways at the station are MSE walls.
- A hazardous material remediation cost was included for the BNSF rail right of way removal of ballast and ties. Other costs for potential remediation sites are based on the Sound Transit East Link Draft Environment Impact Statement.
- Abatement and remediation prior to demolition is not included as per Sound Transit.
- Exact locations for traction power substations have not been determined. Costs as per the Sound Transit estimate are used.
- Sound Transit's costs for the crossovers and turnouts were adopted

3.3 Methodology

B7 Revised	B7/C9T	"Apples-to-Apples"	Comment
The alternative was estimated from the segment A/B interface to the South End of the Bellevue Transit center Station	The C9T estimate for the section from Segment B to the south of the Bellevue Transit center was broken out from the Sound Transit Estimate and added to the B7 estimate	Yes	To allow 'apples to apples' comparison, the cost has been calculated from the start of segment B through to south of Bellevue Transit Center where the two alignments meet.
Estimating Methodology: Eastside HCT Study – Alternative Screening Evaluations – Phase2, "Basis of Estimate for Alternative Cost Comparison"	Same	Yes	
Environmental mitigation costs for Sturtevant creek and A-2 Station provided by Herrera Inc. additional to those calculated by Sound Transit's method	Environmental mitigation costs calculated by Sound Transit	Yes	Environmental mitigation costs in the Sturtevant creek were provided by Herrera Inc.

Table 5 - Comparison with Sound Transit DEIS and SDEIS methodology

The methodology adopted in this cost estimate is consistent with Sound Transit's estimating approach.

4 Comparison between B7-Revised and B7/C9T

4.1 Design differences

The key differences between the B7–Revised Early Concept Alignment and the B7/C9T are as follows:

- A-2 Station is included in B7-Revised whereas 118th Avenue Station is included in the B7/C9T estimate.
- Difference in the construction approach and design of Mercer Slough structure.
- Alignment through the BNSF corridor is narrower and has no provision for dedicated freight track. Additional cost associated with accommodation of freight track has been calculated and included in the summary of this report.
- B7R is on retained fill alongside Sturtevant Creek, instead of elevated as per B7
- East Main Station is in retained cut trench for B7-Revised, rather than elevated as per B7.
- B7-Revised enters tunnel portal at SE corner of NE 2nd Street and NE 112th Avenue, B7/C9T portal is on SW side of Main Street and SE 112th Avenue.

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4.2 Estimate format

Costs for B7–Revised and B7/C9T are summarized below. Comments on reasons for any differences are also presented. The detailed estimates adopt the FTA Standard Cost categories (SCC) 10 through 60, consistent with Sound Transit. Only the subcategories that have quantities and costs are shown in the estimate detail for clarity. The complete cost estimate is incorporated in Appendix A.

B7–Revised and ST's B7 and C9T estimates are divided into the following segments for ease of understanding the cost comparison:

Report section reference	B7–Revised	B7/C9T
Section 4.3.1	Segment B excluding stations	
Section 4.3.2	A-2 Station Park-and-Ride	
Section 4.3.3		118th Station Park & Ride
Section 4.3.4	Segment B/C boundary to NE 2nd Street portal	
Section 4.3.5	NE 2nd Street portal to Bellevue Transit Center Station	
Section 4.3.6	Segment C - East Main Station	
Section 4.3.7	Segment C – Segment B/C boundary to Bellevue Transit Center Station	

Table 6 - Elements of cost comparison

4.3 Detailed cost comparison

Separate cost estimates are provided in the following sections for each of the segments described above. The detailed cost estimate is provided in Appendix A.

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4.3.1 Segment B - excluding stations

Cat	Sub-point	Description	B7-Revised	B7/C9T	Delta	Explanation
10	GUIDEWAY & TRACK ELEMENTS					
	10.04	Guideway: Aerial structure	$ 86.65	$ 115.49	$ (28.84)	B7-Revised aerial structure incorporates changes in vertical alignment. B7-Revised proposes mostly typical span (120') structure, B7/C9T proposes long spans
	10.08	Guideway: Retained cut or fill	$ 6.54	$ 2.70	$ 3.85	B7-Revised cost includes cut and fill quantities for the guideway and Cost for Retaining walls on the retained cut and fill
	10.09	Track: Direct fixation	$ 11.11	$ 11.57	$ (0.45)	Based on track length
	10.10	Track: Embedded	$ 0.20	$ 0.16	$ 0.04	
	10.11	Track: Ballasted	$ 3.33	$ 2.89	$ 0.44	
	10.12	Track: Special (switches, turnouts)	$ 0.41	$ 0.41	$ -	
20	STATIONS, STOPS, TERMINALS, INTERMODAL					
30	SUPPORT FACILITIES: YARDS, SHOPS, ADMIN BLDGS					
40	SITEWORK AND SPECIAL CONDITIONS					
	40.01	Demolition, Clearing, Earthwork	$ 1.14	$ 1.06	$ 0.08	
	40.02	Site Utilities, Utility Relocation	$ 5.42	$ 5.27	$ 0.15	Quantities extrapolated for B7-revised segment length
	40.03	Haz. mat'l, contam'd soil removal/ mitigation, ground water treatments	$ 2.80	$ 2.70	$ 0.11	Quantities extrapolated to suit B7-Revised segment length

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Cat	Sub-point	Description	B7-Revised	B7/C9T	Delta	Explanation
	40.04	Environmental mitigation, e.g. wetlands, historic/ archeologic, parks	$ 1.61	$ 1.57	$ 0.04	
	40.05	Site structures including retaining walls, sound walls	$ 1.41	$ 4.10	$ (2.69)	B7-Revised retaining walls for guideway included in 10.08
	40.06	Pedestrian / bike access and accommodation, landscaping	$ 2.38	$ 2.31	$ 0.07	B7-Revised quantities extrapolated for segment length
	40.07	Automobile, bus, van accessways including roads, parking lots	$ 19.11	$ 17.30	$ 1.81	B7-Revised quantities extrapolated for segment length
	40.08	Temporary Facilities and other Indirect Costs During Construction	$ 2.00	$ 1.93	$ 0.07	
50	**SYSTEMS**					
	50.01	Train control and signals	$ 11.87	$ 11.94	$ (0.07)	Based on B7-Revised segment length
	50.03	Traction power supply: substations	$ 3.95	$ 3.95	$ -	
	50.04	Traction power distribution: catenary and third rail	$ 3.45	$ 3.35	$ 0.09	Based on track length
	50.05	Communications	$ 5.70	$ 6.41	$ (0.70)	Based on track length
60	**ROW, LAND, EXISTING IMPROVEMENTS**					
	60.01	Right of Way	$ 33.78	$ 63.46	$ (29.68)	ROW costs provided by ST and are in 2007 dollars
	ESTIMATED COST OF CONSTRUCTION		**$ 208.09**	**$ 264.36**	**$ (56.27)**	
70	**VEHICLES**					

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Cat	Sub-point	Description	B7-Revised	B7/C9T	Delta	Explanation
80	**PROFESSIONAL SERVICES**					
90	**UNALLOCATED CONTINGENCY**					
	SEGMENT TOTAL WITH DESIGN ALLOWANCE & ALLOCATED CONTINGENCY		**$ 208.09**	**$ 264.36**	**$ (56.27)**	

Table 7 - Segment B - excluding stations

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Cat	Sub-point	Description	B7-Revised	B7/C9T	Delta	Explanation
	SEGMENT TOTAL WITH DESIGN ALLOWANCE & ALLOCATED CONTINGENCY		**$ 208.09**	**$ 264.36**	**$ (56.27)**	From table above
		Construction Cost without ROW Costs	$ 174.31	$ 200.90	$ (26.59)	
		Change order contingency (10%)	$ 17.43	$ 20.09	$ (2.66)	
	TOTAL CONSTRUCTION COST		**$ 191.74**	**$ 220.99**	**$ (29.25)**	
		ROW Costs	$ 33.78	$ 63.46	$ (29.68)	
		Construction management (8.5%)	$ 16.30	$ 18.78	$ (2.49)	
		Environmental/PE (5%)	$ 9.59	$ 11.05	$ (1.46)	
		Final Design, Specs, Permits (12.5%)	$ 23.97	$ 27.62	$ (3.66)	
		Agency Administration (6%)	$ 16.52	$ 20.51	$ (3.99)	
	TOTAL SOFT COSTS		**$ 66.37**	**$ 77.97**	**$ (11.60)**	
		Unallocated Contingency(10%)	$ 19.17	$ 22.10	$ (2.92)	
	TOTAL COST: LOW WITHOUT PROJECT RESERVE		**$ 311.07**	**$ 384.52**	**$ (73.45)**	
	TOTAL COST: HIGH WITH PROJECT RESERVE		**$ 357.73**	**$ 442.20**	**$ (84.47)**	Project Reserve is 15%

Table 8 - Segment B - excluding stations: including soft costs

4.3.2 Segment B - A-2 Station

The A-2 Station does not form part of the B7/C9T alternative developed by Sound Transit. For a comparison with the costs presented in the South Bellevue Station Alternative Location Analysis (SBSALA) study, refer to technical memo A-2 Station Cost Estimate (TM05).

Cat	Sub-point	Description	B7-Revised	B7/C9T	Delta	Explanation
10	**GUIDEWAY & TRACK ELEMENTS**					
	10.04	Guideway: Aerial structure	$ 6.99	$ -	$ 6.99	
20	**STATIONS, STOPS, TERMINALS, INTERMODAL**					
	20.02	Aerial station, stop, shelter, mall, terminal, platform	$ 30.71	$ -	$ 30.71	
	20.06	Automobile parking multi-story structure	$ 46.67	$ -	$ 46.67	
	20.07	Elevators, escalators	$ 2.58	$ -	$ 2.58	
30	**SUPPORT FACILITIES: YARDS, SHOPS, ADMIN BLDGS**					
40	**SITEWORK AND SPECIAL CONDITIONS**					
	40.01	Demolition, Clearing, Earthwork	$ 8.11	$ -	$ 8.11	
	40.02	Site Utilities, Utility Relocation	$ 0.24	$ -	$ 0.24	
	40.04	Environmental mitigation, e.g. wetlands, historic/ archeologic, parks	$ 1.23	$ -	$ 1.23	
	40.05	Site structures including retaining walls, sound walls	$ 0.89	$ -	$ 0.89	
	40.06	Pedestrian / bike access and accommodation, landscaping	$ 2.22	$ -	$ 2.22	

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Cat	Sub-point	Description	B7-Revised	B7/C9T	Delta	Explanation
	40.07	Automobile, bus, van accessways including roads, parking lots	$ 17.01	$ -	$ 17.01	
	40.08	Temporary Facilities and other Indirect Costs During Construction	$ 1.18	$ -	$ 1.18	
50	**SYSTEMS**					
	50.02	Traffic signals and crossing protection	$ 0.73	$ -	$ 0.73	
	50.05	Communications	$ 0.86	$ -	$ 0.86	
	50.06	Fare collection system and equipment	$ 0.36	$ -	$ 0.36	
60	**ROW, LAND, EXISTING IMPROVEMENTS**					
	60.01	Right of Way	$ 14.03	$ -	$ 14.03	
	ESTIMATED COST OF CONSTRUCTION		**$ 133.80**	**$ -**	**$ 133.80**	
70	**VEHICLES**					
80	**PROFESSIONAL SERVICES**					
90	**UNALLOCATED CONTINGENCY**					
	SEGMENT TOTAL WITH DESIGN ALLOWANCE & ALLOCATED CONTINGENCY		**$ 133.80**	**$ -**	**$ 133.80**	

Table 9 - Segment B - A-2 Station

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Cat	Sub-point	Description	B7-Revised	B7/C9T	Delta	Explanation
	SEGMENT TOTAL WITH DESIGN ALLOWANCE & ALLOCATED CONTINGENCY		**$ 133.80**	**$ -**	**$ 133.80**	From table above
		RoW	$ 14.03	$ -	$ 14.03	From sub-point 60 in table above
		Construction Cost without ROW Costs	$ 119.77	$ -	$ 119.77	
		Change order contingency (10%)	$ 11.98	$ -	$ 11.98	
	TOTAL CONSTRUCTION COST		**$ 131.75**	**$ -**	**$ 131.75**	
		ROW Costs	$ 14.03	$ -	$ 14.03	
		Construction management (8.5%)	$ 11.20	$ -	$ 11.20	
		Environmental/PE (5%)	$ 6.59	$ -	$ 6.59	
		Final Design, Specs, Permits (12.5%)	$ 16.47	$ -	$ 16.47	
		Agency Administration (6%)	$ 10.80	$ -	$ 10.80	
	TOTAL SOFT COSTS		**$ 45.06**	**$ -**	**$ 45.06**	
		Unallocated Contingency(10%)	$ 13.17	$ -	$ 13.17	
	TOTAL COST: LOW WITHOUT PROJECT RESERVE		**$ 204.01**	**$ -**	**$ 204.01**	
	TOTAL COST: HIGH WITH PROJECT RESERVE		**$ 234.61**	**$ -**	**$ 234.61**	Project Reserve is 15%

Table 10 - Segment B - A-2 Station: including soft costs

4.3.3 Segment B - 118th Avenue Station

The 118th Avenue Station does not form part of the B7-Revised alternative. The project team has extracted the station costs below from the Sound Transit cost estimate for reference.

Cat	Sub-point	Description	B7-Revised A-2 Station	B7/C9T	Delta	Explanation
10	**GUIDEWAY & TRACK ELEMENTS**					
	10.04	Guideway: Aerial structure	$ -	$ 4.00	$ (4.00)	
	10.09	Track: Direct fixation	$ -	$ 0.50	$ (0.50)	
20	**STATIONS, STOPS, TERMINALS, INTERMODAL**					
	20.01	At-grade station, stop, shelter, mall, terminal, platform	$ -	$ 0.17	$ (0.17)	
	20.02	Aerial station, stop, shelter, mall, terminal, platform	$ -	$ 21.80	$ (21.80)	
	20.06	Automobile parking multi-story structure	$ -	$ 30.11	$ (30.11)	
	20.07	Elevators, escalators	$ -	$ 1.60	$ (1.60)	
30	**SUPPORT FACILITIES: YARDS, SHOPS, ADMIN BLDGS**					
40	**SITEWORK AND SPECIAL CONDITIONS**					
	40.01	Demolition, Clearing, Earthwork	$ -	$ 0.23	$ (0.23)	
	40.02	Site Utilities, Utility Relocation	$ -	$ 0.06	$ (0.06)	
	40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments	$ -	$ 0.09	$ (0.09)	
	40.04	Environmental mitigation, e.g. wetlands, historic/ archeologic, parks	$ -	$ 0.05	$ (0.05)	

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Cat	Sub-point	Description	B7-Revised A-2 Station	B7/C9T	Delta	Explanation
	40.06	Pedestrian / bike access and accommodation, landscaping	$ -	$ 1.93	$ (1.93)	
	40.07 Total	Automobile, bus, van accessways including roads, parking lots	$ -	$ 1.58	$ (1.58)	
	40.08	Temporary Facilities and other Indirect Costs During Construction	$ -	$ 0.63	$ (0.63)	
50	**SYSTEMS**					
	50.01	Train control and signals	$ -	$ 0.25	$ (0.25)	
	50.04	Traction power distribution: catenary and third rail	$ -	$ 0.09	$ (0.09)	
	50.05	Communications	$ -	$ 0.16	$ (0.16)	
	50.06	Fare collection system and equipment	$ -	$ 0.36	$ (0.36)	
60	**ROW, LAND, EXISTING IMPROVEMENTS**					
	60.01	Right of Way	$ -	$ 27.52	$ (27.52)	
	ESTIMATED COST OF CONSTRUCTION		$ -	**$ 91.13**	**$ (91.13)**	
70	**VEHICLES**					
80	**PROFESSIONAL SERVICES**					
90	**UNALLOCATED CONTINGENCY**					
	SEGMENT TOTAL WITH DESIGN ALLOWANCE & ALLOCATED CONTINGENCY		**$ -**	**$ 91.13**	**$ (91.13)**	

Table 11 - Segment B - 118th Avenue Station

Draft

Cat	Sub-point	Description	B7-Revised	B7/C9T	Delta	Explanation
	SEGMENT TOTAL WITH DESIGN ALLOWANCE & ALLOCATED CONTINGENCY		**$ -**	**$ 91.13**	**$ (91.13)**	From table above
		Construction Cost without ROW Costs	$ -	$ 63.61	$ (63.61)	
		Change order contingency (10%)	$ -	$ 6.36	$ (6.36)	
	TOTAL CONSTRUCTION COST		**$ -**	**$ 69.97**	**$ (69.97)**	
		ROW Costs	$ -	$ 27.52	$ (27.52)	
		Construction management (8.5%)	$ -	$ 5.95	$ (5.95)	
		Environmental/PE (5%)	$ -	$ 3.50	$ (3.50)	
		Final Design, Specs, Permits (12.5%)	$ -	$ 8.75	$ (8.75)	
		Agency Administration (6%)	$ -	$ 6.94	$ (6.94)	
	TOTAL SOFT COSTS		**$ -**	$ 25.13	$ (25.13)	
		Unallocated Contingency(10%)	$ -	$ 7.00	$ (7.00)	
	TOTAL COST: LOW WITHOUT PROJECT RESERVE		**$ -**	**$ 129.62**	**$ (129.62)**	
	TOTAL COST: HIGH WITH PROJECT RESERVE		**$ -**	**$ 149.06**	**$ (149.06)**	Project Reserve is 15%

Table 12 - Segment B - 118th Avenue Station: including soft costs

4.3.4 Segment C - Segment B/C boundary to NE 2nd Street portal

Unlike Segment B, Right of Way costs are not available for Segment C at a level of detail finer than segment level, which includes from the Segment B/C boundary to NE 2nd Street portal. As a result RoW costs are not reported for Segment B/C boundary to NE 2nd Street portal, but are reported in aggregate in Section 4.3.7 for the partial segment of Segment C studied.

Cat	Sub-point	Description	B7-Revised	B7/C9T	Delta	Explanation
10	**GUIDEWAY & TRACK ELEMENTS**					
	10.04	Guideway: Aerial structure	$ 5.99	$ 16.58	$ (10.59)	B7-Revised segment from B boundary to Portal is mostly at grade
	10.08	Guideway: Retained cut or fill	$ 10.54	$ 3.32	$ 7.21	B7-Revised cost includes cut & fill for the segment and for Sturtevant creek, ST's cut and fill for Sturvenant creek is included in section 40.02; B7-Revised cost includes retaining walls in this part of the segment
	10.09	Track: Direct fixation	$ 3.07	$ 3.02	$ 0.04	Track length change
	10.12	Track: Special (switches, turnouts)	$ 0.83	$ 0.83	$ -	
20	**STATIONS, STOPS, TERMINALS, INTERMODAL**					

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Cat	Sub-point	Description	B7-Revised	B7/C9T	Delta	Explanation
30	**SUPPORT FACILITIES: YARDS, SHOPS, ADMIN BLDGS**					
40	**SITEWORK AND SPECIAL CONDITIONS**					
	40.01	Demolition, Clearing, Earthwork	$ 5.92	$ 0.33	$ 5.59	B7-Revised demo cost includes Sheraton (taking into account size of the building)
	40.02	Site Utilities, Utility Relocation	$ 6.10	$ 6.35	$ (0.25)	Costs from ST are lump summed and extrapolated, to suit the segment length
	40.03	Haz. mat'l, contam'd soil removal/ mitigation, ground water treatments	$ 0.09	$ 0.11	$ (0.02)	ST's LS allowance extrapolated
	40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	$ 1.24	$ 0.08	$ 1.16	B7-Revised mitigation cost for Creek was provided by Herrera Inc; includes only wetland mitigation. Also, cost for buffer zone is calculated
	40.06	Pedestrian / bike access and accommodation, landscaping	$ 0.17	$ 0.17	$ 0.00	
	40.07	Automobile, bus, van accessways including roads, parking lots	$ 4.38	$ 1.47	$ 2.90	Includes cost of Main Street bridge and culvert and Sturtevant Creek
	40.08	Temporary Facilities and other Indirect Costs During Construction	$ 0.45	$ 0.38	$ 0.06	
50	**SYSTEMS**					
	50.01	Train control and signals	$ 4.14	$ 4.12	$ 0.02	

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Cat	Sub-point	Description	B7-Revised	B7/C9T	Delta	Explanation
	50.04	Traction power distribution: catenary and third rail	$ 0.58	$ 1.30	$ (0.72)	
	50.05	Communications	$ 0.96	$ 0.95	$ 0.01	
	50.07	Central Control	$ 1.38	$ 1.38	$ -	
60	**ROW, LAND, EXISTING IMPROVEMENTS**					
	60.01	Right of Way	$ -	$ -	$ -	
	ESTIMATED COST OF CONSTRUCTION		**$ 45.82**	**$ 40.39**	**$ 5.43**	
70	**VEHICLES**					
80	**PROFESSIONAL SERVICES**					
90	**UNALLOCATED CONTINGENCY**					
	SEGMENT TOTAL WITH DESIGN ALLOWANCE & ALLOCATED CONTINGENCY		**$ 45.82**	**$ 40.39**	**$ 5.43**	

Table 13 - Segment C - Segment B/C boundary to NE 2nd Street portal

Draft

4.3.5 Segment C – NE 2nd Street portal to Bellevue Transit Center Station

Unlike Segment B, Right of Way costs are not available for Segment C at a level of detail finer than segment level, which includes from the Portal to Bellevue Transit Center Station. As a result RoW costs are not reported for NE 2nd Street portal to Bellevue Transit Center Station, but are reported in aggregate in Section 4.3.7 for the partial segment of Segment C studied.

Cat	Sub-point	Description	B7-Revised	B7/C9T	Delta	Explanation
10	GUIDEWAY & TRACK ELEMENTS					
	10.06	Guideway: Underground cut & cover	$ 47.38	$ 71.69	$ (24.31)	B7/C9T has deeper 'cut and cover boxes' than B7-Revisd. Also, C9T tunnel is longer
	10.07	Guideway: Underground tunnel	$ 3.59	$ 3.74	$ (0.15)	B7-Revised includes tunnel elements as per the tunnel length
	10.09	Track: Direct fixation	$ 1.38	$ 1.77	$ (0.39)	Based on tunnel length
20	STATIONS, STOPS, TERMINALS, INTERMODAL					
30	SUPPORT FACILITIES: YARDS, SHOPS, ADMIN BLDGS					
40	SITEWORK AND SPECIAL CONDITIONS					
	40.01	Demolition, Clearing, Earthwork	$ 0.45	$ 0.53	$ (0.07)	

Draft

Cat	Sub-point	Description	B7-Revised	B7/C9T	Delta	Explanation
	40.02	Site Utilities, Utility Relocation	$ 5.59	$ 7.13	$ (1.54)	ST's LS cost used and Extrapolation factor
	40.06	Pedestrian / bike access and accommodation, landscaping	$ 0.02	$ 0.02	$ 0.00	
	40.07	Automobile, bus, van accessways including roads, parking lots	$ 2.11	$ 2.30	$ (0.19)	
	40.08	Temporary Facilities and other Indirect Costs During Construction	$ 0.10	$ 0.13	$ (0.03)	
50	**SYSTEMS**					
	50.01	Train control and signals	$ 0.70	$ 0.90	$ (0.20)	Track length different
	50.04	Traction power distribution: catenary and third rail	$ 0.26	$ 0.76	$ (0.50)	Track length different
	50.05	Communications	$ 0.43	$ 0.55	$ (0.12)	Track length different
60	**ROW, LAND, EXISTING IMPROVEMENTS**					
	60.01	Right of Way	$ -	$ -	$ -	
	ESTIMATED COST OF CONSTRUCTION		**$ 62.03**	**$ 89.53**	**$ (27.50)**	ST's cost does not include ROW costs
70	**VEHICLES**					

Draft

Cat	Sub-point	Description	B7-Revised	B7/C9T	Delta	Explanation
80	**PROFESSIONAL SERVICES**					
90	**UNALLOCATED CONTINGENCY**					
	SEGMENT TOTAL WITH DESIGN ALLOWANCE & ALLOCATED CONTINGENCY		**$ 62.03**	**$ 89.53**	**$ (27.50)**	

Table 14 - Segment C – NE 2nd Street portal to Bellevue Transit Center Station

Draft

4.3.6 Segment C - East Main Station

Unlike Segment B, Right of Way costs are not available for Segment C at a level of detail finer than segment level, which includes from the East Main Station. As a result RoW costs are not reported for the East Main Station, but are reported in aggregate in Section 4.3.7 for the partial segment of Segment C studied.

Cat	Sub-point	Description	B7-Revised A-2 Station	B7/C9T	Delta	Explanation
10	GUIDEWAY & TRACK ELEMENTS					
	10.04	Guideway: Aerial structure	$ -	$ 3.29	$ (3.29)	ST has an aerial East Main station
	10.08	Guideway: Retained cut or fill	$ 2.15	$ -	$ 2.15	B7-Revised station is in a trench
	10.09	Track: Direct fixation	$ 0.66	$ 0.50	$ 0.16	Track length
20	STATIONS, STOPS, TERMINALS, INTERMODAL					
	20.01	At-grade station, stop, shelter, mall, terminal, platform	$ 0.29	$ 0.29	$ -	
	20.02	Aerial station, stop, shelter, mall, terminal, platform	$ -	$ 31.74	$ (31.74)	ST has aerial EM station
	20.03	Underground station, stop, shelter, mall, terminal, platform	$ 28.80	$ -	$ 28.80	B7-Revised has station located in a retained cut site
	20.07	Elevators, escalators	$ 1.13	$ 1.16	$ (0.03)	
30	SUPPORT FACILITIES: YARDS, SHOPS, ADMIN BLDGS					
40	SITEWORK AND SPECIAL CONDITIONS					
	40.01	Demolition, Clearing, Earthwork	$ 3.14	$ 0.38	$ 2.76	Demo includes Red Lions site; if ST includes demo of the same, their estimate seems low for the size of the building
	40.02	Site Utilities, Utility Relocation	$ 0.57	$ 0.43	$ 0.13	Place-keeper: Extrapolation factor based on tunnel length applied to LS cost from ST's estimate

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Cat	Sub-point	Description	B7-Revised A-2 Station	B7/C9T	Delta	Explanation
	40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments	$ 0.03	$ 0.03	$ 0.01	
	40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	$ 0.03	$ 0.02	$ 0.01	
	40.06	Pedestrian / bike access and accommodation, landscaping	$ 1.16	$ 0.76	$ 0.39	B7-Revised station design cost has been included based on drawings
	40.08	Temporary Facilities and other Indirect Costs During Construction	$ 0.38	$ 0.40	$ (0.02)	
50	**SYSTEMS**					
	50.01	Train control and signals	$ 0.33	$ 0.25	$ 0.08	
	50.04	Traction power distribution: catenary and third rail	$ 0.12	$ 0.22	$ (0.09)	
	50.05	Communications	$ 1.07	$ 1.02	$ 0.05	
	50.06	Fare collection system and equipment	$ 0.36	$ 0.36	$ -	
60	**ROW, LAND, EXISTING IMPROVEMENTS**					
	60.01	Right of Way	$ -	$ -	$ -	
	ESTIMATED COST OF CONSTRUCTION		**$ 40.21**	**$ 40.84**	**$ (0.63)**	

Draft

Cat	Sub-point	Description	B7-Revised A-2 Station	B7/C9T	Delta	Explanation
70	**VEHICLES**					
80	**PROFESSIONAL SERVICES**					
90	**UNALLOCATED CONTINGENCY**					
	SEGMENT TOTAL WITH DESIGN ALLOWANCE & ALLOCATED CONTINGENCY		**$ 40.21**	**$ 40.84**	**$ (0.63)**	

Table 15 - Segment C - East Main Station

Draft

4.3.7 Segment C – Segment B/C boundary to Bellevue Transit Center Station

Summary of costs for the B7–Revised and B7/C9T alternatives for Segment C from the Segment B/C interface to the Bellevue Transit Center (inclusive of costs presented in Sections 4.3.4, 4.3.5, and 4.3.6) are shown below:

Cat	Sub-point	Description	B7-Revised A-2 Station	B7/C9T	Delta	Explanation
10	**GUIDEWAY & TRACK ELEMENTS**					
	10.04	Guideway: Aerial structure	$ 5.99	$ 19.87	$ (13.88)	
	10.06	Guideway: Underground cut & cover	$ 47.38	$ 71.69	$ (24.31)	
	10.07	Guideway: Underground tunnel	$ 3.59	$ 3.74	$ (0.15)	
	10.08	Guideway: Retained cut or fill	$ 12.69	$ 3.32	$ 9.36	
	10.09	Track: Direct fixation	$ 5.11	$ 5.29	$ (0.19)	
	10.12	Track: Special (switches, turnouts)	$ 0.83	$ 0.83	$ -	
20	**STATIONS, STOPS, TERMINALS, INTERMODAL**					
	20.01	At-grade station, stop, shelter, mall, terminal, platform	$ 0.29	$ 0.29	$ -	
	20.02	Aerial station, stop, shelter, mall, terminal, platform	$ -	$ 31.74	$ (31.74)	
	20.03	Underground station, stop, shelter, mall, terminal, platform	$ 28.80	$ -	$ 28.80	
	20.07	Elevators, escalators	$ 1.13	$ 1.16	$ (0.03)	
30	**SUPPORT FACILITIES: YARDS, SHOPS, ADMIN BLDGS**					
40	**SITEWORK AND SPECIAL CONDITIONS**					

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Cat	Sub-point	Description	B7-Revised A-2 Station	B7/C9T	Delta	Explanation
	40.01	Demolition, Clearing, Earthwork	$ 9.51	$ 1.23	$ 8.28	
	40.02	Site Utilities, Utility Relocation	$ 12.26	$ 13.92	$ (1.66)	
	40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments	$ 0.12	$ 0.13	$ (0.01)	
	40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	$ 1.27	$ 0.10	$ 1.17	
	40.06	Pedestrian / bike access and accommodation, landscaping	$ 1.34	$ 0.95	$ 0.39	
	40.07	Automobile, bus, van accessways including roads, parking lots	$ 6.49	$ 3.78	$ 2.71	
50	**SYSTEMS**					
	50.01	Train control and signals	$ 5.18	$ 5.27	$ (0.09)	
	50.04	Traction power distribution: catenary and third rail	$ 0.96	$ 2.28	$ (1.32)	
	50.05	Communications	$ 2.46	$ 2.51	$ (0.06)	
	50.06	Fare collection system and equipment	$ 0.36	$ 0.36	$ -	
	50.07	Central Control	$ 1.38	$ 1.38	$ -	
60	**ROW, LAND, EXISTING IMPROVEMENTS**					
	60.01	Right of Way	$ 136.90	$ 94.36	$ 42.54	

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Cat	Sub-point	Description	B7-Revised A-2 Station	B7/C9T	Delta	Explanation
	ESTIMATED COST OF CONSTRUCTION		**$ 284.97**	**$ 265.12**	**$ 19.84**	Includes ROW
70	**VEHICLES**					
80	**PROFESSIONAL SERVICES**					
90	**UNALLOCATED CONTINGENCY**					
	SEGMENT TOTAL WITH DESIGN ALLOWANCE & ALLOCATED CONTINGENCY		**$ 84.97**	**$ 265.12**	**$ 19.84**	

Table 16 - Segment C – Segment B/C boundary to Bellevue Transit Center Station

Draft

Cat	Sub-point	Description	B7-Revised	B7/C9T	Delta	Explanation
	SEGMENT TOTAL WITH DESIGN ALLOWANCE & ALLOCATED CONTINGENCY		**$ 284.97**	**$ 265.12**	$ 19.85	From table above
		Construction Cost without ROW Costs	$ 148.07	$ 170.76	$ (22.70)	
		Change order contingency (10%)	$ 14.81	$ 17.08	$ (2.27)	
	TOTAL CONSTRUCTION COST		**$ 162.87**	**$ 187.84**	**$ (24.97)**	
		ROW Costs	$ 136.90	$ 94.36	$ 42.54	
		Construction management (8.5%)	$ 13.84	$ 15.97	$ (2.13)	
		Environmental/PE (5%)	$ 8.14	$ 9.39	$ (1.25)	
		Final Design, Specs, Permits (12.5%)	$ 20.36	$ 23.48	$ (3.12)	
		Agency Administration (6%)	$ 20.53	$ 19.86	$ 0.67	
	TOTAL SOFT COSTS		$ 62.87	$ 68.70	$ (5.83)	
		Unallocated Contingency(10%)	$ 16.29	$ 18.78	$ (2.49)	
	TOTAL COST: LOW WITHOUT PROJECT RESERVE		**$ 378.93**	**$ 369.68**	**$ 9.25**	
	TOTAL COST: HIGH WITH PROJECT RESERVE		**$ 435.77**	**$ 425.14**	**$ 10.63**	Project Reserve is 15%

Table 17 - Segment C – Segment B/C boundary to Bellevue Transit Center Station: including soft costs

5 Summary

5.1 Construction cost summary

The construction costs of each element of the two alternatives are presented below. These costs do not include Right of Way costs or soft costs.

$m 2007	B7 Revised	ST B7/C9T	Delta
Segment B (excl. stations)	$ 174	$ 201	$ (27)
118th Street Station	$ -	$ 64	$ (64)
A-2 Station	$ 120	$ -	$ 120
Segment B Total	$ 294	$ 265	$ 30
Segment C Total [1]	$ 148	$ 171	$ (23)
Total	**$ 442**	**$ 435**	**$ 7**

Note 1 - Segment C Total = End of B to Portal + Portal to Bellevue Transit Center + East Main Station

Table 18 - Construction cost summary

5.2 Right of Way costs

The Right of Way costs for each element of the two alternatives is presented below. These costs do not contain administration costs as per Sound Transit's basis of estimate.

$m 2007	B7 Revised	ST B7/C9T	Delta
Segment B (excl. stations)	$ 34	$ 63	$ (30)
118th Street Station	$ -	$ 28	$ (28)
A-2 Station	$ 14	$ -	$ 14
Segment B Total	$ 48	$ 91	$ (43)
Segment C Total [1]	$ 137	$ 94	$ 43
Total	**$ 185**	**$ 185**	**$ (1)**

Note 1 - To the south end of the proposed Bellevue Transit Center Station

Table 19 - Right of Way costs

Draft

5.3 Project cost

The total project cost for each element is presented below. These costs combine construction costs and right of way costs and add soft costs and contingency in the same manner as the DEIS/SDEIS estimate.

$m 2007	B7 Revised	ST B7/C9T	Delta
Segment B (excl. stations)	$ 311	$ 385	$ (73)
118th Street Station	$ -	$ 130	$ (130)
A-2 Station	$ 204	$ -	$ 204
Segment B Total	$ 515	$ 514	$ 1
Segment C Total [1]	$ 379	$ 370	$ 9
Total	**$ 894**	**$ 884**	**$ 10**

Note 1 - To the south end of the proposed Bellevue Transit Center Station

Table 20 - Project cost

Draft

6 Additional costs

6.1 Additional bus costs

Discussions with King County Metro and Sound Transit identified additional operational costs due to the additional bus travel time associated with the use of A-2 Station as compared to the use of the South Bellevue Park and Ride as is proposed under the B7 Alternative.

Item	Approximate Additional Cost
Additional operational costs and bus purchase for Sound Transit	Increased operating cost for bus service = $750,000 to $1,000,000 annually. Cost of two additional buses = $1.7m (2007$) reoccurring every 12 years. N.B. cost provided by Sound Transit.
Additional operational costs and bus purchase for King County Metro	Cost data has not been provide by KCM

Table 21 - Additional bus costs associated with B7-Revised alternative

6.2 Future costs associated with accommodating freight in the BNSF corridor

The B7- Revised Alternative assumes that any future freight operations within the former BNSF corridor would share the light rail tracks. Additional costs would be incurred when this future freight is implemented to accommodate freight trains.

Item	Approximate Additional Project Cost
Additional costs associated with future freight corridor	Increased costs due to additional turnouts, modifying OCS and communication systems ≈ $7m

Table 22 - Potential future costs associated with freight operations

A second option in the BNSF corridor has been considered which would provide space for a future dedicated freight rail corridor alongside the light rail tracks. Costs associated with this option are provided in TM14.

6.3 Additional costs which apply to both B7-Revised and B7/C9T

Additional costs that would be similar between B7-Revised and B7/C9T have been identified. However, additional costs are not included in the estimate.

Item	Approximate Additional Cost
Puget Sound Utility cost (ref PSE comments to DEIS)	Potential utility relocation costs of up to approximately $1m

Table 23 - Additional costs which apply to B7-Revised and B7/C9T alternatives

Draft

7 Conclusions

An early cost estimate was developed for the Early Concept Alignment for the B7–Revised alternative. The estimate was calculated using the method adopted by Sound Transit for the DEIS and for the SDEIS. The B7/C9T alterative was also estimated for comparison purposes. The estimates for segments B7 and C9T were provided by Sound Transit. The C9T estimate was adjusted to obtain the cost of C9T from the Segment B/C interface to the south end of the proposed Bellevue Transit Center Station.

The estimated project costs for each alternative are as follows:

B7–Revised [1]	B7/C9T [1]
$894m	$884m

Note 1 – To the south end of the proposed Bellevue Transit Center Station

Table 24 - Estimated project costs ($ 2007)

The key areas of cost differences are:

- Reductions in the Segment B costs (excluding stations) as a result of:
  - Mercer Slough structure design and an alternative construction method (pile driving gantry crane instead of temporary work platform) for the Mercer Slough crossing. Narrower construction through the BNSF corridor. These have led to reduction in construction cost of approx $27m
  - Reduction in RoW cost of approx $30m
  - Due to the aforementioned, reduction in soft costs, approx $17m

    Combined, these represent a reduction in project cost of approx. $73m.
- Reduction in Segment B RoW costs, largely related to the removal of 118th Avenue Station and reduced impacts on the STOR-House property. The B7-Revised Segment B RoW cost is $48m compared to $91M for B7/C9T.
- Increase in project cost because of the substitution of the 118th Avenue station ($130m) by the A-2 Station ($204m). This increase is due to the larger park and ride facility, greater excavation for below grade parking to reduce visual impacts and from more extensive access road and ramp construction. Stations represent increase in project cost of approx $74m.

- Cost differences in segment C as a result of:
  - Reduction in construction cost from SE 6th Street to the Bellevue Transit Center Station because of a less-elevated guideway and shorter cut-and-cover tunnel, approx $27m.
  - Addition of construction costs ≈$5m, due to demolition of Sheraton.
  - Reduction in soft costs approx $11m
  - Additional Right of Way cost in Segment C because of full takings of the Red Lion Hotel, the Sheraton Hotel, and a number of properties along NE 2nd Street. The B7-Revised segment C RoW cost is $137m compared to $94m for B7/C9T. This addition is approx $43m.

    These represent an increase in project cost of approx. $9m.

This technical memorandum does not include identification of other opportunities for cost savings. These will be addressed in the Interim Analysis Report.

Draft

Appendix A

Cost Estimate

Draft

ARUP

1. GENERAL INTRODUCTION

This document has been prepared by Arup to provide an indication of estimated costs for the East Link light rail B7/C9T to NE 2nd Portal (B7 – Revised) Alternative

The estimates within this document are not intended to set budget for the potential works, the budget can only be established once the Client's brief has been finalized, a design solution and program developed by the Project Team, and the forecasted costs subsequently approved by the Client.

2. BASIS AND CONTENT OF ESTIMATE

1 The work breakdown structure (WBS) and composite unit rates have been kept consistent with Sound Transit's (ST) estimate to facilitate an 'Apples to Apples' comparison between the Sound Transit B7 Estimate and the 'Revised B7' Estimate, as directed by the City of Bellevue.

2 The estimate is based on third quarter 2007 pricing to be consistent with the Sound Transit (ST) B7/C9T estimate. Arup's RoW costs are in current dollars, as provided by Roland Inc.

3 The costs provided are composite costs comprising of labor, materials, equipment, and subcontractor costs as well as productivities and additional project cost features that provide a comprehensive assessment of the items estimated.

4 The elemental estimate data was assessed by comparison of similar projects and cost reference material such as RSMeans, Federal Transit Authority (FTA) Cost data and Washington State DOT data.

5 Quantities are based upon 5% drawings of the revised B7 alignement prepared by Arup. For cost comparison purposes, the revised B7 alignment has been divided into five separate components; Arup A2 Station, East Main Station, Arup B7, Arup B7 to portal and portal to Bellevue Transit center.

3. EXCLUSIONS

1 The costs or impacts of latest environmental issues that result in litigations or development delays.

2 Planning and enquiry costs including legal expenses and fees.

5 Cost escalation beyond 3rd Qtr. 2007.

6 Risk based contingency analysis.

4 SOUND TRANSIT DOCUMENTS REFERRED TO FOR PREPARATION OF ESTIMATE

1 Sound Transit Eastside HCT Study- Alternative Screening Evaluations-Phase 2, 'Basis of Estimate for Alternative Cost comparison' prepared by CH2M Hill (February 15, 2008)

2 Sound Transit Eastside HCT Study- Alternative Screening Evaluations-Phase 2, 'Composite Unit Cost Report' prepared by CH2M Hill (February 15, 2008)

3 City of Bellevue Transportation Department 'South Bellevue Station Alternative Location Analysis' prepared by KPFF (July, 2010)

4 5% Arup Revised B7 drawings

5 Pudget Sound Energy's Supplemental DEIS Comments (Jan 10, 2011)

4. ASSUMPTIONS MADE IN THE PREPARATION OF THIS ESTIMATE

1 Consultant team has used Sound Transits assumptions and base data for the unit cost analysis and for B7-Revised study. This will aid in the 'Apples-to-Apples' comparison between the two cost estimates.

2 Costs are reported in 3rd quarter 2007 dollars and no allowance is included for escalation. RoW costs are in 2007 dollars and were provided by Sound Transit.

3 The same design allowance and allocated contingency % previously included in the Sound Transit estimate have been carried forward to this estimate.

4 The Arup B7 segment is similar to the ST B7 segment with the exceptions of changes in vertical alignment.

5 Cost elements that have changed/added according to the revised design, have been highlighted.

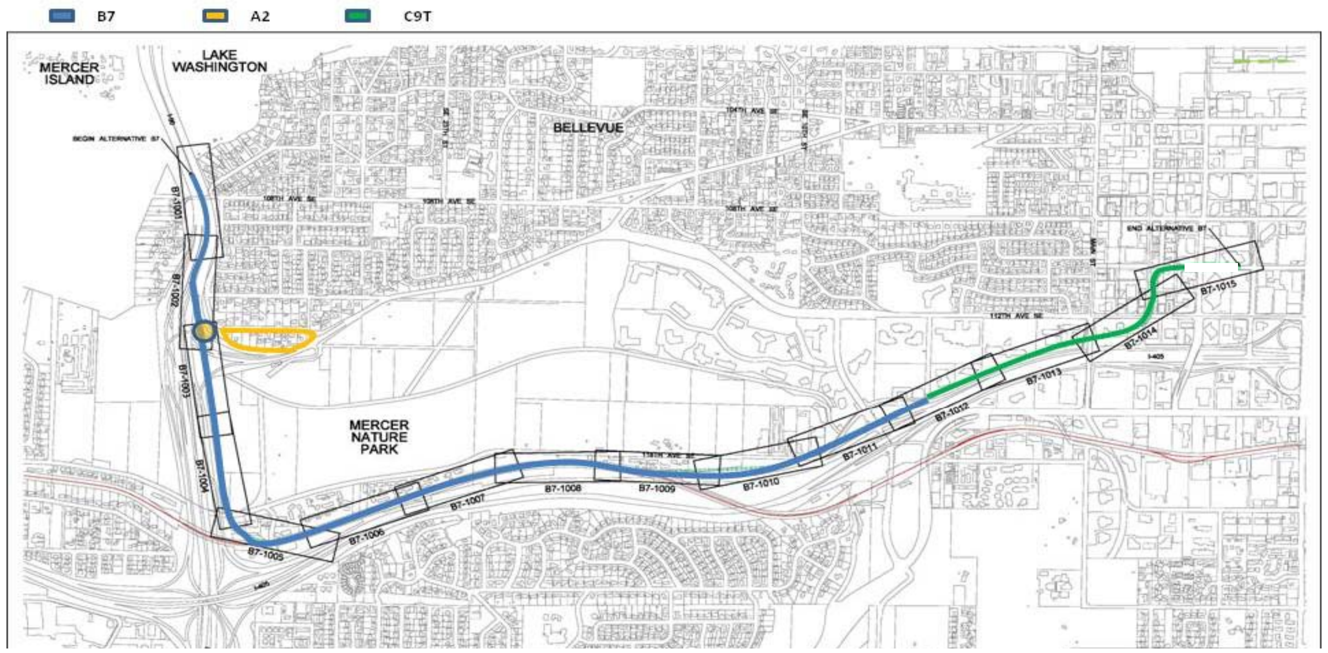
7 Due to the preliminary level of design, certain information was not available at the time of estimate preparation and assumptions were made based on the extrapolation of lump sum amounts for certain line items contained in the ST estimate.

8 The 'at grade' option of the Sturtevant creek has been included within this estimate. For the BNSF corridor, the base option is Shared Rail.

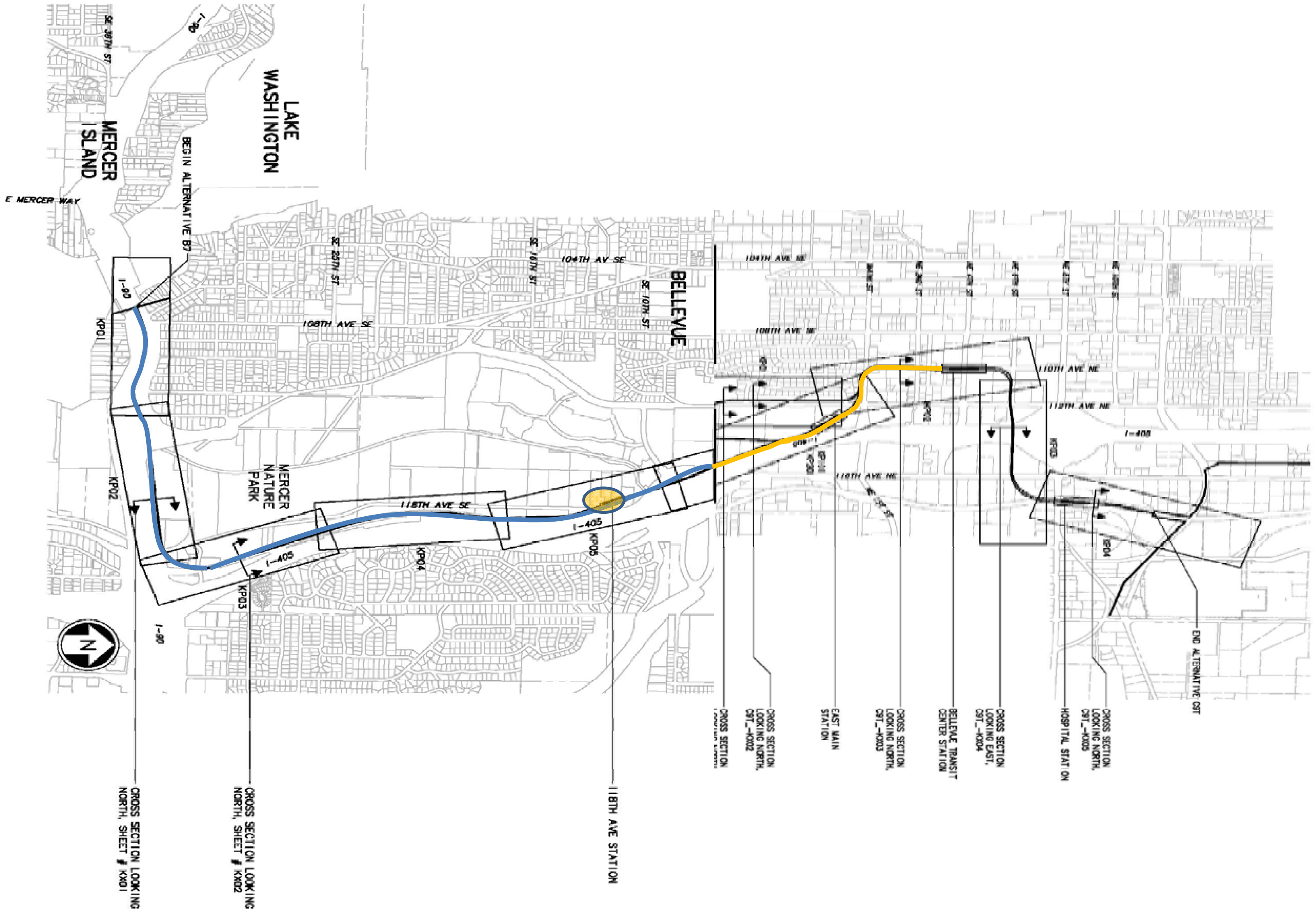
9 Demolition areas have been calculated based on analysis using Google Earth.

ARUP B7 SEGMENT (NTS) **For Cost estimation REVISED B7= B7+A2+C9T**

ARUP



Sound Transit B7/C9T SEGMENT (NTS)



OVERVIEW SUMMARY

A-2 station

Description	Arup	SBSALA	Delta	
Construction cost	$ 119.77	$ 107.04	$ 12.72	(without ROW, soft costs)
Project cost	$ 204.01	$ 165.01	$ 38.99	
Total	$ 119.77	$ 107.04	$ 12.72	

	Construction costs			ROW			Soft costs			Total Project costs				
Description	**Arup ($m)**	**ST ($m)**	**Delta ($m)**	**Arup ($m)**	**ST ($m)**	**Delta ($m)**	**Arup ($m)**	**ST ($m)**	**Delta ($m)**	**Arup ($m)**	**ST ($m)**	**Delta ($m)**	**Arup Length (RF)**	**ST Length (RF)**
B7 shared Rail	$ 174	$ 201	$ (27)	$ 34	$ 63	$ (30)	$ 103	$ 120	$ (17)	$ 311	$ 385	$ (73)	13,870	13,490
118th Station		$ 64	$ (64)		$ 28	$ (28)		$ 38	$ (38)		$ 130	$ (130)		380
A2	$ 120		$ 120	$ 14		$ 14	$ 70		$ 70	$ 204		$ 204		
Segment B	**$ 294**	**$ 265**	**$ 30**	**$ 48**	**$ 91**	**$ (43)**	**$ 173**	**$ 159**	**$ 15**	**$ 515**	**$ 514**	**$ 1**		
B to Portal	$ 46	$ 40	$ 5										2,330	2,298
Portal To BTC	$ 62	$ 90	$ (27)										1,050	1,343
East Main Station	$ 40	$ 41	$ (1)										500	380
Segment C	**$ 148**	**$ 171**	**$ (23)**	**$ 137**	**$ 94**	**$ 43**	**$ 94**	**$ 105**	**$ (11)**	**$ 379**	**$ 370**	**$ 9**		
Total	**$ 442**	**$ 435**	**$ 7**	**$ 185**	**$ 185**	**$ (1)**	**$ 267**	**$ 263**	**$ 4**	**$ 894**	**$ 884**	**$ 10**	**17,750**	**17,891**

Additional costs associated with freight in BNSF corridor

Turnouts, OCS, Systems $ 5.50

CAT	SUB POINT	DESCRIPTION	B7 shared rail				118th Av. Station			A2			
			Arup	ST	Delta (Arup-ST)	Explanation	Arup	ST	Delta (Arup ST)	Arup	SBSALA	DELTA (Arup-SBSALA)	Explanation
10	GUIDEWAY & TRACK ELEMENTS												
	10.01 Total	Guideway: At-grade exclusive right-of-way	$ 5.21	$ 4.84	$ 0.38		$ -	$ -	$ -	$ -	$ -	$ -	
	10.04 Total	Guideway: Aerial structure	$ 86.65	$ 115.49	$ (28.84)	Arup's Aerial structure incorporates changes in vertical alignment. Arup proposes mostly typical span (120') structure throughout the segment, ST proposes long spans	$ -	$ 4.00	$ (4.00)	$ 6.99	$ -	$ 6.99	Arup's A-2 station design has a central platform, hence a Twin-Sgl. Precast box girder included in the estimate. SBSALA has not included cost for the aerial structure in their estimate
	10.05 Total	Guideway: Built-up fill	$ -	$ -	$ -		$ -	$ -	$ -	$ -	$ -	$ -	
	10.06 Total	Guideway: Underground cut & cover	$ -	$ -	$ -		$ -	$ -	$ -	$ -	$ -	$ -	
	10.07 Total	Guideway: Underground tunnel	$ -	$ -	$ -		$ -	$ -	$ -	$ -	$ -	$ -	
	10.08 Total	Guideway: Retained cut or fill	$ 6.54	$ 2.70	$ 3.85	Arup's cost includes cut and fill quantities for the guideway and Cost for Retaining walls on the retained cut and fill	$ -	$ -	$ -	$ -	$ -	$ -	
	10.09 Total	Track: Direct fixation	$ 11.11	$ 11.57	$ (0.45)	Based on track length	$ -	$ 0.50	$ (0.50)	$ -	$ -	$ -	
	10.10 Total	Track: Embedded	$ 0.20	$ 0.16	$ 0.04		$ -	$ -	$ -	$ -	$ -	$ -	
	10.11 Total	Track: Ballasted	$ 3.33	$ 2.89	$ 0.44		$ -	$ -	$ -	$ -	$ -	$ -	
	10.12 Total	Track: Special (switches, turnouts)	$ 0.41	$ 0.41	$ -		$ -	$ -	$ -	$ -	$ -	$ -	
20	STATIONS, STOPS, TERMINALS, INTERMODAL												
	20.01 Total	At-grade station, stop, shelter, mall, terminal, platform	$ -	$ 0.96	$ (0.96)	ST has added this factor to consider unknowns for the Mercer slough structure. Arup has detailed the cost of Mercer slough structure. Also, contingency is added to consider the unknowns. Hence, this adder has not been included	$ -	$ 0.17	$ (0.17)	$ -	$ -	$ -	
	20.02 Total	Aerial station, stop, shelter, mall, terminal, platform	$ -	$ -	$ -		$ -	$ 21.80	$ (21.80)	$ 30.71	$ 42.97	$ (12.27)	Arup A2 does not include side-loaded platform adder ($10m),
	20.03 Total	Underground station, stop, shelter, mall, terminal, platform	$ -	$ -	$ -		$ -	$ -	$ -	$ -	$ -	$ -	
	20.04 Total	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	$ -	$ -	$ -		$ -	$ -	$ -	$ -	$ -	$ -	

CAT	SUB POINT	DESCRIPTION	B7 shared rail				118th Av. Station			A2			
			Arup	ST	Delta (Arup-ST)	Explanation	Arup	ST	Delta (Arup ST)	Arup	SBSALA	DELTA (Arup-SBSALA)	Explanation
	20.06 Total	Automobile parking multi-story structure	$ -	$ -	$ -		$ -	$ 30.11	$ (30.11)	$ 46.67	$ 40.24	$ 6.44	SBSALA has added excavation, shoring & venitlation as a LS cost, Arup has detailed the cut/fill costs in section 40.01. Arup's cost includes 50 additonal parking spaces, spread footings (instead of pile foundation) and transit center
	20.07 Total	Elevators, escalators	$ -	$ -	$ -		$ -	$ 1.60	$ (1.60)	$ 2.58	$ 0.85	$ 1.73	SBSALA has considered 1 escalator and 1 elevator; Arup's design includes 4 elevators for the garage, 2 escalators & 2 elevators in station. Arup has included pedestrian vertical circulation costs only in this section SBSALA included 'Roadway bridge' ($10.09m) and 'pedestrian bridge' ($.98m) in this section, Arup has included the same in cost sections 40.07 and 40.06 resp. to be consistent with ST
30	SUPPORT FACILITIES: YARDS, SHOPS, ADMIN BLDGS												
	30.03 Total	Heavy Maintenance Facility	$ -	$ -	$ -		$ -	$ -	$ -	$ -	$ -	$ -	
	30.05 Total	Yard and Yard Track	$ -	$ -	$ -		$ -	$ -	$ -	$ -	$ -	$ -	
40	SITEWORK AND SPECIAL CONDITIONS												
	40.01 Total	Demolition, Clearing, Earthwork	$ 1.14	$ 1.06	$ 0.08		$ -	$ 0.23	$ (0.23)	$ 8.11	$ 0.88	$ 7.23	Arup has included detailed excavation & fill costs, while SBSALA has included LS cost for earthwork in 20.06
	40.02 Total	Site Utilities, Utility Relocation	$ 5.42	$ 5.27	$ 0.15	Quantities extrapolated to suit Arup's B7 segment length	$ -	$ 0.06	$ (0.06)	$ 0.24	$ 0.71	$ (0.48)	Arup uses ST's categorical contingency which is higher than SBSALA's contingency. Also, Arup uses ST's unit cost for storm water piping, unlike SBSALA
	40.03 Total	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments	$ 2.80	$ 2.70	$ 0.11	Quantities extrapolated to suit Arup's B7 segment length		$ 0.09	$ (0.09)	$ -	$ -	$ -	
	40.04 Total	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	$ 1.61	$ 1.57	$ 0.04		$ -	$ 0.05	$ (0.05)	$ 1.23		$ 1.23	Arup's mitigation costs provided by Herrera Inc, Arup adds ST's categorical contingency over the base cost. SBSALA does not include mitigation costs in their estimate
	40.05 Total	Site structures including retaining walls, sound walls	$ 1.41	$ 4.10	$ (2.69)	Arup's Retaining walls for guideway included in 10.08	$ -	$ -	$ -	$ 0.89	$ 1.26	$ (0.37)	MSE Retaining walls considered by Arup are roadway retaining walls. Difference in retaining wall heights and quantities is design related difference

			B7 shared rail				118th Av. Station			A2			
CAT	SUB POINT	DESCRIPTION	Arup	ST	Delta (Arup-ST)	Explanation	Arup	ST	Delta (Arup ST)	Arup	SBSALA	DELTA (Arup-SBSALA)	Explanation
	40.06 Total	Pedestrian / bike access and accommodation, landscaping	$ 2.38	$ 2.31	$ 0.07	Arup quantities extrapolated for segment length	$ -	$ 1.93	$ (1.93)	$ 2.22	$ 0.98	$ 1.24	Arup has a longer pedestrian bridge than SBSALA Landscaping cost included in SF20 and ST20 costs
	40.07 Total	Automobile, bus, van accessways including roads, parking lots	$ 19.11	$ 17.30	$ 1.81	Arup quantities extrapolated for segment length	$ -	$ 1.58	$ (1.58)	$ 17.01	$ 17.43	$ (0.43)	Bus ramp designed by Arup, is not a part of SBSALA's design. Arup's Roadway reconstruction is more than that considered by SBSALA SBSALA's roadway bridge is larger than Arup's. Arup has more Roadway modifications than SBSALA
	40.08 Total	Temporary Facilities and other Indirect Costs During Construction	$ 2.00	$ 1.93	$ 0.07		$ -	$ 0.63	$ (0.63)	$ 1.18	$ -	$ 1.18	SBSALA has not included '1% for art' in their estimate; Arup follows ST by including the same for SCC points 10 through 50
50	SYSTEMS												
	50.01 Total	Train control and signals	$ 11.87	$ 11.94	$ (0.07)	Based on Arup's segment length	$ -	$ 0.25	$ (0.25)	$ -	$ -	$ -	
	50.02 Total	Traffic signals and crossing protection	$ -	$ -	$ -		$ -	$ -	$ -	$ 0.73	$ 0.49	$ 0.24	Arup has an additional half-signal
	50.03 Total	Traction power supply: substations	$ 3.95	$ 3.95	$ -		$ -	$ -	$ -	$ -	$ -	$ -	
	50.04 Total	Traction power distribution: catenary and third rail	$ 3.45	$ 3.35	$ 0.09	Based on track length	$ -	$ 0.09	$ (0.09)	$ -	$ -	$ -	
	50.05 Total	Communications	$ 5.70	$ 6.41	$ (0.70)	Based on Track length	$ -	$ 0.16	$ (0.16)	$ 0.86	$ 0.87	$ (0.01)	Arup uses ST's categorical contingency approach which is lower than SBSALA's contingency
	50.06 Total	Fare collection system and equipment	$ -	$ -	$ -		$ -	$ 0.36	$ (0.36)	$ 0.36	$ 0.36	$ (0.01)	Arup uses ST's categorical contingency approach which is lower than SBSALA's contingency
	50.07 Total	Central Control	$ -	$ -	$ -		$ -		$ -	$ -	$ -	$ -	

CAT	SUB POINT	DESCRIPTION	B7 shared rail				118th Av. Station			A2			
			Arup	ST	Delta (Arup-ST)	Explanation	Arup	ST	Delta (Arup ST)	Arup	SBSALA	DELTA (Arup-SBSALA)	Explanation
60	ROW, LAND, EXISTING IMPROVEMENTS												
	60.01 Total	Right of Way	$ 33.78	$ 63.46	$ (29.68)	Both ROW costs provided by ST and are in 2007 dollars	$ -	$ 27.52	$ (27.52)	$ 14.03		$ 14.03	SBSALA does not include ROW cost in their construction cost, Arup has included ROW cost in 2007 dollars as per ST
		Estimated cost of construction	**$ 208.09**	**$ 264.36**	**$ (56.27)**		**$ -**	**$ 91.13**	**$ (91.13)**	**$ 133.80**	**$ 107.04**	**$ 26.75**	SBSALA total does not include mitigation & ROW costs
70	VEHICLES												
	70.01	Light rail	$ -	$ -						$ -	$ -	$ -	
80	PROFESSIONAL SERVICES												
	80	Professional services	$ -	$ -						$ -	$ -	$ -	
90	UNALLOCATED CONTINGENCY												
	SEGMENT TOTAL WITH DES. ALLOW. & ALLOC. CONTINGENCY		**$ 208.09**	**$ 264.36**	**$ 56.27**			**$ 91.13**		**$ 133.80**	**$ 107.04**	$ 26.75	SBSALA total does not include mitigation & ROW costs
		Total Segment cost											
		Construction Cost without ROW Costs	$ 174.31	$ 200.90	$ 26.59			$ 63.61		$ 119.77		$ 119.77	
		Change order contingency (10%)	$ 17.43	$ 20.09	$ 2.66			$ 6.36		$ 11.98		$ 11.98	
		Total construction cost	**$ 191.74**	**$ 220.99**	**$ 29.25**			**$ 69.97**		**$ 131.75**	**$ 107.04**	$ 24.70	SBSALA total does not include Change order contingency
		ROW Costs	$ 33.78	$ 63.46	$ 29.68			$ 27.52		$ 14.03		$ 14.03	
		Construction management (8.5%)	$ 16.30	$ 18.78	$ 2.49			$ 5.95		$ 11.20	$ 9.10	$ 2.10	
		Environmental/PE (5%)	$ 9.59	$ 11.05	$ 1.46			$ 3.50		$ 6.59	$ 5.35	$ 1.24	
		Final Design, Specs, Permits (12.5%)	$ 23.97	$ 27.62	$ 3.66			$ 8.75		$ 16.47	$ 13.38	$ 3.09	
		Agency Administration (6%)	$ 16.52	$ 20.51	$ 3.99			$ 6.94		$ 10.80	$ 1.67	$ 9.13	SBSALA total does not apply Agency administration fee to
		Total soft costs	$ 66.37	$ 77.97	$ 11.60			$ 25.13		$ 45.06	$ 29.50	$ 15.55	
		Unallocated Contingency(10%)	$ 19.17	$ 22.10	$ 2.92			$ 7.00		$ 13.17	$ 10.70	$ 2.47	SBSALA has included as Construction contingencies (10% of estimated construction cost)
		SBSALA ROW									$ 13.20	$ (13.20)	SBSALA ROW in 4th Qtr 2010 $
		SBSALA total environmental mitigation (by Esa Adolfson)									$ 4.56	$ (4.56)	
		Total Cost- Low (without Project Reserve)	**$ 311.07**	**$ 384.52**	$ 73.45			**$ 129.62**		**$ 204.01**	**$ 165.01**	$ 38.99	
		Total Cost - High (with Project Reserve) (115%)	$ 357.73	$ 442.20	$ 84.47	115%		$ 149.06		$ 234.61		$ 234.61	115%

Notes:

Explaination' provides reasoning to the delta between Arup A-2 and 'SBSALA Adjusted A-2
There were some calculation errors in SBSALA A2 pdf, which were calculated and checked in excel
Arup's ROW costs are in current dollars and were provided by Roland Inc. ST's costs are in 2007 dollars

Change order contingency	10%
Construction management	8.5%
Environmental/PE	5%
Final Design, Specs, Permits	12.5%
Agency Administration	6%
Unallocated Contingency	10%

CAT	SUB POINT	DESCRIPTION	B TO PORTAL				PORTAL TO BTC				East Main Station				Arup End of B TO Bellevue	ST End of B TO Bellevue Transit	Delta	Explanation
			Arup	ST	DELTA (Arup-ST)	Explanation	Arup (Tunnel length 1050RF)	ST(Tunnel length 1343RF)	DELTA (Arup-ST)	Explanation	Arup	ST	DELTA (Arup-ST)	Explaination				
10	GUIDEWAY & TRACK ELEMENTS																	
	10.01 Total	Guideway: At-grade exclusive right-of-way	$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -	
	10.04 Total	Guideway: Aerial structure	$ 5.99	$ 16.58	$ (10.59)	Arup's segment from B to Portal is mostly at grade	$ -	$ -	$ -		$ -	$ 3.29	$ (3.29)	ST has an aerial East Main station	$ 5.99	$ 19.87	$ (13.88)	
	10.05 Total	Guideway: Built-up fill	$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -	
	10.06 Total	Guideway: Underground cut & cover	$ -	$ -	$ -		$ 47.38	$ 71.69	$ (24.31)	ST has deeper 'cut and cover boxes' than Arup. Also, ST's tunnel is longer	$ -	$ -	$ -		$ 47.38	$ 71.69	$ (24.31)	
	10.07 Total	Guideway: Underground tunnel	$ -	$ -	$ -		$ 3.59	$ 3.74	$ (0.15)	Arup has included tunnel elements as per the tunnel length	$ -	$ -	$ -		$ 3.59	$ 3.74	$ (0.15)	
	10.08 Total	Guideway: Retained cut or fill	$ 10.54	$ 3.32	$ 7.21	Arup's cost includes cut & fill for the segment and for Sturtevant creek, ST's cut and fill for Sturvenant creek is included in section 40.02; Arup's cost includes retaining walls in this part of the segment	$ -	$ -	$ -		$ 2.15	$ -	$ 2.15	Arup's station is in a trench	$ 12.69	$ 3.32	$ 9.36	
	10.09 Total	Track: Direct fixation	$ 3.07	$ 3.02	$ 0.04	Track length change	$ 1.38	$ 1.77	$ (0.39)	Based on tunnel length	$ 0.66	$ 0.50	$ 0.16	Track length	$ 5.11	$ 5.29	$ (0.19)	
	10.10 Total	Track: Embedded	$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -	
	10.11 Total	Track: Ballasted	$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -	
	10.12 Total	Track: Special (switches, turnouts)	$ 0.83	$ 0.83	$ -		$ -	$ -	$ -		$ -	$ -	$ -		$ 0.83	$ 0.83	$ -	
20	STATIONS, STOPS, TERMINALS, INTERMODAL																	
	20.01 Total	At-grade station, stop, shelter, mall, terminal, platform	$ -	$ -	$ -		$ -	$ -	$ -		$ 0.29	$ 0.29	$ -		$ 0.29	$ 0.29	$ -	
	20.02 Total	Aerial station, stop, shelter, mall, terminal, platform	$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ 31.74	$ (31.74)	ST has aerial EM station	$ -	$ 31.74	$ (31.74)	
	20.03 Total	Underground station, stop, shelter, mall, terminal, platform	$ -	$ -	$ -		$ -	$ -	$ -		$ 28.80	$ -	$ 28.80	Arup has station located in a retained cut site	$ 28.80	$ -	$ 28.80	
	20.04 Total	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -	

CAT	SUB POINT	DESCRIPTION	B TO PORTAL				PORTAL TO BTC				East Main Station				Arup End of B TO Bellevue	ST End of B TO Bellevue Transit	Delta	Explanation
			Arup	ST	DELTA (Arup-ST)	Explanation	Arup (Tunnel length 1050RF)	ST(Tunnel length 1343RF)	DELTA (Arup-ST)	Explanation	Arup	ST	DELTA (Arup-ST)	Explaination				
	20.06 Total	Automobile parking multi-story structure	$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -	
	20.07 Total	Elevators, escalators	$ -	$ -	$ -		$ -	$ -	$ -		$ 1.13	$ 1.16	$ (0.03)		$ 1.13	$ 1.16	$ (0.03)	
30	SUPPORT FACILITIES: YARDS, SHOPS, ADMIN BLDGS																	
	30.03 Total	Heavy Maintenance Facility	$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -					
	30.05 Total	Yard and Yard Track	$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -					
40	SITEWORK AND SPECIAL CONDITIONS																	
	40.01 Total	Demolition, Clearing, Earthwork	$ 5.92	$ 0.33	$ 5.59	Arup's demo cost includes Sheraton (taking into account size of the building)	$ 0.45	$ 0.53	$ (0.07)		$ 3.14	$ 0.38	$ 2.76	Demo includes Red Lions site; if ST includes demo of the same, their estimate seems low for the size of the building	$ 9.51	$ 1.23	$ 8.28	
	40.02 Total	Site Utilities, Utility Relocation	$ 6.10	$ 6.35	$ (0.25)	Costs from ST are lump summed and extrapolated, to suit the segment length	$ 5.59	$ 7.13	$ (1.54)	ST's LS cost used and Extrapolation factor	$ 0.57	$ 0.43	$ 0.13	Place-keeper: Extrapolation factor based on tunnel length applied to LS cost from ST's estimate	$ 12.26	$ 13.92	$ (1.66)	
	40.03 Total	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments	$ 0.09	$ 0.11	$ (0.02)	ST's LS allowance extrapolated	$ -	$ -	$ -		$ 0.03	$ 0.03	$ 0.01		$ 0.12	$ 0.13	$ (0.01)	
	40.04 Total	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	$ 1.24	$ 0.08	$ 1.16	Arup's mitigation cost for Creek was provided by Herrera Inc; includes only wetland mitigation. Also, cost for buffer zone is calculated	$ -	$ -	$ -		$ 0.03	$ 0.02	$ 0.01		$ 1.27	$ 0.10	$ 1.17	
	40.05 Total	Site structures including retaining walls, sound walls	$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -	

CAT	SUB POINT	DESCRIPTION	B TO PORTAL				PORTAL TO BTC				East Main Station				Arup End of B TO Bellevue	ST End of B TO Bellevue Transit	Delta	Explanation
			Arup	ST	DELTA (Arup-ST)	Explanation	Arup (Tunnel length 1050RF)	ST(Tunnel length 1343RF)	DELTA (Arup-ST)	Explanation	Arup	ST	DELTA (Arup-ST)	Explaination				
	40.06 Total	Pedestrian / bike access and ~~accommodation, landscaping~~	$ 0.17	$ 0.17	$ (0.00)		$ 0.02	$ 0.02	$ (0.00)		$ 1.16	$ 0.76	$ 0.39	Arup's station design cost has been included based on drawings	$ 1.34	$ 0.95	$ 0.39	
	40.07 Total	Automobile, bus, van accessways including roads, parking lots	$ 4.38	$ 1.47	$ 2.90	Includes cost of Main Street bridge and culvert at Sturtevant creek	$ 2.11	$ 2.30	$ (0.19)		$ -	$ -	$ -		$ 6.49	$ 3.78	$ 2.71	
	40.08 Total	Temporary Facilities and other Indirect Costs During Construction	$ 0.45	$ 0.38	$ 0.06		$ 0.10	$ 0.13	$ (0.03)		$ 0.38	$ 0.40	$ (0.02)		$ 0.93	$ 0.92	$ 0.02	
50	SYSTEMS																	
	50.01 Total	Train control and signals	$ 4.14	$ 4.12	$ 0.02		$ 0.70	$ 0.90	$ (0.20)	Track length different	$ 0.33	$ 0.25	$ 0.08		$ 5.18	$ 5.27	$ (0.09)	
	50.02 Total	Traffic signals and crossing protection	$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -	
	50.03 Total	Traction power supply: substations	$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -	
	50.04 Total	Traction power distribution: catenary and third rail	$ 0.58	$ 1.30	$ (0.72)		$ 0.26	$ 0.76	$ (0.50)	Track length different	$ 0.12	$ 0.22	$ (0.09)		$ 0.96	$ 2.28	$ (1.32)	
	50.05 Total	Communications	$ 0.96	$ 0.95	$ 0.01		$ 0.43	$ 0.55	$ (0.12)	Track length different	$ 1.07	$ 1.02	$ 0.05		$ 2.46	$ 2.51	$ (0.06)	
	50.06 Total	Fare collection system and equipment	$ -	$ -	$ -		$ -	$ -	$ -		$ 0.36	$ 0.36	$ -		$ 0.36	$ 0.36	$ -	
	50.07 Total	Central Control	$ 1.38	$ 1.38	$ -		$ -	$ -	$ -		$ -	$ -	$ -		$ 1.38	$ 1.38	$ -	

CAT	SUB POINT	DESCRIPTION	B TO PORTAL Arup	B TO PORTAL ST	B TO PORTAL DELTA (Arup-ST)	B TO PORTAL Explanation	PORTAL TO BTC Arup (Tunnel length 1050RF)	PORTAL TO BTC ST(Tunnel length 1343RF)	PORTAL TO BTC DELTA (Arup-ST)	PORTAL TO BTC Explanation	East Main Station Arup	East Main Station ST	East Main Station DELTA (Arup-ST)	East Main Station Explaination	Arup End of B TO Bellevue	ST End of B TO Bellevue Transit	Delta	Explanation
60	ROW, LAND, EXISTING IMPROVEMENTS																	
	60.01 Total	Right of Way	$ -	$ -	$ -		$ -	$ -	$ -		$ -	$ -	$ -		$ 136.90	$ 94.36	$ 42.54	
		Estimated cost of construction	**$ 45.82**	**$ 40.39**	**$ 5.43**		**$ 62.03**	**$ 89.53**	**$ (27.50)**	ST's cost does not include ROW costs	**$ 40.21**	**$ 40.84**	**$ (0.63)**		**$ 284.97**	**$ 265.12**	**$ 19.84**	Includes ROW
70	VEHICLES																	
	70.01	Light rail	$ -	$ -			$ -	$ -			$ -	$ -						
80	PROFESSIONAL SERVICES																	
	80	Professional services	$ -	$ -			$ -	$ -			$ -	$ -						
90	UNALLOCATED CONTINGENCY																	
		SEGMENT TOTAL WITH DES. ALLOW. & ALLOC. CONTINGENCY	**$ 45.82**	**$ 40.39**	**$ 5.43**		**$ 62.03**				**$ 40.21**	**$ 40.84**	**$ (0.63)**		**$ 284.97**	**$ 265.12**		
		Total Segment cost																
		Construction Cost without ROW Costs	$ 45.82	$ 40.39	$ 5.43		$ 62.03				$ 40.21				$ 148.07	$ 170.76	$ (22.70)	
		Change order contingency (10%)													$ 14.81	$ 17.08		
		Total construction cost													**$ 162.87**	**$ 187.84**		
		ROW Costs													$ 136.90	$ 94.36		
		Construction management (8.5%)													$ 13.84	$ 15.97		
		Environmental/PE (5%)													$ 8.14	$ 9.39		
		Final Design, Specs, Permits (12.5%)													$ 20.36	$ 23.48		
		Agency Administration (6%)													$ 20.53	$ 19.86		
		Total soft costs													$ 62.87	$ 68.70		
		Unallocated Contingency(10%)													$ 16.29	$ 18.78		
		SBSALA ROW																
		SBSALA total environmental mitigation (by Esa Adolfson)																
		Total Cost- Low (without Project Reserve)													**$ 378.93**	**$ 369.68**	**$ 9.25**	
		Total Cost - High (with Project Reserve) (115%)													$ 435.77	$ 425.14		

Segment B

Alternate B7

ARUP

ARUP

Length (RF)= 13,870

Additional line items not included in Sound Transit Estimate

Extrapolation factor= 1.03

ARUP-REVISED B7 = Arup B7+Arup A2+Arup C9T

Length=13870 RF **Length=12324 RF**

SCCRU	SCCPoint	Code	Desc	UOM	Composite unit cost (2007)	B7 Quantity	Base Cost B7	Design Allowance (%)	Pre-Award Total B7	Allocated Contingency (%)	Subtotal Contingency B7	Total B7	ST B7	Delta (Arup-ST)
10	10.01	AG02	At-Grade Dbl Ballasted Track	RF	$ 657	4,975	$ 3,268,575	20%	$ 3,922,290	15%	$ 588,344	$ 4,510,634		
10	10.01	AG11	At-Grade Dbl Track in Roadway - Embedded, Exclusive	RF	$ 1,030	125	$ 128,750	20%	$ 154,500	15%	$ 23,175	$ 177,675		
10	10.01	AG20	At-Grade Dbl Track on Exist. Structure - Direct Fixation	RF	$ 953	400	$ 381,200	20%	$ 457,440	15%	$ 68,616	$ 526,056		
	10.01 Total		Guideway: At-grade exclusive right-of-way				$ 3,778,525		$ 4,534,230		$ 680,135	$ 5,214,365	$ 4,838,832	$ 375,533
10	10.04	EL10	Gantry	LS	$ 7,000,000	1	$ 7,000,000	30%	$ 9,100,000	20%	$ 1,820,000	$ 10,920,000		
10	10.04	EL22	Precast Segmental Box Girder (Avg. Pier 20' Ht.)	RF	$ 5,900	375	$ 2,212,500	20%	$ 2,655,000	15%	$ 398,250	$ 3,053,250		
10	10.04	EL23	Precast Segmental Box Girder (Avg. Pier 30' Ht.)	RF	$ 6,000	520	$ 3,120,000	20%	$ 3,744,000	15%	$ 561,600	$ 4,305,600		
10	10.04	EL24	Precast Segmental Box Girder (Avg. Pier 40' Ht.)	RF	$ 6,150	1,095	$ 6,734,250	20%	$ 8,081,100	15%	$ 1,212,165	$ 9,293,265		
10	10.04	EL24a	Straddle Bent (Avg Ht + 40')	EA	$ 397,300	1	$ 397,300	20%	$ 476,760	15%	$ 71,514	$ 548,274		
10	10.04	EL25	Precast Segmental Box Girder (Avg. Pier 50' Ht.)	RF	$ 6,270	2,130	$ 13,355,100	20%	$ 16,026,120	15%	$ 2,403,918	$ 18,430,038		
10	10.04	EL26	Precast Segmental Box Girder (Avg. Pier 60' Ht.)	RF	$ 6,400	800	$ 5,120,000	20%	$ 6,144,000	15%	$ 921,600	$ 7,065,600		
10	10.04		Precast Segmental Box Girder (Avg. Pier 70' Ht.) for A-2 station	RF	$ 10,867		$ -	20%	$ -	15%	$ -	$ -		
10	10.04	EL34	Twin-Sgl. Precast Segmental Box Girder (Avg. Pier 50' Ht.)	RF	$ 9,525	820	$ 7,810,500	20%	$ 9,372,600	15%	$ 1,405,890	$ 10,778,490		
10	10.04	EL66	Guideway for Mercer Slough superstructure	RF	$ 5,040	1,500	$ 7,560,000	30%	$ 9,828,000	15%	$ 1,474,200	$ 11,302,200		
10	10.04	EL68	Guideway for Mercer Slough substructure (Bent cap, columns, pile cap, piles), avg ht 40'	EA	$ 541,360	2	$ 812,041	30%	$ 1,055,653	15%	$ 158,348	$ 1,214,001		
10	10.04	EL68	Guideway for Mercer Slough substructure (Bent cap, columns, pile cap, piles), avg ht 50'	EA	$ 560,210	3	$ 1,517,235	30%	$ 1,972,406	15%	$ 295,861	$ 2,268,267		
10	10.04	EL68	Guideway for Mercer Slough substructure (Bent cap, columns, pile cap, piles), avg ht 60'	EA	$ 579,060	2	$ 1,206,374	30%	$ 1,568,286	15%	$ 235,243	$ 1,803,529		
10	10.04	EL68	Guideway for Mercer Slough substructure (Bent cap, columns, pile cap, piles), avg ht 70'	EA	$ 597,909	2	$ 1,220,731	30%	$ 1,586,950	15%	$ 238,043	$ 1,824,993		
10	10.04	EL68	Guideway for Mercer Slough substructure (Bent cap, columns, pile cap, piles), avg ht 80'	EA	$ 616,759	4	$ 2,569,828	30%	$ 3,340,776	15%	$ 501,116	$ 3,841,893		
	10.04 Total		Guideway: Aerial structure				$ 60,635,859		$ 74,951,652		$ 11,697,748	$ 86,649,400	$ 115,487,519	$ (28,838,119)
	10.05 Total		Guideway: Built-up fill						$ -		$ -	$ -		$ -
	10.06 Total		Guideway: Underground cut & cover						$ -		$ -	$ -		$ -
	10.07 Total		Guideway: Underground tunnel				$ -		$ -		$ -	$ -	$ -	$ -
10	10.08	RF21	Retained Fill - Two Sides (Avg. 10' Height)	RF	$ 3,140		$ -	20%	$ -	15%	$ -	$ -		
10	10.08	RW15	Retaining Wall - CIP (Avg 10') one side	RF	$ 757	4,366	$ 3,305,686	20%	$ 3,966,823	10%	$ 396,682	$ 4,363,505		
10	10.08		Retaining Wall - CIP (Avg 15') one side	RF	$ 945	800	$ 756,000	20%	$ 907,200	10%	$ 90,720	$ 997,920		
10	10.08	RF30	Fill	CY	$ 25	25,509	$ 637,737	20%	$ 765,285	15%	$ 114,793	$ 880,078		
10	10.08	RF34	Excavation	CY	$ 32	6,859	$ 219,493	20%	$ 263,391	15%	$ 39,509	$ 302,900		
	10.08 Total		Guideway: Retained cut or fill				$ 4,918,916		$ 5,902,699		$ 641,704	$ 6,544,403	$ 2,697,107	$ 3,847,296
10	10.09	TK21	Direct Fixation - Double Track	RF	$ 997	8,445	$ 8,419,665	20%	$ 10,103,598	10%	$ 1,010,360	$ 11,113,958		
	10.09 Total		Track: Direct fixation				$ 8,419,665		$ 10,103,598		$ 1,010,360	$ 11,113,958	$ 11,567,992	$ (454,034)
10	10.10	TK11	Embedded - Double Track	RF	$ 1,210	125	$ 151,250	20%	$ 181,500	10%	$ 18,150	$ 199,650		
	10.10 Total		Track: Embedded				$ 151,250		$ 181,500		$ 18,150	$ 199,650	$ 159,720	$ 39,930

Segment B

Alternate B7

ARUP

ARUP

Length (RF)= 13,870

Additional line items not included in Sound Transit Estimate

Extrapolation factor= 1.03

ARUP-REVISED B7 = Arup B7+Arup A2+Arup C9T

Length=13870 RF **Length=12324 RF**

SCCRU	SCCPoint	Code	Desc	UOM	Composite unit cost (2007)	B7 Quantity	Base Cost B7	Design Allowance (%)	Pre-Award Total B7	Allocated Contingency (%)	Subtotal Contingency B7	Total B7	ST B7	Delta (Arup-ST)
10	10.11	TK02	Ballasted - Double Track	RF	$ 476	5,300	$ 2,522,800	20%	$ 3,027,360	10%	$ 302,736	$ 3,330,096		
10.11 Total			Track: Ballasted				$ 2,522,800		$ 3,027,360		$ 302,736	$ 3,330,096	$ 2,890,272	$ 439,824
10	10.12	SP18B	Direct Fixation - Single Cross-over	EA	$ 314,000	1	$ 314,000	20%	$ 376,800	10%	$ 37,680	$ 414,480		
10.12 Total			Track: Special (switches, turnouts)				$ 314,000		$ 376,800		$ 37,680	$ 414,480	$ 414,480	$ -
20	20.01	ST18	At-Grd Foundation Adder @ Mercer Slough	LS	$ 640,000		$ -	25%	$ -	20%	$ -	$ -		
20.01 Total			At-grade station, stop, shelter, mall, terminal, platform				$ -		$ -		$ -	$ -	$ 960,000	$ (960,000)
20.02 Total			Aerial station, stop, shelter, mall, terminal, platform				$ -		$ -		$ -	$ -	$ -	
20.03 Total			Underground station, stop, shelter, mall, terminal, platform				$ -		$ -		$ -	$ -	$ -	
20.04 Total			Other stations, landings, terminals: Intermodal, ferry, trolley, etc.				$ -		$ -		$ -	$ -	$ -	
20.06 Total			Automobile parking multi-story structure				$ -		$ -		$ -	$ -	$ -	
20.07 Total			Elevators, escalators				$ -		$ -		$ -	$ -	$ -	
30.03 Total			Heavy Maintenance Facility						$ -		$ -	$ -	$ -	
30.05 Total			Yard and Yard Track				$ -		$ -		$ -	$ -	$ -	
40	40.01	DM05	Demolition Allow. - Existing Building, Moderate	EA	$ 48,330	1	$ 48,330	25%	$ 60,413	25%	$ 15,103	$ 75,516		
40	40.01	DM06	Demolition Allow. - Existing Building	SF	$ 10	63,227	$ 632,270	25%	$ 790,338	25%	$ 197,584	$ 987,922		
40	40.01		Demolition Allow. - Existing bridge	SF	$ 20	2,400	$ 48,000	25%	$ 60,000	25%	$ 15,000	$ 75,000		
40.01 Total			Demolition, Clearing, Earthwork				$ 728,600		$ 910,750		$ 227,688	$ 1,138,438	$ 1,063,438	$ 75,000
40	40.02	UM01	Utility Modifications Allow. - Level 1	RF	$ 187	100	$ 18,634	25%	$ 23,292	20%	$ 4,658	$ 27,951		
40	40.02	UM11B	Storm Water Piping - 18" CPE Pipe (Buried)	LF	$ 200	6,409	$ 1,281,836	25%	$ 1,602,295	20%	$ 320,459	$ 1,922,754		
40	40.02	UM12B	Storm Water Detention Vault (0.6<Med<1.4)	AC-FT	$ 749,000	1	$ 770,099	25%	$ 962,623	20%	$ 192,525	$ 1,155,148		
40	40.02	UM13C	Storm Water Quality Vault (Large>1.4)	AC-FT	$ 687,000	2	$ 1,094,846	25%	$ 1,368,557	20%	$ 273,711	$ 1,642,269		
40	40.02	UM50	Raise 115kV OH power line crossing (assume no U/G)	EA	$ 434,000	1	$ 446,225	25%	$ 557,782	20%	$ 111,556	$ 669,338		
40.02 Total			Site Utilities, Utility Relocation				$ 3,611,640		$ 4,514,550		$ 902,910	$ 5,417,460	$ 5,269,036	$ 148,424
40	40.03	HM01	Hazardous Material Removal Allowance	RF	$ 181	5,139	$ 930,119	25%	$ 1,162,648	50%	$ 581,324	$ 1,743,972		
40	40.03	HM06	Hazardous Material Removal Allowance	LS	$ 550,000	1	$ 565,493	25%	$ 706,866	50%	$ 353,433	$ 1,060,299		
40.03 Total			Haz. mat'l, contam'd soil removal/mitigation, ground water treatments				$ 1,495,612		$ 1,869,514		$ 934,757	$ 2,804,272	$ 2,695,645	$ 108,627
40	40.04	EM01	Environmental Mitigation Allow. - Level 1	RF	$ 63	1,570	$ 98,937	25%	$ 123,671	20%	$ 24,734	$ 148,406		
40	40.04	EM03	Environmental Mitigation Allow. - Level 3	RF	$ 249	3,753	$ 934,420	25%	$ 1,168,025	20%	$ 233,605	$ 1,401,630		
40	40.04	EM10	Residential Noise Mitigation Allow.	RF	$ 150	265	$ 39,759	25%	$ 49,699	20%	$ 9,940	$ 59,639		
40.04 Total			Environmental mitigation, e.g. wetlands, historic/archeologic, parks				$ 1,073,116		$ 1,341,396		$ 268,279	$ 1,609,675	$ 1,565,574	$ 44,101
40	40.05	SW01	Sound Wall	RF	$ 521	2,056	$ 1,071,352	20%	$ 1,285,623	10%	$ 128,562	$ 1,414,185		
40.05 Total			Site structures including retaining walls, sound walls				$ 24,306,951		$ 29,513,789		$ 4,472,826	$ 1,414,185	$ 4,101,900	$ (2,687,715)
40	40.06	SF02F	Construct / Replace 12' Bike Path, ACP	LF	$ 92	11,894	$ 1,094,293	20%	$ 1,313,151	10%	$ 131,315	$ 1,444,466		
40	40.06	LS02	Landscaping Allow. - Site	SF	$ 3	97,056	$ 291,167	20%	$ 349,401	10%	$ 34,940	$ 384,341		
40	40.06	LS10	Landscaping Allow. - Guideway	RF	$ 87	4,790	$ 416,751	20%	$ 500,101	10%	$ 50,010	$ 550,111		
40.06 Total			Pedestrian / bike access and accommodation, landscaping				$ 1,802,211		$ 2,162,653		$ 216,265	$ 2,378,918	$ 2,313,742	$ 65,176

Segment B

Alternate B7

ARUP

ARUP

Length (RF)= 13,870

Additional line items not included in Sound Transit Estimate

Extrapolation factor= 1.03

ARUP-REVISED B7 = Arup B7+Arup A2+Arup C9T

Length=13870 RF **Length=12324 RF**

SCCRU	SCCPoint	Code	Desc	UOM	Composite unit cost (2007)	B7 Quantity	Base Cost B7	Design Allowance (%)	Pre-Award Total B7	Allocated Contingency (%)	Subtotal Contingency B7	Total B7	ST B7	Delta (Arup-ST)
40	40.07	RM41	Roadway Reconstruction Allow. - Single Precast Concrete Barrier	LF	$ 79	1,234	$ 97,470	20%	$ 116,965	15%	$ 17,545	$ 134,509		
40	40.07		Roadway Bridge	SF	$ 400	2,400	$ 960,000	20%	$ 1,152,000	15%	$ 172,800	$ 1,324,800		
40	40.07	RM_hov	Roadway Reconstruction Allow.	LS	$ 9,134,000	1	$ 9,391,296	20%	$ 11,269,555	20%	$ 2,253,911	$ 13,523,466		
40	40.07	SS01	Streetscaping Allow. - Light	RF	$ 197	1,893	$ 372,977	20%	$ 447,573	15%	$ 67,136	$ 514,709		
40	40.07	SS02	Streetscaping Allow. - Moderate	RF	$ 423	4,783	$ 2,023,225	20%	$ 2,427,870	15%	$ 364,181	$ 2,792,051		
40	40.07	SS03	Streetscaping Allow. - Heavy	RF	$ 656	909	$ 596,133	20%	$ 715,360	15%	$ 107,304	$ 822,664		
40.07 Total			Automobile, bus, van accessways including roads, parking lots				$ 13,441,102		$ 16,129,322		$ 2,982,876	$ 19,112,199	$ 17,300,073	$ 1,812,126
40	40.08	AR01	1% for Art (1% of Category 10 thru 50, excluding 10.0	LS	1%	1	$ 1,452,890.56	20%	$ 1,743,469	15%	$ 261,520	$ 2,004,989		
40.08 Total			Temporary Facilities and other Indirect Costs During Construction				$ 1,452,891		$ 1,743,469		$ 261,520	$ 2,004,989	$ 1,932,371	$ 72,618
50	50.01	TC02	Train Control - Double Track	RF	$ 485	13,870	$ 6,726,950	20%	$ 8,072,340	15%	$ 1,210,851	$ 9,283,191		
50	50.01	TC15	Train Control, Double Crossover	EA	$ 1,170,000		$ -	20%	$ -	15%	$ -	$ -		
50	50.01	TC20	Train Control, Single Crossover	EA	$ 936,000	2	$ 1,872,000	20%	$ 2,246,400	15%	$ 336,960	$ 2,583,360		
50	50.01	TC25	Train Control turnout	EA	$ 851,000		$ -	20%	$ -	15%	$ -	$ -		
50.01 Total			Train control and signals				$ 8,598,950		$ 10,318,740		$ 1,547,811	$ 11,866,551	$ 11,935,137	$ (68,586)
50.02 Total			Traffic signals and crossing protection										$ -	$ -
50	50.03	TP03	Traction Power, Substation	EA	$ 1,430,000	2	$ 2,860,000	20%	$ 3,432,000	15%	$ 514,800	$ 3,946,800		
50.03 Total			Traction power supply: substations				$ 2,860,000		$ 3,432,000		$ 514,800	$ 3,946,800	$ 3,946,800	$ -
50	50.04	TP02	OCS System - Standard, Double Track	RF	$ 180	13,870	$ 2,496,600	20%	$ 2,995,920	15%	$ 449,388	$ 3,445,308		
50	50.04		OCS System- BNSF corridor	RF	$ 180		$ -	20%	$ -	15%	$ -	$ -		
50.04 Total			Traction power distribution: catenary and third rail				$ 2,496,600		$ 2,995,920		$ 449,388	$ 3,445,308	$ 3,350,916	$ 94,392
50	50.05	CM02	Communication, Line - Double TRACK	RF	$ 274	13,870	$ 3,800,380	20%	$ 4,560,456	15%	$ 684,068	$ 5,244,524		
50	50.05		Communication, Line - Double TRACK-BNSF	RF	$ 274		$ -	20%	$ -	15%	$ -	$ -		
50	50.05	CM05	Communication, Station	EA	$ 624,000		$ -	20%	$ -	15%	$ -	$ -		
50	50.05	CM20	Passenger Information System, Fiber Optic	LF	$ 24	13,870	$ 332,880	20%	$ 399,456	15%	$ 59,918	$ 459,374		
50	50.05		Passenger Information System, Fiber Optic-BNSF	RF	$ 24	-	$ -	20%	$ -	15%	$ -	$ -		
50.05 Total			Communications				$ 4,133,260		$ 4,959,912		$ 743,987	$ 5,703,899	$ 6,408,748	$ (704,849)
50.06 Total			Fare collection system and equipment				$ -		$ -		$ -	$ -	$ -	$ -
60	60.01	ROW	Right of Way	LS	$ 24,128,571		$ -	0%	$ -	40%	$ -	$ -		
60.01 Total			Right of Way				$ -		$ -		$ -	$ -	$ -	$ -
Grand Total								**$**	**164,855,771**	**$**	**25,739,487**	***$ 174,309,043***	**$ 200,899,300**	**$ (26,590,257)**

Cost of additional elements for future freight **$ 5,502,301**

Notes:

10.04- Pile driving Gantry crane used for construction instead of Temporary work platform

10.04- Mercer Slough guideway superstructure unit cost has been derived from ST's superstructure cost from the Unit cost report

Segment B

Alternate B7

ARUP

ARUP

Additional line items not included in Sound Transit Estimate

Added according to ST C9T- need more info for our quantification

Length (RF)= 4,500

ARUP-REVISED B7 = Arup B7+Arup A2+Arup C9T

Extrapolation factor 0.51

	0.98		1.09		
	B TO PORTAL				
	B TO EM		**EM TO PORTAL**		
	Begin	2138+70.00	Begin	2158+75.00	
	End	2153+75.00	End	2167+00.00	
	RF	1,505	RF	825	2,330

SCCRU	SCCPoint	Code	Desc	UOM	Composite unit cost (2007)	Qty	Subtotal	Qty	Subtotal	Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total	ST	Delta (Arup-ST)
10.01 Total			Guideway: At-grade exclusive right-of-way		$ -						$ -		$ -		$ -	$ -		
10	10.04	EL22	Precast Segmental Box Girder (Avg. Pier 20' Ht.)	RF	$ 5,900	400	2,360,000			400	$ 2,360,000	20%	$ 2,832,000	15%	$ 424,800	$ 3,256,800		
10	10.04	EL23	Precast Segmental Box Girder (Avg. Pier 30' Ht.)	RF	$ 6,000	330	1,980,000			330	$ 1,980,000	20%	$ 2,376,000	15%	$ 356,400	$ 2,732,400		
10.04 Total			Guideway: Aerial structure		$ -		$ 4,340,000		$ -		$ 4,340,000		$ 5,208,000		$ 781,200	$ 5,989,200	$ 16,577,885	$ (10,588,685)
10.05 Total			Guideway: Built-up fill		$ -								$ -		$ -	$ -	$ -	$ -
10.06 Total			Guideway: Underground cut & cover		$ -		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
10.07 Total			Guideway: Underground tunnel		$ -		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
10	10.08	RF30	Fill	CY	$ 25	5,200	130,002	122	3,046	5,322	$ 133,048	20%	$ 159,658	15%	$ 23,949	$ 183,606		
10	10.08	RF34	Excavation	CY	$ 32	1,065	34,069	42719	1,366,995	43,783	$ 1,401,064	20%	$ 1,681,277	15%	$ 252,192	$ 1,933,469		
10	10.08	RW15	Retaining Wall - CIP (Avg 10')	LF	$ 757	1,000	757,143			1,000	$ 757,143	20%	$ 908,571	10%	$ 90,857	$ 999,429		
10	10.08	RW14	Retaining Wall - CIP,15' avg height one side	LF	$ 945	1,550	1,464,750			1,550	$ 1,464,750	20%	$ 1,757,700	10%	$ 175,770	$ 1,933,470		
10	10.08	RW16	Retaining Wall - CIP, 40' avg height one side	LF	$ 2,520			1,650	4,158,000	1,650	$ 4,158,000	20%	$ 4,989,600	10%	$ 498,960	$ 5,488,560		
10.08 Total			Guideway: cut or fill		$ -		$ 2,385,964		$ 5,528,042		$ 7,914,005		$ 9,496,806		$ 1,041,727	$ 10,538,534	$ 3,323,640	$ 7,214,894
10	10.09	TK21	Direct Fixation - Double Track	RF	$ 997	1,505	1,500,485	825	822,525	2,330	$ 2,323,010	20%	$ 2,787,612	10%	$ 278,761	$ 3,066,373		
10.09 Total			Track: Direct fixation		$ -		$ 1,500,485		$ 822,525		$ 2,323,010		$ 2,787,612		$ 278,761	$ 3,066,373	$ 3,024,260	$ 42,113
10.10 Total			Track: Embedded		$ -		$ -		$ -		$ -		$ -		$ -	$ -	$ -	
10.11 Total			Track: Ballasted		$ -		$ -		$ -		$ -		$ -		$ -	$ -	$ -	
10	10.12	SP18B	Direct Fixation - Single Cross-over	EA	$ 314,000	2	628,000			2	$ 628,000	20%	$ 753,600	10%	$ 75,360	$ 828,960		
10.12 Total			Track: Special (switches, turnouts)		$ -		$ 628,000		$ -		$ 628,000		$ 753,600		$ 75,360	$ 828,960	$ 828,960	$ -
20.01 Total			At-grade station, stop, shelter, mall, terminal, platform		$ -		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
20.02 Total			Aerial station, stop, shelter, mall, terminal, platform		$ -		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
20.03 Total			Underground station, stop, shelter, mall, terminal, platform	LS			$ -		$ -	1	$ -		$ -		$ -	$ -	$ -	$ -
20.04 Total			Other stations, landings, terminals: Intermodal, ferry, trolley, etc.		$ -		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
20.06 Total			Automobile parking multi-story structure		$ -		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
20.07 Total			Elevators, escalators		$ -		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
30.03 Total			Heavy Maintenance Facility		$ -		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
30.05 Total			Yard and Yard Track		$ -		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
40	40.01	DM06	Demolition Allow. - Existing Building	SF	$ 6			620,605	3,723,630	620,605	$ 3,723,630	25%	$ 4,654,538	25%	$ 1,163,634	$ 5,818,172		
40	40.01	DM45	Demolition Allow - Sidewalk	SF	$ 4			5,615	22,460	5,615	$ 22,460	25%	$ 28,075	20%	$ 5,615	$ 33,690		
40	40.01	DM50	Demolition Allow - HMA Pavement	SF	$ 2			21,788	43,576	21,788	$ 43,576	25%	$ 54,469	20%	$ 10,894	$ 65,363		
40.01 Total			Demolition, Clearing, Earthwork		$ -		$ -		$ 3,723,630		$ 3,789,666		$ 4,737,082		$ 1,180,143	$ 5,917,226	$ 325,601	$ 5,591,625
40	40.02	UM50	Utility modification/Relocation allowance	LS		1	1,112,501	1	2,955,939	1	$ 4,068,440	25%	$ 5,085,550	20%	$ 1,017,110	$ 6,102,660		
40	40.02	UM90	Sturtevant Creek Development	LF	$ 1,000		-			-	$ -	25%	$ -	20%	$ -	$ -		-
40.02 Total			Site Utilities, Utility Relocation	LS	$ 3,552,097		$ 1,112,501		$ 2,955,939		$ 4,068,440		$ 5,085,550		$ 1,017,110	$ 6,102,660	$ 6,354,357	$ (251,697)
40	40.03	HM06	Hazardous Material Removal Allowance	LS	$ 70,000	0.67	46,744			1	$ 46,744	25%	$ 58,430	50%	$ 29,215	$ 87,645		
40.03 Total			Haz. mat'l, contam'd soil removal/mitigation, ground water treatmer	LS	$ 377,991		$ 46,744		$ -	1	$ 46,744		$ 58,430		$ 29,215	$ 87,645	$ 105,246	$ (17,601)
40	40.04	EM02	Environmental Mitigation Allow. - Level 2	RF	$ 150	345	51,788			345	$ 51,788	25%	$ 64,735	20%	$ 12,947	$ 77,682		
40	40.04	EM03	Environmental Mitigation Allow. - Level 3	RF	$ 249					-	$ -	25%	$ -	20%	$ -	$ -		
40	40.04		Environmental mitigation allowance- Sturtevenant Creek	RF	$ 1,300	500	650,000		-	500	$ 650,000	25%	$ 812,500	20%	$ 162,500	$ 975,000		
40	40.04		Environmental mitigation allowance- Sturtevenant Creek Buffer	SF	$ 5	25,000	125,000			25,000	$ 125,000	25%	$ 156,250	20%	$ 31,250	$ 187,500		
40	40.04	EM10	Residential Noise Mitigation Allow.	RF	$ 150					-	$ -	25%	$ -	20%	$ -	$ -		
40.04 Total			Environmental mitigation, e.g. wetlands, historic/archeologic, parks	LS			$ 826,788		$ -	1	$ 826,788		$ 1,033,485		$ 206,697	$ 1,240,182	$ 79,386	$ 1,160,797
40.05 Total			Site structures including retaining walls, sound walls		$ -		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
40	40.06	LS10	Landscaping Allow. - Guideway	RF	$ 87	1,332	115,916	118	10,262	1,450	$ 126,178	20%	$ 151,414	10%	$ 15,141	$ 166,555		
40.06 Total			Pedestrian / bike access and accommodation, landscaping		$ -		$ 115,916		$ 10,262		$ 126,178		$ 151,414		$ 15,141	$ 166,555	$ 168,843	$ (2,288)

Alternate B7

ARUP

ARUP

Additional line items not included in Sound Transit Estimate

Added according to ST C9T- need more info for our quantification

Length (RF)= 4,500

ARUP-REVISED B7 = Arup B7+Arup A2+Arup C9T

Extrapolation factor 0.51

	0.98		1.09		
B TO PORTAL					
B TO EM			**EM TO PORTAL**		
Begin	2138+70.00		Begin	2158+75.00	
End	2153+75.00		End	2167+00.00	
RF	1,505		RF	825	2,330

SCCRU	SCCPoint	Code	Desc	UOM	Composite unit cost (2007)	Qty	Subtotal	Qty	Subtotal	Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total	ST	Delta (Arup-ST)
40	40.07	RM37b	Roadway Reconstruction Allow. - 4 Travel Lanes, Asphalt	RF	$ 979			492	481,417	492	$ 481,417	20%	$ 577,701	15%	$ 86,655	$ 664,356		$ -
40	40.07	RM37C	Roadway Reconstruction Allow. - 5 Travel Lanes, Asphalt	RF	$ 1,120			50	55,820	50	$ 55,820	20%	$ 66,983	15%	$ 10,048	$ 77,031		$ -
40	40.07	RM40	Roadway Reconstruction Allow. - Curb & Sidewalk	RF	$ 270			498	134,565	498	$ 134,565	20%	$ 161,478	15%	$ 24,222	$ 185,700		$ -
40	40.07		Main Street Bridge	SF	$ 400			4,200	1,680,000	4,200	$ 1,680,000	20%	$ 2,016,000	15%	$ 302,400	$ 2,318,400		
40	40.07		LRT Bridge/culvert over Sturtevant Creek	SF	$ 300	1,200	360,000			1,200	$ 360,000	20%	$ 432,000	15%	$ 64,800	$ 496,800		
40	40.07	SS03	Streetscaping Allow. - Heavy	RF	$ 656			332	217,962	332	$ 217,962	20%	$ 261,555	15%	$ 39,233	$ 300,788		
40	40.07	SF07	Emergency/Maintenance Corridor Paved	SF	$ 19	12,765	242,537			12,765	$ 242,537	20%	$ 291,044	15%	$ 43,657	$ 334,701		
	40.07 Total		Automobile, bus, van accessways including roads, parking lots		$ -		$ 602,537		$ 2,569,764		$ 3,172,301		$ 3,806,761		$ 571,014	$ 4,377,775	$ 1,473,173	$ 2,904,603
40	40.08	AR01	1% for Art (1% of Category 10 thru 50, excluding 10.06 & 10.07)	LS	1%		153,803		169,046	1%	$ 322,849	20%	$ 387,419	15%	$ 58,113	$ 445,531		
	40.08 Total		Temporary Facilities and other Indirect Costs During Construction		$ -		$ 153,803		$ 169,046		$ 322,849		$ 387,419		$ 58,113	$ 445,531	$ 380,762	$ 64,769
50	50.01	TC02	Train Control - Double Track	RF	$ 485	1,505	729,925	825	400,125	2,330	$ 1,130,050	20%	$ 1,356,060	15%	$ 203,409	$ 1,559,469		
50	50.01	TC20	Train Control, Single Crossover	EA	$ 936,000	2	1,872,000		-	2	$ 1,872,000	20%	$ 2,246,400	15%	$ 336,960	$ 2,583,360		
	50.01 Total		Train control and signals		$ -		$ 2,601,925		$ 400,125	$ 2,332	$ 3,002,050		$ 3,602,460		$ 540,369	$ 4,142,829	$ 4,121,411	$ 21,418
	50.02 Total		Traffic signals and crossing protection		$ -												$ -	
	50.03 Total		Traction power supply: substations		$ -		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
50	50.04	TP02	OCS System - Standard, Double Track	RF	$ 180	1,505	270,900	825	148,500	2,330	$ 419,400	20%	$ 503,280	15%	$ 75,492	$ 578,772		
50	50.04	TP02S	Train Control, Double Track, Street	RF	$ 231		-		-	-	$ -	20%	$ -	15%	$ -	$ -		
	50.04 Total		Traction power distribution: catenary and third rail		$ -		$ 270,900		$ 148,500		$ 419,400		$ 503,280		$ 75,492	$ 578,772	$ 1,303,380	$ (724,608)
50	50.05	CM02	Communication, Line - Double	RF	$ 274	1,505	412,370	825	226,050	2,330	$ 638,420	20%	$ 766,104	15%	$ 114,916	$ 881,020		
50	50.05	CM20	Passenger Information System, Fiber Optic	LF	$ 24	1,505	36,120	825	19,800	2,330	$ 55,920	20%	$ 67,104	15%	$ 10,066	$ 77,170		
	50.05 Total		Communications		$ -		$ 448,490		$ 245,850		$ 694,340		$ 833,208		$ 124,981	$ 958,189	$ 945,030	$ 13,160
	50.06 Total		Fare collection system and equipment		$ -		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
50	50.07	CC010	Systems Central Control Software & Integration Allowance	EA	$ 500,000	1	500,000	1	500,000	2	$ 1,000,000	20%	$ 1,200,000	15%	$ 180,000	$ 1,380,000		
	50.07 Total		Central Control				$ 500,000		$ 500,000		$ 1,000,000		$ 1,200,000		$ 180,000	$ 1,380,000	$ 1,380,000	$ -
60	60.01	ROW	Right of Way	LS	$ 97,785,714						$ -	0%	$ -	40%	$ -	$ -		
	60.01 Total		Right of Way				$ -		$ -		$ -		$ -		$ -	$ -		$ -
Grand Total												**$**	**39,645,108**	**$**	**6,175,325**	***$ 45,820,432***	***$ 40,391,933***	**$ 5,428,500**

Segment B

Alternate B7

ARUP A2

ARUP

	Additional line items	Extrapolation factor
		1.40

KPFF

SCCRU	SCCPoint	Code	Desc	UOM	Composite unit cost (2007$)	A2 Quantity	Base Cost A2	Design Allowance (%)	Pre-Award Total A2	Allocated Contingency (%)	Subtotal Contingency A2	Total A2	KPFF A2 Unit cost(2007 $)	KPFF Quant	KPFF A2 Total Cost	Delta (Arup-KPFF)
10.01 Total			Guideway: At-grade exclusive right-of-way		$ -		$ -		$ -		$ -	$ -				
10	10.04		Twin-Sgl. Precast Box Girder (Avg. Pier 70' Ht.) for A-2 station	RF	$ 13,335	380	$ 5,067,300	20%	$ 6,080,760	15%	$ 912,114	$ 6,992,874				$ 6,992,874
10.04 Total			Guideway: Aerial structure				$ 5,067,300		$ 6,080,760		$ 912,114	$ 6,992,874				
10.05 Total			Guideway: Built-up fill		$ -				$ -		$ -	$ -				
10.06 Total			Guideway: Underground cut & cover		$ -				$ -		$ -	$ -				
10.07 Total			Guideway: Underground tunnel		$ -											
10.08 Total			Cut or fill		$ -											
10.09 Total			Track: Direct fixation		$ -		$ -		$ -		$ -	$ -				
10.10 Total			Track: Embedded		$ -		$ -		$ -		$ -	$ -				
10.11 Total			Track: Ballasted		$ -		$ -		$ -		$ -	$ -				
10.12 Total			Track: Special (switches, turnouts)		$ -		$ -		$ -		$ -	$ -				
20.01 Total			At-grade station, stop, shelter, mall, terminal, platform		$ -		$ -		$ -		$ -	$ -				
20	20.02	ST20	Aerial -30' center platform- 4 vehicle without Mezz	LS	$ 15,800,000	1	$ 15,800,000	20%	$ 18,960,000	15%	$ 2,844,000	$ 21,804,000	$ 23,940,000	1	$ 23,940,000	$ (2,136,000)
20	20.02		Circulation mezzanine below track level	LS	$ 4,750,000	1	$ 4,750,000	20%	$ 5,700,000	15%	$ 855,000	$ 6,555,000	$ 6,650,000	1	$ 6,650,000	$ (95,000)
20	20.02		Additional 25' elevation over B3	LS	$ 1,700,000	1	$ 1,700,000	20%	$ 2,040,000	15%	$ 306,000	$ 2,346,000	$ 2,380,000	1	$ 2,380,000	$ (34,000)
20	22.02		Side loaded platform adder	LS	$ 7,142,857								$ 10,000,000	1	$ 10,000,000	$ (10,000,000)
20.02 Total			Aerial station, stop, shelter, mall, terminal, platform				$ 22,250,000		$ 26,700,000		$ 4,005,000	$ 30,705,000			$ 42,970,000	
20.03 Total			Underground station, stop, shelter, mall, terminal, platform		$ -		$ -		$ -		$ -	$ -				
20.04 Total			Other stations, landings, terminals: Intermodal, ferry, trolley, etc.		$ -		$ -		$ -		$ -	$ -				
20	20.06	SF20	Station Site Facilities - Parking Garage	SP	$ 16,700	1,450	$ 24,215,000	20%	$ 29,058,000	15%	$ 4,358,700	$ 33,416,700	$ 26,740	1,400	$ 37,436,000	$ (4,019,300)
20	20.06		Spread footing	CY	$ 250	19,162	$ 4,790,491	20%	$ 5,748,589	15%	$ 862,288	$ 6,610,877				$ 6,610,877
20	20.06		Transit center	SF	$ 50	85,134	$ 4,256,699	20%	$ 5,108,039	15%	$ 766,206	$ 5,874,245				$ 5,874,245
20	20.06		Excavation, Shoring, ventilation adder	LS			$ -		$ -		$ -	$ -	$ 2,800,000	1	$ 2,800,000	$ (2,800,000)
20	20.06		Shoring adder	LS	$ 560,000	1	$ 560,000	20%	$ 672,000	15%	$ 100,800	$ 772,800				$ 772,800
20.06 Total			Automobile parking multi-story structure		$ -		$ 33,822,190		$ 40,586,627		$ 6,087,994	$ 46,674,622			$ 40,236,000	
20	20.07	PA31	Pedestrian Vertical Access - Elevator, 25ft	EA	$ 186,000	2	$ 372,000	20%	$ 446,400	10%	$ 44,640	$ 491,040			$ -	$ 491,040
20	20.07	PA31	Pedestrian Vertical Access - Elevator, 40ft.	EA	$ 274,000	4	$ 1,096,000	20%	$ 1,315,200	10%	$ 131,520	$ 1,446,720	$ 383,600	1	$ 383,600	$ 1,063,120
20	20.07	PA31	Pedestrian Vertical Access - Escalator, 25ft	EA	$ 243,000	2	$ 486,000	20%	$ 583,200	10%	$ 58,320	$ 641,520			$ -	$ 641,520
20	20.07	PA36	Pedestrian Vertical Access - Escalator, 40ft.	EA	$ 331,000		$ -	20%	$ -	10%	$ -	$ -	$ 463,400	1	$ 463,400	$ (463,400)
20.07 Total			Elevators, escalators				$ 1,954,000		$ 2,344,800		$ 234,480	$ 2,579,280			$ 847,000	
30.03 Total			Heavy Maintenance Facility		$ -		$ -		$ -		$ -	$ -				
30.05 Total			Yard and Yard Track		$ -		$ -		$ -		$ -	$ -				
40	40.01	DM05	Demolition Allow. - Existing Building, Moderate	EA	$ 48,330	13	$ 628,290	25%	$ 785,363	25%	$ 196,341	$ 981,703	$ 67,662	13	$ 879,606	$ 102,097
40	40.01	EW01	Fill	CY	$ 25	20,275	$ 506,875	25%	$ 633,594	25%	$ 158,398	$ 791,992				$ 791,992
40	40.01	EW02	Cut	CY	$ 32	126,698	$ 4,054,349	25%	$ 5,067,936	25%	$ 1,266,984	$ 6,334,920				$ 6,334,920
40.01 Total			Demolition, Clearing, Earthwork				$ 5,189,514		$ 6,486,892		$ 1,621,723	$ 8,108,615			$ 879,606	
40	40.02	UM11B	Storm Water Piping - 18" CPE Pipe (Buried)	RF	$ 200	440	$ 88,000	25%	$ 110,000	20%	$ 22,000	$ 132,000	$ 1,396	440	$ 614,240	$ (482,240)
40	40.02	UM50	Relocation allowance	LS	$ 71,429	1	$ 71,429	25%	$ 89,286	20%	$ 17,857	$ 107,143	$ 100,000	1	$ 100,000	$ 7,143
40.02 Total			Site Utilities, Utility Relocation				$ 159,429		$ 199,286		$ 39,857	$ 239,143			$ 714,240	
40.03 Total			Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		$ -		$ -		$ -		$ -	$ -				
40	40.04	EM11	Environmental mitigation allowance	LS	$ 821,744	1	$ 821,744	25%	$ 1,027,180	20%	$ 205,436	$ 1,232,616	$ 4,564,400		$ -	$ 1,232,616
40.04 Total			Environmental mitigation, e.g. wetlands, historic/archeologic, parks				$ 821,744		$ 1,027,180		$ 205,436	$ 1,232,616			$ -	
40	40.05	RW15	Retaining Wall - CIP (Avg 10')	RF	$ 757		$ -	20%	$ -	10%	$ -	$ -	$ 1,060	580	$ 614,800	$ (614,800)
40	40.05	RW16	Retaining Wall - CIP (Avg 20')	RF	$ 1,530		$ -	20%	$ -	10%	$ -	$ -	$ 2,142	300	$ 642,600	$ (642,600)
40	40.05		Retaining Wall -MSE (Avg 16')	RF	$ 400	200	$ 80,000	20%	$ 96,000	10%	$ 9,600	$ 105,600				$ 105,600
40	40.05		Retaining Wall - MSE (Avg 30')	RF	$ 750	790	$ 592,500	20%	$ 711,000	10%	$ 71,100	$ 782,100				$ 782,100
40.05 Total			Site structures including retaining walls, sound walls		$ -		$ 672,500		$ 807,000		$ 80,700	$ 887,700			$ 1,257,400	
40	40.06		Pedestrian Bridge	SF	$ 250	6,730	$ 1,682,500	20%	$ 2,019,000	10%	$ 201,900	$ 2,220,900	$ 350	2,800	$ 980,000	$ 1,240,900
40.06 Total			Pedestrian / bike access and accommodation, landscaping		$ -		$ 1,682,500		$ 2,019,000		$ 201,900	$ 2,220,900			$ 980,000	

Segment B

Alternate B7

ARUP A2

ARUP

	Additional line items	Extrapolation factor
		1.40

KPFF

SCCRU	SCCPoint	Code	Desc	UOM	Composite unit cost (2007$)	A2 Quantity	Base Cost A2	Design Allowance (%)	Pre-Award Total A2	Allocated Contingency (%)	Subtotal Contingency A2	Total A2	KPFF A2 Unit cost(2007 $)	KPFF Quant	KPFF A2 Total Cost	Delta (Arup-KPFF)
40	40.07		Roadway Reconstruction Allow.	SF	$ 1,350	3,660	$ 4,941,000	20%	$ 5,929,200	15%	$ 889,380	$ 6,818,580	$ 1,890	1,400	$ 2,646,000	$ 4,172,580
40	40.07		Roadway Bridge	SF	$ 400	5,180	$ 2,072,000	20%	$ 2,486,400	15%	$ 372,960	$ 2,859,360	$ 560	18,020	$ 10,091,200	$ (7,231,840)
40	40.07		Bus Ramp	SF	$ 124	19,250	$ 2,381,296	20%	$ 2,857,556	15%	$ 428,633	$ 3,286,189			$ -	$ 3,286,189
40	40.07	SS02	Streetscaping Allow. - Moderate	RF	$ 423	700	$ 296,000	20%	$ 355,200	15%	$ 53,280	$ 408,480	$ 592	700	$ 414,400	$ (5,920)
40	40.07	SS03	Streetscaping Allow. - Heavy	RF	$ 656	1,400	$ 918,000	20%	$ 1,101,600	15%	$ 165,240	$ 1,266,840	$ 918	1,400	$ 1,285,200	$ (18,360)
40	40.07	SF03	1/2 street improvements-113th Ave SE	LS	$ 892,857	1	$ 892,857	20%	$ 1,071,429	15%	$ 160,714	$ 1,232,143	$ 1,000,000	1	$ 1,000,000	$ 232,143
40	40.07	SF02D	Roadway modifications allowance - AC Paving	SF	$ 22	37,095	$ 821,389	20%	$ 985,667	15%	$ 147,850	$ 1,133,517	$ 31	64,395	$ 1,996,245	$ (862,728)
40.07 Total			Automobile, bus, van accessways including roads, parking lots		$ -		$ 12,322,543		$ 14,787,051		$ 2,218,058	$ 17,005,109			$ 17,433,045	
40	40.08	AR01	1% for Art (1% of Category 10 thru 50, excluding 10.06 & 10.07)	LS	1%	1	$ 853,512	20%	$ 1,024,215	15%	$ 153,632	$ 1,177,847	$ -	-	$ -	$ 1,177,847
40.08 Total			Temporary Facilities and other Indirect Costs During Construction		$ -		$ 853,512		$ 1,024,215		$ 153,632	$ 1,177,847				
50.01 Total			Train control and signals		$ -		$ -		$ -		$ -	$ -				
50	50.02	RM21	Roadway Modifications Allow. - New Signal	EA	$ 351,000	2	$ 526,500	20%	$ 631,800	15%	$ 94,770	$ 726,570	$ 491,400	$ 1	$ 491,400	$ 235,170
50.02 Total			Traffic signals and crossing protection				$ 526,500		$ 631,800		$ 94,770	$ 726,570			$ 491,400	
50.03 Total			Traction power supply: substations		$ -		$ -		$ -		$ -	$ -				
50.04 Total			Traction power distribution: catenary and third rail		$ -		$ -		$ -		$ -	$ -				
50	50.05	CM05	Communication, Station	EA	$ 624,000	1	$ 624,000	20%	$ 748,800	15%	$ 112,320	$ 861,120	$ 873,600	1	$ 873,600	$ (12,480)
50.05 Total			Communications		$ -		$ 624,000		$ 748,800		$ 112,320	$ 861,120			$ 873,600	
50	50.06	FC01	Fare Collection - 1 Entrance	EA	$ 259,000	1	$ 259,000	20%	$ 310,800	15%	$ 46,620	$ 357,420	$ 362,600	1	$ 362,600	$ (5,180)
50.06 Total			Fare collection system and equipment		$ -		$ 259,000		$ 310,800		$ 46,620	$ 357,420			$ 362,600	
60	60.01	ROW	Right of Way	LS	$ 10,021,429		$ -	0%	$ -	40%	$ -	$ -	$ 13,332,000		$ -	$ -
60.01 Total			Right of Way				$ -		$ -		$ -	$ -			-	
Grand Total (Including ROW)									**$ 103,754,211**		**$ 16,014,604**	***$ 119,768,815***			***$ 107,044,891***	***$ 12,723,924***

Environmental mitigation:		KPFF			Arup A-2				
Mitigation Element:			LRT .34 acre impact	Parking structure A2 (.4 acre impact)	LRT (SF)	$ Cost/SF	Total (LRT)	Ramp (acres)	Parking structure A2 (.27 acre impact)
Land	SF	$ 25							
Wetland Creation, Enhancement, or Restoration (6:1 Ratio)	SF	$ 20	$ 1,788,000	$ 2,016,000	7500	$ 300,000	$ 309,917	0.27	$ 486,000
Wetland Creation, Enhancement, or Restoration (3:1 Ratio)					7500	$ 50,000	$ 25,826		
Mitigation Plan Report		$ 80,000		$ 80,000					
Mitigation Design Drawings		10%	$ 178,800	$ 201,600					
Monitoring 10 years		$ 300,000		$ 300,000					
Total LRT + PARKING				**$ 4,564,400**					**$ 821,744**

Deflation

	CCI-RS Means-Seattle, WA		CCI-ENR-Seattle, WA	
3rd Qtr 2007	108.3		8624.67	
4th Qtr 2010	107.2	1%	8694.49	-0.81%
2ND Qtr 2011	105.8	2.31%	8736.22	-1.29%

Notes:
Extrapolation factor (1.40) used to deflate KPFF's unit cost. It has 40% contingency included. According to ST's method, Arup has added variable contingency

Segment B

Alternate B7

ARUP

ARUP

0.78

Additional line items not included in Sound Transit Estimate

BTC= Bellevue Transit Center

Arup C9T Length (RF)= 3,975

PORTAL TO BTC	
Begin	2167+00.00
End	2177+50.00
RF	1,050

ARUP-REVISED B7 = Arup B7+Arup A2+Arup C9T

SCCRU	SCCPoint	Code	Desc	UOM	Composite unit cost (2007)	Qty	Subtotal	PORTAL TO END Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total	ST	Delta (Arup - ST)
10.01 Total			Guideway: At-grade exclusive right-of-way		$ -				$ -		$ -		$ -	$ -		$ -
10.04 Total			Guideway: Aerial structure		$ -		$ -		$ -		$ -		$ -	$ -		$ -
10.05 Total			Guideway: Built-up fill		$ -						$ -		$ -	$ -	$ -	$ -
10	10.06	CC02	Cut and Cover Box (Avg. 25' Depth)	RF	$ 27,200	400	10,880,000	400	$ 10,880,000	20%	$ 13,056,000	20%	$ 2,611,200	$ 15,667,200		
10	10.06	CC03	Cut and Cover Box (Avg. 35' Depth)	RF	$ 31,300	250	7,825,000	250	$ 7,825,000	20%	$ 9,390,000	20%	$ 1,878,000	$ 11,268,000		
10	10.06	CC04	Cut and Cover Box (Avg. 45' Depth)	RF	$ 35,500	400	14,200,000	400	$ 14,200,000	20%	$ 17,040,000	20%	$ 3,408,000	$ 20,448,000		
10.06 Total			Guideway: Underground cut & cover		$ -		$ 32,905,000		$ 32,905,000		$ 39,486,000		$ 7,897,200	$ 47,383,200	$ 71,689,730	$ (24,306,530)
10	10.07	VS05	Fan / Vent Shaft (18' O.D.)	VF	$ 5,830	200	1,166,000	200	$ 1,166,000	20%	$ 1,399,200	20%	$ 279,840	$ 1,679,040		
10	10.07	VS05B	Ventilation Shaft Bypass Area	SF	$ 624	-	-	-	$ -	20%	$ -	20%	$ -	$ -		
10	10.07	VS21C	Tunnel Jet fans	LS	$ 353,388	1	353,388	1	$ 353,388	25%	$ 441,735	20%	$ 88,347	$ 530,082		
10	10.07	VS40	Underground Tunnel Vent Fan Room	SF	$ 420		-	-	$ -	25%	$ -	25%	$ -	$ -		
10	10.07	VS41	Emergency Vent Structure Building	SF	$ 590	1,500	885,000	1,500	$ 885,000	25%	$ 1,106,250	25%	$ 276,563	$ 1,382,813		
10.07 Total			Guideway: Underground tunnel		$ -		$ 2,404,388		$ 2,404,388		$ 2,947,185		$ 644,749	$ 3,591,934	$ 3,739,853	$ (147,918)
10.08 Total			Guideway: Retained cut or fill		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
10	10.09	TK21	Direct Fixation - Double Track	RF	$ 997	1,050	1,046,850	1,050	$ 1,046,850	20%	$ 1,256,220	10%	$ 125,622	$ 1,381,842		
10.09 Total			Track: Direct fixation		$ -		$ 1,046,850		$ 1,046,850		$ 1,256,220		$ 125,622	$ 1,381,842	$ 1,767,442	$ (385,600)
10.10 Total			Track: Embedded		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
10.11 Total			Track: Ballasted		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
10.12 Total			Track: Special (switches, turnouts)		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
20.01 Total			At-grade station, stop, shelter, mall, terminal, platform		$ -		$ -		$ -		$ -		$ -	$ -		$ -
20.02 Total			Aerial station, stop, shelter, mall, terminal, platform		$ -		$ -		$ -		$ -		$ -	$ -		$ -
20.03 Total			Underground station, stop, shelter, mall, terminal, platform				$ -		$ -		$ -		$ -	$ -		$ -
20.04 Total			Other stations, landings, terminals: Intermodal, ferry, trolley, etc.		$ -		$ -		$ -		$ -		$ -	$ -		$ -
20.06 Total			Automobile parking multi-story structure		$ -		$ -		$ -		$ -		$ -	$ -		$ -
20.07 Total			Elevators, escalators		$ -		$ -		$ -		$ -		$ -	$ -		$ -
30.03 Total			Heavy Maintenance Facility		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
30.05 Total			Yard and Yard Track		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
40	40.01	DM05	Demolition Allow. - Existing Building, Moderate	EA	$ 48,330	6	289,980	6	$ 289,980	25%	$ 362,475	25%	$ 90,619	$ 453,094		
40	40.01	DM45	Demolition Allow - Sidewalk	SF	$ 4	12,730	50,920	12,730	$ 50,920	25%	$ 63,650	20%	$ 12,730	$ 76,380		
40	40.01	DM50	Demolition Allow - HMA Pavement	SF	$ 2	49,395	98,790	49,395	$ 98,790	25%	$ 123,488	20%	$ 24,698	$ 148,186		
40.01 Total			Demolition, Clearing, Earthwork		$ -		$ 289,980		$ 289,980		$ 362,475		$ 90,619	$ 453,094	$ 526,628	$ (73,534)

Segment B

Alternate B7

ARUP

ARUP

0.78

Additional line items not included in Sound Transit Estimate

BTC= Bellevue Transit Center

Arup C9T Length (RF)= 3,975

PORTAL TO BTC	
Begin	2167+00.00
End	2177+50.00
RF	1,050

ARUP-REVISED B7 = Arup B7+Arup A2+Arup C9T

SCCRU	SCCPoint	Code	Desc	UOM	Composite unit cost (2007)	Qty	Subtotal	PORTAL TO END Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total	ST	Delta (Arup - ST)
40	40.02		Utility modification/Relocation allowance	LS	$ 3,542,393	1	3,542,393	1	$ 3,542,393	31%	$ 4,623,468	21%	$ 970,928	$ 5,594,396		
40.02 Total			Site Utilities, Utility Relocation	LS	$ -		$ 3,542,393		$ 3,542,393		$ 4,623,468		$ 970,928	$ 5,594,396	$ 7,134,356	$ (1,539,960)
40.03 Total			Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		$ -		$ -	1	$ -		$ -		$ -	$ -	$ -	$ -
40.04 Total			Environmental mitigation, e.g. wetlands, historic/archeologic, parks	LS	$ -		$ -	1	$ -		$ -		$ -	$ -	$ -	$ -
40.05 Total			Site structures including retaining walls, sound walls		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
40	40.06	LS10	Landscaping Allow. - Guideway	RF	$ 87	150	13,061	150	$ 13,061	20%	$ 15,673	10%	$ 1,567	$ 17,240		
40.06 Total			Pedestrian / bike access and accommodation, landscaping		$ -		$ 13,061		$ 13,061		$ 15,673		$ 1,567	$ 17,240	$ 22,051	$ (4,811)
40	40.07	RM32	Roadway Reconstruction Allow. - 4 Travel Lanes, PCCP	RF	$ 1,260	803	1,011,705	803	$ 1,011,705	20%	$ 1,214,047	15%	$ 182,107	$ 1,396,154		
40	40.06	RM37C	Roadway Reconstruction Allow. - 5 Travel Lanes, Asphalt	RF	$ 1,120	63	71,043	63	$ 71,043	20%	$ 85,252	15%	$ 12,788	$ 98,039		
40	40.07	RM40	Roadway Reconstruction Allow. - Curb & Sidewalk	RF	$ 270	634	171,265	634	$ 171,265	20%	$ 205,518	15%	$ 30,828	$ 236,345		
40	40.07	SS03	Streetscaping Allow. - Heavy	RF	$ 656	423	277,406	423	$ 277,406	20%	$ 332,888	15%	$ 49,933	$ 382,821		
40.07 Total			Automobile, bus, van accessways including roads, parking lots		$ -		$ 1,531,420		$ 1,531,420		$ 1,837,703		$ 275,656	$ 2,113,359	$ 2,304,837	$ (191,478)
40	40.08	AR01	1% for Art (1% of Category 10 thru 50, excluding 10.06 & 10.07)	LS	1%		74,349	1%	$ 74,349	20%	$ 89,218	15%	$ 13,383	$ 102,601		
40.08 Total			Temporary Facilities and other Indirect Costs During Construction		$ -		$ 74,349		$ 74,349		$ 89,218		$ 13,383	$ 102,601	$ 131,146	$ (28,545)
50	50.01	TC02	Train Control - Double Track	RF	$ 485	1,050	509,250	1,050	$ 509,250	20%	$ 611,100	15%	$ 91,665	$ 702,765		
50.01 Total			Train control and signals		$ -		$ 509,250	$ 1,050	$ 509,250		$ 611,100		$ 91,665	$ 702,765	$ 898,870	$ (196,105)
50.02 Total			Traffic signals and crossing protection		$ -										$ -	$ -
50.03 Total			Traction power supply: substations		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
50	50.04	TP02	OCS System - Standard, Double Track	RF	$ 180	1,050	189,000	1,050	$ 189,000	20%	$ 226,800	15%	$ 34,020	$ 260,820		
50	50.04	TP02S	Train Control, Double Track, Street	RF	$ 231		-	-	$ -	20%	$ -	15%	$ -	$ -		
50.04 Total			Traction power distribution: catenary and third rail		$ -		$ 189,000		$ 189,000		$ 226,800		$ 34,020	$ 260,820	$ 761,723	$ (500,903)
50	50.05	CM02	Communication, Line - Double	RF	$ 274	1,050	287,700	1,050	$ 287,700	20%	$ 345,240	15%	$ 51,786	$ 397,026		
50	50.05	CM20	Passenger Information System, Fiber Optic	LF	$ 24	1,050	25,200	1,050	$ 25,200	20%	$ 30,240	15%	$ 4,536	$ 34,776		
50.05 Total			Communications		$ -		$ 312,900		$ 312,900		$ 375,480		$ 56,322	$ 431,802	$ 552,295	$ (120,493)
50.06 Total			Fare collection system and equipment		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -
50.07 Total			Central Control				$ -		$ -		$ -		$ -	$ -	$ -	$ -
60	60.01	ROW	Right of Way	LS	$ (41,985,714)		-		$ -	0%	$ -	40%	$ -	$ -		
60.01 Total			Right of Way				$ -		$ -		$ -		$ -	$ -		$ -
Grand Total										**$**	**51,924,891**	**$**	**10,220,445**	***$ 62,033,053***	***$ 89,528,929***	***$ (27,495,876)***

Segment B

Alternate B7

ARUP

C9T- B to EM C9T=EM EM

ARUP

Additional line items not included in Sound Transit Estimate

Length (RF)= 4,500

1.32

East Main Station	
Begin	2153+75.00
End	2158+75.00
RF	500

5,410

ARUP-REVISED B7 = Arup B7+Arup A2+Arup C9T

SCCRU	SCCPoint	Code	Desc	UOM	Composite unit cost (2007)	Qty	Subtotal	EM Station Quantity	Base Cost EM Station	Design Allowance (%)	Pre-Award Total EM Station	Allocated Contingency (%)	Subtotal Contingency EM Station	Total EM Station	ST EM	Delta (Arup-ST)
10.01 Total			Guideway: At-grade exclusive right-of-way		$ -				$ -		$ -		$ -	$ -		$ -
10.04 Total			Guideway: Aerial structure		$ -		$ -		$ -		$ -		$ -	$ -	$ 3,287,988	$ (3,287,988)
10.05 Total			Guideway: Built-up fill		$ -						$ -		$ -	$ -		$ -
10.06 Total			Guideway: Underground cut & cover		$ -		$ -		$ -		$ -		$ -	$ -		$ -
10.07 Total			Guideway: Underground tunnel		$ -		$ -		$ -		$ -		$ -	$ -		$ -
10	10.08	RF30	Fill	CY	$ 25	68	1,706	68	$ 1,706	20%	$ 2,047	15%	$ 307	$ 2,354		
10	10.08	RF34	Excavation	CY	$ 32	10963	350,800	10,963	$ 350,800	20%	$ 420,960	15%	$ 63,144	$ 484,104		
40	40.05	RW15	Retaining Wall - CIP, 20' avg height one side	LF	$ 1,260	1,000	1,260,000	1,000	$ 1,260,000	20%	$ 1,512,000	10%	$ 151,200	$ 1,663,200		
10.08 Total			Guideway: Retained cut or fill		$ -		$ 1,612,506		$ 1,612,506		$ 1,935,007		$ 214,651	$ 2,149,659		$ 2,149,659
10	10.09	TK21	Direct Fixation - Double Track	RF	$ 997	500	498,500	500	$ 498,500	20%	$ 598,200	10%	$ 59,820	$ 658,020		
10.09 Total			Track: Direct fixation		$ -		$ 498,500		$ 498,500		$ 598,200		$ 59,820	$ 658,020	$ 500,095	$ 157,925
10.10 Total			Track: Embedded		$ -		$ -		$ -		$ -		$ -	$ -		
10.11 Total			Track: Ballasted		$ -		$ -		$ -		$ -		$ -	$ -		
10.12 Total			Track: Special (switches, turnouts)		$ -		$ -		$ -		$ -		$ -	$ -		
20	20.01	ST89	At-Grade - Bus Stop, Curb Bulb Platform - 1 Vehicle Platform	EA	$ 45,300	5	226,500	5	$ 226,500	20%	$ 271,800	5%	$ 13,590	$ 285,390		
20.01 Total			At-grade station, stop, shelter, mall, terminal, platform		$ -		$ 226,500		$ 226,500		$ 271,800		$ 13,590	$ 285,390	$ 285,390	$ -
20.02 Total			Aerial station, stop, shelter, mall, terminal, platform		$ -		$ -		$ -		$ -		$ -	$ -	$ 31,740,000	$ (31,740,000)
20	20.01		Station, stop, shelter, mall, terminal, platform	LS	$ 20,000,000	1	20,000,000	1	$ 20,000,000	20%	$ 24,000,000	20%	$ 4,800,000	$ 28,800,000		
20.03 Total			Underground station, stop, shelter, mall, terminal, platform				$ 20,000,000	1	$ 20,000,000		$ 24,000,000		$ 4,800,000	$ 28,800,000		$ 28,800,000
20.04 Total			Other stations, landings, terminals: Intermodal, ferry, trolley, etc.		$ -		$ -		$ -		$ -		$ -	$ -		
20.06 Total			Automobile parking multi-story structure		$ -		$ -		$ -		$ -		$ -	$ -		
20	20.07	PA31	Pedestrian Vertical Access - Elevator, 25ft	EA	$ 186,000	2	372,000	2	$ 372,000	20%	$ 446,400	10%	$ 44,640	$ 491,040		
20	20.07	PA31	Pedestrian Vertical Access - Escalator, 25ft	EA	$ 243,000	2	486,000	2	$ 486,000	20%	$ 583,200	10%	$ 58,320	$ 641,520		
20.07 Total			Elevators, escalators		$ -		$ 858,000		$ 858,000		$ 1,029,600		$ 102,960	$ 1,132,560	$ 1,160,280	$ (27,720)
30.03 Total			Heavy Maintenance Facility		$ -		$ -		$ -		$ -		$ -	$ -		$ -
30.05 Total			Yard and Yard Track		$ -		$ -		$ -		$ -		$ -	$ -		$ -
40	40.01	DM05	Demolition Allow. - Existing Building, Moderate	EA	$ 48,330			-	$ -	25%	$ -	25%	$ -	$ -		
40	40.01	DM06	Demolition Allow. - Existing Building	SF	$ 6	334,605	2,007,630	334,605	$ 2,007,630	25%	$ 2,509,538	25%	$ 627,384	$ 3,136,922		
40.01 Total			Demolition, Clearing, Earthwork		$ -		$ 2,007,630		$ 2,007,630		$ 2,509,538		$ 627,384	$ 3,136,922	$ 377,578	$ 2,759,344
40	40.02	UM50	Utility Relocation allowance	LS		1.32	377,706	1	$ 377,706	25%	$ 472,132	20%	$ 94,426	$ 566,559		
40.02 Total			Site Utilities, Utility Relocation	LS	$ -		$ 377,706		$ 377,706		$ 472,132		$ 94,426	$ 566,559	$ 432,715	$ 133,844
40	40.03	HM06	Hazardous Material Removal Allowance	LS	$ 13,869	1.32	18,248	1	$ 18,248	25%	$ 22,810	50%	$ 11,405	$ 34,215		
40.03 Total			Haz. mat'l, contam'd soil removal/mitigation, ground water treatmen	LS	$ -		$ 18,248	1	$ 18,248		$ 22,810		$ 11,405	$ 34,215	$ 26,004	$ 8,212
40	40.04	EM02	Environmental Mitigation Allow. - Level 2	RF	$ 150	115	17,205	115	$ 17,205	25%	$ 21,507	20%	$ 4,301	$ 25,808		
40.04 Total			Environmental mitigation, e.g. wetlands, historic/archeologic, parks		$ -		$ 17,205	1	$ 17,205		$ 21,507		$ 4,301	$ 25,808	$ 19,614	$ 6,194
40.05 Total			Site structures including retaining walls, sound walls		$ -		$ -		$ -		$ -		$ -	$ -		$ -
40	40.06	PA10	Station Pedestrian Access - Plaza	SF	$ 54	15,024	811,296	15,024	$ 811,296	20%	$ 973,555	10%	$ 97,356	$ 1,070,911		
40	40.06		Station Concrete Stairs	flight (12 Risers)	$ 3,248	8	25,984	8	$ 25,984	20%	$ 31,181	10%	$ 3,118	$ 34,299		
40	40.06		Construct / Replace 12' Bike Path, ACP	LF	$ 92		-	-	$ -	20%	$ -	10%	$ -	$ -		
40	40.06	LS10	Landscaping Allow. - Guideway	RF	$ 87	445	38,715	445	$ 38,715	20%	$ 46,458	10%	$ 4,646	$ 51,104		
40.06 Total			Pedestrian / bike access and accommodation, landscaping		$ -		$ 875,995		$ 875,995		$ 1,051,194		$ 105,119	$ 1,156,313	$ 763,551	$ 392,762
40.07 Total			Automobile, bus, van accessways including roads, parking lots		$ -		$ -		$ -		$ -		$ -	$ -	$ -	$ -

Segment B

Alternate B7

ARUP

C9T- B to EM C9T=EM EM

ARUP

Additional line items not included in Sound Transit Estimate

Length (RF)= 4,500

1.32

East Main Station	
Begin	2153+75.00
End	2158+75.00
RF	500

5,410

ARUP-REVISED B7 = Arup B7+Arup A2+Arup C9T

SCCRU	SCCPoint	Code	Desc	UOM	Composite unit cost (2007)	Qty	Subtotal	EM Station Quantity	Base Cost EM Station	Design Allowance (%)	Pre-Award Total EM Station	Allocated Contingency (%)	Subtotal Contingency EM Station	Total EM Station	ST EM	Delta (Arup-ST)
40	40.08	AR01	1% for Art (1% of Category 10 thru 50, excluding 10.06 & 10.07)	LS	1%		278,568	1%	$ 278,568	20%	$ 334,281	15%	$ 50,142	$ 384,424		
40.08 Total			Temporary Facilities and other Indirect Costs During Construction		$ -		$ 278,568		$ 278,568		$ 334,281		$ 50,142	$ 384,424	$ 404,861	$ (20,438)
50	50.01	TC02	Train Control - Double Track	RF	$ 485	500	242,500	500	$ 242,500	20%	$ 291,000	15%	$ 43,650	$ 334,650		
50.01 Total			Train control and signals		$ -		$ 242,500	$ 500	$ 242,500		$ 291,000		$ 43,650	$ 334,650	$ 254,334	$ 80,316
50.02 Total			Traffic signals and crossing protection		$ -										$ -	
50.03 Total			Traction power supply: substations		$ -		$ -		$ -		$ -		$ -	$ -	$ -	
50	50.04	TP02	OCS System - Standard, Double Track	RF	$ 180	500	90,000	500	$ 90,000	20%	$ 108,000	15%	$ 16,200	$ 124,200		
50	50.04	TP02S	Train Control, Double Track, Street	RF	$ 231		-	-	$ -	20%	$ -	15%	$ -	$ -		
50.04 Total			Traction power distribution: catenary and third rail		$ -		$ 90,000		$ 90,000		$ 108,000		$ 16,200	$ 124,200	$ 215,528	$ (91,328)
50	50.05	CM02	Communication, Line - Double	RF	$ 274	500	137,000	500	$ 137,000	20%	$ 164,400	15%	$ 24,660	$ 189,060		
50	50.05	CM05	Communication, Station	EA	$ 624,000	1	624,000	1	$ 624,000	20%	$ 748,800	15%	$ 112,320	$ 861,120		
50	50.05	CM20	Passenger Information System, Fiber Optic	LF	$ 24	500	12,000	500	$ 12,000	20%	$ 14,400	15%	$ 2,160	$ 16,560		
50.05 Total			Communications		$ -		$ 773,000		$ 773,000		$ 927,600		$ 139,140	$ 1,066,740	$ 1,017,391	$ 49,349
50	50.06	FC01	Fare Collection - 1 Entrance	EA	$ 259,000	1	259,000	1	$ 259,000	20%	$ 310,800	15%	$ 46,620	$ 357,420		
50.06 Total			Fare collection system and equipment		$ -		$ 259,000		$ 259,000		$ 310,800		$ 46,620	$ 357,420	$ 357,420	$ -
50.07 Total			Central Control				$ -		$ -		$ -		$ -	$ -		
60	60.01	ROW	Right of Way	LS	$ 26,200,000		-		$ -	0%	$ -	40%	$ -	$ -		
60.01 Total			Right of Way				$ -		$ -		$ -		$ -	$ -		$ -
Grand Total										**$ 33,883,470**		**$ 6,329,410**		***$ 40,212,880***	***$ 40,842,751***	***$ (629,871)***

Segment B
Alternate B7

Sound Transit- B7 (excluding 118th station)

Option **3/22/2011**

Modified to break out station quantity

						1			2								
						0.97		12324									
						End A1 to 118th Ave SE Station			**118th Ave SE Station to End B7**								
						Begin		2000+00.00	Begin	2123+24.00							
						End		2119+44.00	End	2138+70.00		13,870					
						RF		11,944	RF	1,546	RF	13,490					
SCCRU	SCCPoint	Code	Desc	UOM	Composite Unit Cost	Qty	ST QTY	Subttl $	Qty	Subttl $	Total Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total
10	10.01	AG02	At-Grade Dbl Ballasted Track	RF	657	4,600		3,022,200		-	4,600	$ 3,022,200	20%	$ 3,626,640	15%	$ 543,996	$ 4,170,636
10	10.01	AG11	At-Grade Dbl Track in Roadway - Embedded, Exclusive	RF	1,030	100		103,000		-	100	$ 103,000	20%	$ 123,600	15%	$ 18,540	$ 142,140
10	10.01	AG20	At-Grade Dbl Track on Exist. Structure - Direct Fixation	RF	953	400		381,200		-	400	$ 381,200	20%	$ 457,440	15%	$ 68,616	$ 526,056
	10.01		Guideway: At-grade exclusive right-of-way					3,506,400		-		$ 3,506,400		$ 4,207,680		$ 631,152	$ 4,838,832
10	10.04	EL10	Temporary Work Platform, over water	RF	7,330	1,500		10,995,000		-	1,500	$ 10,995,000	30%	$ 14,293,500	20%	$ 2,858,700	$ 17,152,200
10	10.04	EL22	Precast Segmental Box Girder (Avg. Pier 20' Ht.)	RF	5,900	1,090	1,090	6,431,000	1,220	7,198,000	2,310	$ 13,629,000	20%	$ 16,354,800	15%	$ 2,453,220	$ 18,808,020
10	10.04	EL23	Precast Segmental Box Girder (Avg. Pier 30' Ht.)	RF	6,000	140		840,000		-	140	$ 840,000	20%	$ 1,008,000	15%	$ 151,200	$ 1,159,200
10	10.04	EL24	Precast Segmental Box Girder (Avg. Pier 40' Ht.)	RF	6,150	740		4,551,000		-	740	$ 4,551,000	20%	$ 5,461,200	15%	$ 819,180	$ 6,280,380
10	10.04	EL24a	Straddle Bent (Avg Ht + 40')	EA	397,300	2		794,600		-	2	$ 794,600	20%	$ 953,520	15%	$ 143,028	$ 1,096,548
10	10.04	EL25	Precast Segmental Box Girder (Avg. Pier 50' Ht.)	RF	6,270	240		1,504,800		-	240	$ 1,504,800	20%	$ 1,805,760	15%	$ 270,864	$ 2,076,624
10	10.04	EL26	Precast Segmental Box Girder (Avg. Pier 60' Ht.)	RF	6,400	120		768,000		-	120	$ 768,000	20%	$ 921,600	15%	$ 138,240	$ 1,059,840
10	10.04	EL27	Precast Segmental Box Girder (Avg. Pier 70' Ht.)	RF	6,520	900		5,868,000		-	900	$ 5,868,000	20%	$ 7,041,600	15%	$ 1,056,240	$ 8,097,840
10	10.04	EL34	Twin-Sgl. Precast Segmental Box Girder (Avg. Pier 40' Ht.)	RF	7,620	694	1,074	5,288,280	326	2,484,120	1,020	$ 7,772,400	20%	$ 9,326,880	15%	$ 1,399,032	$ 10,725,912
10	10.04	EL43	Precast Segmental Box Girder, Long Span (Avg. Pier 30' Ht.)	RF	8,050	820		6,601,000		-	820	$ 6,601,000	20%	$ 7,921,200	15%	$ 1,188,180	$ 9,109,380
10	10.04		Precast Segmental Box Girder, 240' Long Span (Avg. Pier 30' Ht.)	RF	13,600	1,500		20,400,000		-	1,500	$ 20,400,000	30%	$ 26,520,000	15%	$ 3,978,000	$ 30,498,000
10	10.04	EL46	Precast Segmental Box Girder, Long Span (Avg. Pier 60' Ht.)	RF	8,400	600		5,040,000		-	600	$ 5,040,000	20%	$ 6,048,000	15%	$ 907,200	$ 6,955,200
10	10.04	EL65	Elevated Guideway Adder for Mercer Slough	RF	2,170	700		1,519,000		-	700	$ 1,519,000	30%	$ 1,974,700	25%	$ 493,675	$ 2,468,375
	10.04		Guideway: Aerial structure					70,600,680		9,682,120		$ 80,282,800		$ 99,630,760		$ 15,856,759	$ 115,487,519
	10.05		Guideway: Built-up fill					-		-		$ -		$ -		$ -	$ -
	10.06		Guideway: Underground cut & cover					-		-		$ -		$ -		$ -	$ -
	10.07		Guideway: Underground tunnel					-		-		$ -		$ -		$ -	$ -
10	10.08	RF21	Retained Fill - Two Sides (Avg. 10' Height)	RF	3,140	600		1,884,000		-	600	$ 1,884,000	20%	$ 2,260,800	15%	$ 339,120	$ 2,599,920
10	10.08	RF30	Fill	CY	25	2,817		70,425		-	2,817	$ 70,425	20%	$ 84,510	15%	$ 12,677	$ 97,187
	10.08		Guideway: Retained cut or fill					1,954,425		-		$ 1,954,425		$ 2,345,310		$ 351,797	$ 2,697,107
10	10.09	TK21	Direct Fixation - Double Track	RF	997	7,244	7,624	7,222,268	1,546	1,541,362	8,790	$ 8,763,630	20%	$ 10,516,356	10%	$ 1,051,636	$ 11,567,992
	10.09		Track: Direct fixation					7,222,268		1,541,362		$ 8,763,630		$ 10,516,356		$ 1,051,636	$ 11,567,992
10	10.10	TK11	Embedded - Double Track	RF	1,210	100		121,000		-	100	$ 121,000	20%	$ 145,200	10%	$ 14,520	$ 159,720
	10.10		Track: Embedded					121,000		-		$ 121,000		$ 145,200		$ 14,520	$ 159,720
10	10.11	TK02	Ballasted - Double Track	RF	476	4,600		2,189,600		-	4,600	$ 2,189,600	20%	$ 2,627,520	10%	$ 262,752	$ 2,890,272
	10.11		Track: Ballasted					2,189,600		-		$ 2,189,600		$ 2,627,520		$ 262,752	$ 2,890,272
10	10.12	SP18B	Direct Fixation - Single Cross-over	EA	314,000	1		314,000		-	1	$ 314,000	20%	$ 376,800	10%	$ 37,680	$ 414,480
	10.12		Track: Special (switches, turnouts)					314,000		-		$ 314,000		$ 376,800		$ 37,680	$ 414,480
20	20.01	ST89	At-Grade - Bus Stop, Curb Bulb Platform - 1 Vehicle Platform	LS	45,300		3	-		-	-	$ -	20%	$ -	5%	$ -	$ -
20	20.01	ST18	At-Grd Foundation Adder @ Mercer Slough	LS	640,000	1		640,000		-	1	$ 640,000	25%	$ 800,000	20%	$ 160,000	$ 960,000
	20.01		At-grade station, stop, shelter, mall, terminal, platform					640,000		-		$ 640,000		$ 800,000		$ 160,000	$ 960,000
20	20.02	ST20	Aerial - 30' Center Platform - 4 Vehicle without Mezz.	LS	15,800,000			-		-	-	$ -	20%	$ -	15%	$ -	$ -
	20.02		Aerial station, stop, shelter, mall, terminal, platform					-		-		$ -		$ -		$ -	$ -
	20.03		Underground station, stop, shelter, mall, terminal, platform					-		-		$ -		$ -		$ -	$ -
	20.04		Other stations, landings, terminals: Intermodal, ferry, trolley, etc.					-		-		$ -		$ -		$ -	$ -
	20.06		Automobile parking multi-story structure					-		-		$ -		$ -		$ -	$ -
	20.07		Elevators, escalators					-		-		$ -		$ -		$ -	$ -
	30.03		Heavy Maintenance Facility					-		-		$ -		$ -		$ -	$ -
	30.05		Yard and Yard Track					-		-		$ -		$ -		$ -	$ -
40	40.01	DM05	Demolition Allow. - Existing Building, Moderate	EA	48,330			-	1	48,330	1	$ 48,330	25%	$ 60,413	25%	$ 15,103	$ 75,516
40	40.01	DM06	Demolition Allow. - Existing Building	SF	10	31,011		310,110	32,216	322,160	63,227	$ 632,270	25%	$ 790,338	25%	$ 197,584	$ 987,922
	40.01		Demolition, Clearing, Earthwork					310,110		370,490		$ 680,600		$ 850,750		$ 212,688	$ 1,063,438

Alternate B7

Sound Transit- B7 (excluding 118th station)

Option **3/22/2011**

Modified to break out station quantity

						0.97		12324										
						End A1 to 118th Ave SE Station			**118th Ave SE Station to End B7**									
						Begin		2000+00.00	Begin	2123+24.00								
						End		2119+44.00	End	2138+70.00			13,870					
						RF		11,944	RF	1,546	RF		13,490					
SCCRU	SCCPoint	Code	Desc	UOM	Composite Unit Cost	Qty	ST QTY	Subttl $	Qty	Subttl $	Total Quantity		Base Cost	Design Allowance (%)		Pre-Award Total	Allocated Contingency (%)		Subtotal Contingency		Total
40	40.02	UM01	Utility Modifications Allow. - Level 1	RF	187	97	100	18,123		-	97	$	18,123	25%	$	22,654	20%	$	4,531	$	27,185
40	40.02	UM11B	Storm Water Piping - 18" CPE Pipe (Buried)	LF	200	6,174	6,370	1,234,717	60	12,000	6,234	$	1,246,717	25%	$	1,558,397	20%	$	311,679	$	1,870,076
40	40.02	UM12B	Storm Water Detention Vault (0.6<Med<1.4)	AC-FT	749,000			-	1.00	749,000	1.00	$	749,000	25%	$	936,250	20%	$	187,250	$	1,123,500
40	40.02	UM13C	Storm Water Quality Vault (Large>1.4)	AC-FT	687,000			-	2	1,064,850	1.55	$	1,064,850	25%	$	1,331,063	20%	$	266,213	$	1,597,275
40	40.02	UM50	Raise 115kV OH power line crossing (assume no U/G)	EA	434,000			-	1	434,000	1	$	434,000	25%	$	542,500	20%	$	108,500	$	651,000
	40.02		Site Utilities, Utility Relocation					1,252,841		2,259,850		$	3,512,691		$	4,390,863		$	878,173	$	5,269,036
40	40.03	HM01	Hazardous Material Removal Allowance	RF	181	4,998	5,157	904,636		-	4,998	$	904,636	25%	$	1,130,795	50%	$	565,397	$	1,696,192
40	40.03	HM06	Hazardous Material Removal Allowance	LS	550,000	1	1	533,041		-	1	$	533,041	25%	$	666,302	50%	$	333,151	$	999,452
	40.03		Haz. mat'l, contam'd soil removal/mitigation, ground water treatments					1,437,677		-		$	1,437,677		$	1,797,096		$	898,548	$	2,695,645
40	40.04	EM01	Environmental Mitigation Allow. - Level 1	RF	63	1,527	1,576	96,227		-	1,527	$	96,227	25%	$	120,283	20%	$	24,057	$	144,340
40	40.04	EM03	Environmental Mitigation Allow. - Level 3	RF	249	3,650	3,766	908,820		-	3,650	$	908,820	25%	$	1,136,025	20%	$	227,205	$	1,363,230
40	40.04	EM10	Residential Noise Mitigation Allow.	RF	150	258	266	38,670		-	258	$	38,670	25%	$	48,337	20%	$	9,667	$	58,005
	40.04		Environmental mitigation, e.g. wetlands, historic/archeologic, parks					1,043,716		-		$	1,043,716		$	1,304,645		$	260,929	$	1,565,574
40	40.05	RW16	Retaining Wall - CIP (Avg 20')	RF	1,530	1,350		2,065,500		-	1,350	$	2,065,500	20%	$	2,478,600	10%	$	247,860	$	2,726,460
40	40.05	SW01	Sound Wall	RF	521	2,000		1,042,000		-	2,000	$	1,042,000	20%	$	1,250,400	10%	$	125,040	$	1,375,440
	40.05		Site structures including retaining walls, sound walls					3,107,500		-		$	3,107,500		$	3,729,000		$	372,900	$	4,101,900
40	40.06	SF02F	Construct / Replace 12' Bike Path, ACP	LF	92	11,569	11,937	1,064,312		-	11,569	$	1,064,312	20%	$	1,277,175	10%	$	127,717	$	1,404,892
40	40.06	LS02	Landscaping Allow. - Site	SF	3	94,397	97,400	283,190		-	94,397	$	283,190	20%	$	339,828	10%	$	33,983	$	373,811
40	40.06	LS10	Landscaping Allow. - Guideway	RF	87	3,489	3,600	303,543	1,170	101,790	4,659	$	405,333	20%	$	486,399	10%	$	48,640	$	535,039
	40.06		Pedestrian / bike access and accommodation, landscaping					1,651,045		101,790		$	1,752,835		$	2,103,402		$	210,340	$	2,313,742
40	40.07	RM41	Roadway Reconstruction Allow. - Single Precast Concrete Barrier	LF	79	1,200		94,800		-	1,200	$	94,800	20%	$	113,760	15%	$	17,064	$	130,824
40	40.07	RM_hov	Roadway Reconstruction Allow. - EN HOV Ramp	LS	9,134,000	1		9,134,000		-	1	$	9,134,000	20%	$	10,960,800	20%	$	2,192,160	$	13,152,960
40	40.07	SS01	Streetscaping Allow. - Light	RF	197	1,841	1,900	362,759		-	1,841	$	362,759	20%	$	435,311	15%	$	65,297	$	500,607
40	40.07	SS02	Streetscaping Allow. - Moderate	RF	423	4,652	4,800	1,967,794		-	4,652	$	1,967,794	20%	$	2,361,353	15%	$	354,203	$	2,715,556
40	40.07	SS03	Streetscaping Allow. - Heavy	RF	656	508	524	333,145	376	246,656	884	$	579,801	20%	$	695,761	15%	$	104,364	$	800,125
	40.07		Automobile, bus, van accessways including roads, parking lots					11,892,498		246,656		$	12,139,154		$	14,566,985		$	2,733,088	$	17,300,073
40	40.08	AR01	1% for Art (1% of Category 10 thru 50, excluding 10.06 & 10.07)	LS	1.00%	1		1,229,058		171,211	1	$	1,400,269	20%	$	1,680,323	15%	$	252,048	$	1,932,371
	40.08		Temporary Facilities and other Indirect Costs During Construction					1,229,058		171,211		$	1,400,269		$	1,680,323		$	252,048	$	1,932,371
50	50.01	TC02	Train Control - Double Track	RF	485	11,944	12,324	5,792,840	1,546	749,810	13,490	$	6,542,650	20%	$	7,851,180	15%	$	1,177,677	$	9,028,857
50	50.01	TC15	Train Control, Double Crossover	EA	1,170,000	1		1,170,000		-	1	$	1,170,000	20%	$	1,404,000	15%	$	210,600	$	1,614,600
50	50.01	TC20	Train Control, Single Crossover	EA	936,000	1		936,000		-	1	$	936,000	20%	$	1,123,200	15%	$	168,480	$	1,291,680
	50.01		Train control and signals					7,898,840		749,810		$	8,648,650		$	10,378,380		$	1,556,757	$	11,935,137
	50.02		Traffic signals and crossing protection					-		-		$	-		$	-		$	-	$	-
50	50.03	TP03	Traction Power, Substation	EA	1,430,000	1		1,430,000	1	1,430,000	2	$	2,860,000	20%	$	3,432,000	15%	$	514,800	$	3,946,800
	50.03		Traction power supply: substations					1,430,000		1,430,000		$	2,860,000		$	3,432,000		$	514,800	$	3,946,800
50	50.04	TP02	OCS System - Standard, Double Track	RF	180	11,944	12,324	2,149,920	1,546	278,280	13,490	$	2,428,200	20%	$	2,913,840	15%	$	437,076	$	3,350,916
	50.04		Traction power distribution: catenary and third rail					2,149,920		278,280		$	2,428,200		$	2,913,840		$	437,076	$	3,350,916
50	50.05	CM02	Communication, Line - Double	RF	274	11,944	12,324	3,272,656	1,546	423,604	13,490	$	3,696,260	20%	$	4,435,512	15%	$	665,327	$	5,100,839
50	50.05	CM05	Communication, Station	EA	624,000	1		624,000		-	1	$	624,000	20%	$	748,800	15%	$	112,320	$	861,120
50	50.05	CM20	Passenger Information System, Fiber Optic	LF	24	11,944	12,324	286,656	1,546	37,104	13,490	$	323,760	20%	$	388,512	15%	$	58,277	$	446,789
	50.05		Communications					4,183,312		460,708		$	4,644,020		$	5,572,824		$	835,924	$	6,408,748
50	50.06	FC01	Fare Collection - 1 Entrance	EA	259,000			-		-	-	$	-	20%	$	-	15%	$	-	$	-
	50.06		Fare collection system and equipment					-		-	50.06 Total	$	-		$	-		$	-	$	-
60	60.01	ROW	Right of Way	LS	-			-		-	1			0%	$	-	40%	$	-	$	-
	60.01		Right of Way					-		-		$	-		$	-		$	-	$	-
Grand Total						**$**		**124,134,890**	**$**	**17,292,277**	**$**		**141,427,167**	**$**		**173,369,735**	**$**		**27,529,565**	**$**	**200,899,300**

Segment C

Alternate 9T

Option B7 Connection

ST - end of B to portal (B7-C9T)

		PORTAL TO BTC	
		0.54	
		Portal start to start of BTC	
	$ 1,918	Begin	3026+07.00
		End	3039+50.00
		RF	1,343

Total length of ST C9T 8,861 RF

0.25 MI
1,343 RF

SCCRU	SCCPoint	Code	Desc	UOM	Composite Unit Cost	Qty	Subttl $	Total Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total
	10.04 Total		Guideway: Aerial structure				$ -	10.04	$ -		-		$ -	$ -
	10.05 Total		Guideway: Built-up fill					10.05	$ -		-		$ -	$ -
10	10.06	CC04	Cut and Cover Box (Avg. 45' Depth)	RF	$ 35,500	156	$ 5,534,127	156	$ 5,534,127	20%	6,640,952	20%	$ 1,328,190	$ 7,969,142
10	10.06	CC05	Cut and Cover Box (Avg. 55' Depth)	RF	$ 39,700	1,115	$ 44,250,408	1,115	$ 44,250,408	20%	53,100,490	20%	$ 10,620,098	$ 63,720,588
	10.06 Total		Guideway: Underground cut & cover				$ 49,784,535	10.06	$ 49,784,535		59,741,441		$ 11,948,288	$ 71,689,730
10	10.07	VS05	Fan / Vent Shaft (18' O.D.)	VF	$ 5,830	200	1,166,000	200	$ 1,166,000	20%	1,399,200	20%	$ 279,840	$ 1,679,040
10	10.07	VS05B	Ventilation Shaft Bypass Area	SF	$ 624		-	-	$ -	20%	-	20%	$ -	$ -
10	10.07	VS21C	Tunnel Jet Fans, C9T-B3- W Portal	LS	$ 452,000	1	452,000	1	$ 452,000	25%	565,000	20%	$ 113,000	$ 678,000
10	10.07	VS21D	Tunnel Jet Fans, C9T-B3- E Portal	LS	$ 208,000		-	-	$ -	25%	-	20%	$ -	$ -
10	10.07	VS32	Station Van-Axial Fans, C9T-B3	LS	$ 1,320,000		-	-	$ -	25%	-	20%	$ -	$ -
10	10.07	VS40	Underground Tunnel Vent Fan Room	SF	$ 420		-	-	$ -	25%	-	25%	$ -	$ -
10	10.07	VS41	Emergency Vent Structure Building	SF	$ 590	1,500	885,000	1,500	$ 885,000	25%	1,106,250	25%	$ 276,563	$ 1,382,813
	10.07 Total		Guideway: Underground tunnel				$ 2,503,000	10.07	$ 2,503,000		3,070,450		$ 669,403	$ 3,739,853
	10.08 Total		Guideway: Retained cut or fill				$ -	10.08	$ -		-		$ -	$ -
10	10.09	TK21	Direct Fixation - Double Track	RF	$ 997	1,343	$ 1,338,971	1,343	$ 1,338,971	20%	1,606,765	10%	$ 160,677	$ 1,767,442
	10.09 Total		Track: Direct fixation				$ 1,338,971	10.09	$ 1,338,971		1,606,765		$ 160,677	$ 1,767,442
	10.10 Total		Track: Embedded					10.10	$ -		-		$ -	$ -
	10.11 Total		Track: Ballasted					10.11	$ -		-		$ -	$ -
	10.12 Total		Track: Special (switches, turnouts)					10.12	$ -		-		$ -	$ -
	20.01 Total		At-grade station, stop, shelter, mall, terminal, platform					20.01	$ -		-		$ -	$ -
	20.02 Total		Aerial station, stop, shelter, mall, terminal, platform					20.02	$ -		-		$ -	$ -
	20.03 Total		Underground station, stop, shelter, mall, terminal, platform					20.03	$ -		-		$ -	$ -
	20.04 Total		Other stations, landings, terminals: Intermodal, ferry, trolley, etc.					20.04	$ -		-		$ -	$ -
	20.06 Total		Automobile parking multi-story structure					20.06	$ -		-		$ -	$ -
	20.07 Total		Elevators, escalators					20.07	$ -		-		$ -	$ -
	30.03 Total		Heavy Maintenance Facility					30.03	$ -		-		$ -	$ -
	30.05 Total		Yard and Yard Track					30.05	$ -		-		$ -	$ -
40	40.01	DM05	Demolition Allow. - Existing Building, Moderate	EA	$ 48,330	4	$ 193,320	4	$ 193,320	25%	241,650	25%	$ 60,413	$ 302,063
40	40.01	DM45	Demolition Allow - Sidewalk	SF	$ 4	12,730	$ 50,920	12,730	$ 50,920	25%	63,650	20%	$ 12,730	$ 76,380
40	40.01	DM50	Demolition Allow - HMA Pavement	SF	$ 2	49,395	$ 98,790	49,395	$ 98,790	25%	123,488	20%	$ 24,698	$ 148,186

SOUNDTRANSIT

Segment **C**

Alternate **9T**

Option **B7 Connection**

ST - end of B to portal (B7-C9T)

0.54

Portal start to start of BTC

Begin 3026+07.00
End 3039+50.00 0.25 MI
RF 1,343 1,343 RF

Total length of ST C9T 8,861 RF

$ 1,918

SCCRU	SCCPoint	Code	Desc	UOM	Composite Unit Cost	Qty	Subttl $	Total Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total
40.01 Total			Demolition, Clearing, Earthwork				$ 343,030	40.01	$ 343,030		428,788		$ 97,840	$ 526,628
40	40.02	UM03	Utility Modifications Allow. - Level 3 (watr, san swr, gas)	RF	$ 771	1,133	$ 873,650	1,133	$ 873,650	25%	1,092,063	20%	$ 218,413	$ 1,310,476
40	40.02	UM12A	Storm Water Detention Vault (Small<0.6)	AC-FT	$ 919,000	0.11	$ 99,413	0.11	$ 99,413	25%	124,267	20%	$ 24,853	$ 149,120
40	40.02	UM12B	Storm Water Detention Vault (0.6<Medium<1.4)	AC-FT	$ 749,000	0.32	$ 243,071	0.32	$ 243,071	25%	303,838	20%	$ 60,768	$ 364,606
40	40.02	UM13A	Storm Water Quality Vault (Small<0.6)	AC-FT	$ 1,000,000	0.05	$ 54,088	0.05	$ 54,088	25%	67,610	20%	$ 13,522	$ 81,132
40	40.02	UM18B	Tunnel Pump Station	EA	$ 98,100	1	$ 98,100	1	$ 98,100	25%	122,625	20%	$ 24,525	$ 147,150
40	40.02	UM30	Metro Trunk Sewer 21"-30" (12"&16" force mains along NE 4th)	RF	$ 440	433	$ 190,389	433	$ 190,389	25%	237,986	20%	$ 47,597	$ 285,584
40	40.02	UM30A	Spec Structure for Metro Trunk Sewer 21"-30" (12"&16" mains over tunnel at NE 4th)	LS	$ 80,000	0.54	$ 43,270	1	$ 43,270	20%	51,924	20%	$ 10,385	$ 62,309
40	40.02	UM37	Relocate 8" Gas Line-Intermediate Pressure, High Volume, Poly	LF	$ 1,000	433	$ 432,702	433	$ 432,702	35%	584,148	20%	$ 116,830	$ 700,978
40	40.02	UM38	Relocate 12" Gas Line-12" High Pressure, Steel	LF	$ 1,000	433	$ 432,702	433	$ 432,702	35%	584,148	20%	$ 116,830	$ 700,978
40	40.02	UM55c	Power distribution lines, buried - Level 2	LF	$ 400	325	$ 129,811	325	$ 129,811	35%	175,244	15%	$ 26,287	$ 201,531
40	40.02	UM56	Relocate major power vaults	EA	$ 55,000	1.62	$ 89,245	2	$ 89,245	20%	107,094	15%	$ 16,064	$ 123,158
40	40.02	UM58c	Comm, Fiber Optics, copper cable Relocate - Level 3	RF	$ 420	1,301	$ 546,341	1,301	$ 546,341	30%	710,243	15%	$ 106,536	$ 816,780
40	40.02	UM59	Relocate 360 Networks Duct Bank (Fiber optics cables in 4-6" PVC, 4-2" PVC, 40-1.25" PVC, 6-4" PVC)	RF	$ 1,200	1,082	$ 1,298,107	1,082	$ 1,298,107	35%	1,752,445	25%	$ 438,111	$ 2,190,556
40.02 Total			Site Utilities, Utility Relocation				$ 4,530,890	40.02	$ 4,530,890		5,913,636		$ 1,220,720	$ 7,134,356
40.03 Total			Haz. mat'l, contam'd soil removal/mitigation, ground water treatments					40.03	$ -		-		$ -	$ -
40.04 Total			Environmental mitigation, e.g. wetlands, historic/archeologic, parks					40.04	$ -		-		$ -	$ -
40.05 Total			Site structures including retaining walls, sound walls					40.05	$ -		-		$ -	$ -
40	40.06	LS10	Landscaping Allow. - Guideway	RF	$ 87	192	$ 16,705	192	$ 16,705	20%	20,046	10%	$ 2,005	$ 22,051
40.06 Total			Pedestrian / bike access and accommodation, landscaping				$ 16,705	40.06	$ 16,705		20,046		$ 2,005	$ 22,051
40	40.07	RM37b	Roadway Reconstruction Allow. - 4 Travel Lanes, Asphalt	RF	$ 979	1,027	$ 1,005,433	1,027	$ 1,005,433	20%	1,206,519	15%	$ 180,978	$ 1,387,497
40	40.07	RM37C	Roadway Reconstruction Allow. - 5 Travel Lanes, Asphalt	RF	$ 1,120	81	$ 90,867	81	$ 90,867	20%	109,041	15%	$ 16,356	$ 125,397
40	40.07	RM40	Roadway Reconstruction Allow. - Curb & Sidewalk	RF	$ 270	811	$ 219,056	811	$ 219,056	20%	262,867	15%	$ 39,430	$ 302,297
40	40.07	SS03	Streetscaping Allow. - Heavy	RF	$ 656	541	$ 354,816	541	$ 354,816	20%	425,779	15%	$ 63,867	$ 489,646

Segment **C**

Alternate **9T**

Option **B7 Connection**

ST - end of B to portal (B7-C9T)

0.54		Total length of ST C9T	8,861 RF
Portal start to start of BTC			
$ 1,918	Begin 3026+07.00		
	End 3039+50.00	0.25	MI
	RF 1,343	1,343	RF

SCCRU	SCCPoint	Code	Desc	UOM	Composite Unit Cost	Qty	Subttl $	Total Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total
40.07 Total			Automobile, bus, van accessways including roads, parking lots				$ 1,670,172	40.07 Total	$ 1,670,172		2,004,206		$ 300,631	$ 2,304,837
40	40.08	AR01	1% for Art (1% of Category 10 thru 50, excluding 10.06 & 10.07)	LS	1%	1%	$ 95,033	1	$ 95,033	20%	114,040	15%	$ 17,106	$ 131,146
40.08 Total			Temporary Facilities and other Indirect Costs During Construction				$ 95,033	40.08 Total	$ 95,033		114,040		$ 17,106	$ 131,146
50	50.01	TC02	Train Control - Double Track	RF	$ 485	1,343	$ 651,355	1,343	$ 651,355	20%	781,626	15%	$ 117,244	$ 898,870
50.01 Total			Train control and signals				$ 651,355	50.01 Total	$ 651,355		781,626		$ 117,244	$ 898,870
50.02 Total			Traffic signals and crossing protection					50.02 Total	$ -		-		$ -	$ -
50.03 Total			Traction power supply: substations					50.03 Total	$ -		-		$ -	$ -
50	50.04	TP02	OCS System - Standard, Double Track	RF	$ 180	1,343	$ 241,740	1,343	$ 241,740	20%	290,088	15%	$ 43,513	$ 333,601
40	50.04	TP02S	Train Control, Double Track, Street	RF	$ 231	1,343	$ 310,233	1,343	$ 310,233	20%	372,280	15%	$ 55,842	$ 428,122
50.04 Total			Traction power distribution: catenary and third rail				$ 551,973	50.04 Total	$ 551,973		662,368		$ 99,355	$ 761,723
50	50.05	CM02	Communication, Line - Double	RF	$ 274	1,343	$ 367,982	1,343	$ 367,982	20%	441,578	15%	$ 66,237	$ 507,815
50	50.05	CM20	Passenger Information System, Fiber Optic	LF	$ 24	1,343	$ 32,232	1,343	$ 32,232	20%	38,678	15%	$ 5,802	$ 44,480
50.05 Total			Communications				$ 400,214	50.05 Total	$ 400,214		480,257		$ 72,039	$ 552,295
50.06 Total			Fare collection system and equipment					50.06 Total	$ -		-		$ -	$ -
50.07 Total			Central Control					50.07 Total	$ -		-		$ -	$ -
60.01 Total			Right of Way					60.01 Total	$ -		-		$ -	$ -
Grand Total						$ 61,885,877		**$ 61,885,877**		**$ 74,823,622**		**$ 14,705,307**		**$ 89,528,929**

SOUNDTRANSIT

Segment **C**

Alternate **9T**

Option **B7 Connection**

ST - end of B to portal (B7-C9T)

	0.54		
	Portal start to start of BTC		
$ 1,918	Begin	3026+07.00	
	End	3039+50.00	0.25 MI
	RF	1,343	1,343 RF

Total length of ST C9T 8,861 RF

SCCRU	SCCPoint	Code	Desc	UOM	Composite Unit Cost	Qty	Subttl $	Total Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total

SOUNDTRANSIT

Segment C

Alternate 9T

Option B7 Connection

ST - end of B to portal (B7-C9T)

	B TO PORTAL		
	0.80	0.31	760
	Start C9T-B3 to start of East Main Station	End of East Main to Start of Portal	
	Begin 2999+29.00	Begin 3018+47.00	
	End 3014+67.00	End 3026+07.00	0.44 MI
	RF 1,538	RF 760	2,298 RF

SCCRU	SCCPoint	Code	Desc	UOM	Composite Unit Cost	Qty	Subttl $	Qty	Subttl $	Total Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total
10	10.04	EL23	Precast Segmental Box Girder (Avg. Pier 30' Ht.)	RF	$ 6,000		$ -	110	$ 660,000	110	$ 660,000	20%	792,000	15%	$ 118,800	$ 910,800
10	10.04	EL24	Precast Segmental Box Girder (Avg. Pier 40' Ht.)	RF	$ 6,150		$ -	278	$ 1,709,700	278	$ 1,709,700	20%	2,051,640	15%	$ 307,746	$ 2,359,386
10	10.04	EL25	Precast Segmental Box Girder (Avg. Pier 50' Ht.)	RF	$ 6,270	1,538	$ 9,643,260		$ -	1,538	$ 9,643,260	20%	11,571,912	15%	$ 1,735,787	$ 13,307,699
	10.04 Total		Guideway: Aerial structure				$ 9,643,260		$ 2,369,700	10.04 Total	$ 12,012,960		14,415,552		$ 2,162,333	$ 16,577,885
	10.05 Total		Guideway: Built-up fill				$ -		$ -	10.05 Total	$ -		-		$ -	$ -
	10.06 Total		Guideway: Underground cut & cover				$ -		$ -	10.06 Total	$ -		-		$ -	$ -
	10.07 Total		Guideway: Underground tunnel				$ -		$ -	10.07 Total	$ -		-		$ -	$ -
10	10.08	RC11	Retained Cut - Two Side (Avg. 10' Depth)	RF	$ 3,150		$ -	92	$ 289,800	92	$ 289,800	20%	347,760	15%	$ 52,164	$ 399,924
10	10.08	RC12	Retained Cut - Two Side (Avg. 20' Depth)	RF	$ 4,770		$ -	85	$ 405,450	85	$ 405,450	20%	486,540	15%	$ 72,981	$ 559,521
10	10.08	RC13	Retained Cut - Two Side (Avg. 30' Depth)	RF	$ 6,960		$ -	100	$ 696,000	100	$ 696,000	20%	835,200	15%	$ 125,280	$ 960,480
10	10.08	RC30	Excavation	CY	$ 32		$ -	6,715	$ 214,880	6,715	$ 214,880	20%	257,856	15%	$ 38,678	$ 296,534
10	10.08	RF21	Retained Fill - Two Sides (Avg. 10' Height)	RF	$ 3,140		$ -	100	$ 314,000	100	$ 314,000	20%	376,800	15%	$ 56,520	$ 433,320
10	10.08	RF22	Retained Fill - Two Sides (Avg. 20' Height)	RF	$ 4,760		$ -	88	$ 418,880	88	$ 418,880	20%	502,656	15%	$ 75,398	$ 578,054
10	10.08	RF30	Fill	CY	$ 25		$ -	2,777	$ 69,425	2,777	$ 69,425	20%	83,310	15%	$ 12,497	$ 95,807
	10.08 Total		Guideway: Retained cut or fill				$ -		$ 2,408,435	10.08 Total	$ 2,408,435		2,890,122		$ 433,518	$ 3,323,640
10	10.09	TK21	Direct Fixation - Double Track	RF	$ 997	1,538	$ 1,533,386	760	$ 757,720	2,298	$ 2,291,106	20%	2,749,327	10%	$ 274,933	$ 3,024,260
	10.09 Total		Track: Direct fixation				$ 1,533,386		$ 757,720	10.09 Total	$ 2,291,106		2,749,327		$ 274,933	$ 3,024,260
	10.10 Total		Track: Embedded				$ -		$ -	10.10 Total	$ -		-		$ -	$ -
	10.11 Total		Track: Ballasted				$ -		$ -	10.11 Total	$ -		-		$ -	$ -
10	10.12	SP18B	Direct Fixation - Single Cross-over	EA	$ 314,000	2	$ 628,000		$ -	2	$ 628,000	20%	753,600	10%	$ 75,360	$ 828,960
	10.12 Total		Track: Special (switches, turnouts)				$ 628,000		$ -	10.12 Total	$ 628,000		753,600		$ 75,360	$ 828,960
20	20.01	ST89	At-Grade - Bus Stop, Curb Bulb Platform - 1 Vehicle Platform	EA	$ 45,300		$ -		$ -	-	$ -	20%	-	5%	$ -	$ -
	20.01 Total		At-grade station, stop, shelter, mall, terminal, platform				$ -		$ -	20.01 Total	$ -		-		$ -	$ -
	20.02 Total		Aerial station, stop, shelter, mall, terminal, platform				$ -		$ -	20.02 Total	$ -		-		$ -	$ -
	20.03 Total		Underground station, stop, shelter, mall, terminal, platform				$ -		$ -	20.03 Total	$ -		-		$ -	$ -
	20.04 Total		Other stations, landings, terminals: Intermodal, ferry, trolley, etc.				$ -		$ -	20.04 Total	$ -		-		$ -	$ -
	20.06 Total		Automobile parking multi-story structure				$ -		$ -	20.06 Total	$ -		-		$ -	$ -
	20.07 Total		Elevators, escalators				$ -		$ -	20.07 Total	$ -		-		$ -	$ -
	30.03 Total		Heavy Maintenance Facility				$ -		$ -	30.03 Total	$ -		-		$ -	$ -
	30.05 Total		Yard and Yard Track				$ -		$ -	30.05 Total	$ -		-		$ -	$ -
40	40.01	DM05	Demolition Allow. - Existing Building, Moderate	EA	$ 48,330		$ -	3	$ 144,990	3	$ 144,990	25%	181,238	25%	$ 45,309	$ 226,547
40	40.01	DM45	Demolition Allow - Sidewalk	SF	$ 4		$ -	5,615	$ 22,460	5,615	$ 22,460	25%	28,075	20%	$ 5,615	$ 33,690
40	40.01	DM50	Demolition Allow - HMA Pavement	SF	$ 2		$ -	21,788	$ 43,576	21,788	$ 43,576	25%	54,469	20%	$ 10,894	$ 65,363
	40.01 Total		Demolition, Clearing, Earthwork				$ -		$ 211,026	40.01 Total	$ 211,026		263,782		$ 61,818	$ 325,601

SOUNDTRANSIT

Segment C

Alternate 9T

Option B7 Connection

ST - end of B to portal (B7-C9T)

						0.80			0.31		760							
						Start C9T-B3 to start of East Main Station			**End of East Main to Start of Portal**									
						Begin	2999+29.00		Begin	3018+47.00								
						End	3014+67.00		End	3026+07.00		0.44	MI					
						RF		1,538	RF		760	2,298	RF					
SCCRU	SCCPoint	Code	Desc	UOM	Composite Unit Cost	Qty	Subttl $		Qty	Subttl $		Total Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total
40	40.02	UM03	Utility Modifications Allow. - Level 3 (watr, san swr, gas)	RF	$ 771	-	$ -		641	$ 494,396		641	$ 494,396	25%	617,995	20%	$ 123,599	$ 741,595
40	40.02	UM11k	Relocate Storm Water Piping - 24" RCP (Buried)	LF	$ 300	128	$ 38,490			$ -		128	$ 38,490	25%	48,113	20%	$ 9,623	$ 57,735
40	40.02	UM11L	Extend Storm Water Culvert - 72" CMP	LF	$ 700	64	$ 44,905			$ -		64	$ 44,905	25%	56,131	20%	$ 11,226	$ 67,358
40	40.02	UM12A	Storm Water Detention Vault (Small<0.6)	AC-FT	$ 919,000	0.24	$ 221,077		0.06	$ 56,258		0	$ 277,335	25%	346,669	20%	$ 69,334	$ 416,003
40	40.02	UM12B	Storm Water Detention Vault (0.6<Medium<1.4)	AC-FT	$ 749,000		$ -		0.18	$ 137,553		0	$ 137,553	25%	171,941	20%	$ 34,388	$ 206,329
40	40.02	UM13A	Storm Water Quality Vault (Small<0.6)	AC-FT	$ 1,000,000		$ -		0.03	$ 30,608		0	$ 30,608	25%	38,260	20%	$ 7,652	$ 45,912
40	40.02	UM30	Metro Trunk Sewer 21"-30" (12"&16" force mains along NE 4th)	RF	$ 440		$ -		245	$ 107,741		245	$ 107,741	25%	134,676	20%	$ 26,935	$ 161,611
40	40.02	UM30A	Spec Structure for Metro Trunk Sewer 21"-30" (12"&16" mains over tunn	LS	$ 80,000		$ -		0.31	$ 24,487		0	$ 24,487	20%	29,384	20%	$ 5,877	$ 35,261
40	40.02	UM37	Relocate 8" Gas Line-Intermediate Pressure, High Volume, Poly	LF	$ 1,000		$ -		245	$ 244,865		245	$ 244,865	35%	330,568	20%	$ 66,114	$ 396,681
40	40.02	UM38	Relocate 12" Gas Line-12" High Pressure, Steel	LF	$ 1,000		$ -		245	$ 244,865		245	$ 244,865	35%	330,568	20%	$ 66,114	$ 396,681
40	40.02	UM55c	Power distribution lines, buried - Level 2	LF	$ 400	561	$ 224,526		184	$ 73,460		745	$ 297,985	35%	402,280	15%	$ 60,342	$ 462,622
40	40.02	UM56	Relocate major power vaults	EA	$ 55,000		$ -		0.92	$ 50,503		1	$ 50,503	20%	60,604	15%	$ 9,091	$ 69,695
40	40.02	UM58c	Comm, Fiber Optics, copper cable Relocate - Level 3	RF	$ 420	1,507	$ 632,825		736	$ 309,173		2,243	$ 941,998	30%	1,224,597	15%	$ 183,690	$ 1,408,287
40	40.02	UM59	Relocate 360 Networks Duct Bank (Fiber optics cables in 4-6" PVC, 4-2" PVC, 40-1.25" PVC, 6-4" PVC)	RF	$ 1,200		$ -		612	$ 734,595		612	$ 734,595	35%	991,704	25%	$ 247,926	$ 1,239,629
40	40.02	UM90	Sturtevant Creek Development	LF	$ 1,000	400	$ 400,000			$ -		400	$ 400,000	25%	500,000	15%	$ 75,000	$ 575,000
40	40.02	UM91	Sturtevant Creek Relocation-Cut	CY	$ 32	865	$ 27,680			$ -		865	$ 27,680	25%	34,600	20%	$ 6,920	$ 41,520
40	40.02	UM92	Sturtevant Creek Relocation-Fill	CY	$ 25	865	$ 21,625			$ -		865	$ 21,625	25%	27,031	20%	$ 5,406	$ 32,438
40.02 Total			Site Utilities, Utility Relocation				$ 1,611,128			$ 2,508,504		40.02	$ 4,119,632		5,345,121		$ 1,009,235	$ 6,354,357
40	40.03	HM06	Hazardous Material Removal Allowance	LS	$ 70,000	0.80	$ 56,131			$ -		0.80	$ 56,131	25%	70,164	50%	$ 35,082	$ 105,246
40.03 Total			Haz. mat'l, contam'd soil removal/mitigation, ground water treatments				$ 56,131			$ -		40.03	$ 56,131		70,164		$ 35,082	$ 105,246
40	40.04	EM02	Environmental Mitigation Allow. - Level 2	RF	$ 150	353	$ 52,924			$ -		353	$ 52,924	25%	66,155	20%	$ 13,231	$ 79,386
40.04 Total			Environmental mitigation, e.g. wetlands, historic/archeologic, parks				$ 52,924			$ -		40.04	$ 52,924		66,155		$ 13,231	$ 79,386
40.05 Total			Site structures including retaining walls, sound walls				$ -			$ -		40.05	$ -		-		$ -	$ -
40	40.06	LS10	Landscaping Allow. - Guideway	RF	$ 87	1,362	$ 118,458		109	$ 9,453		1,470	$ 127,911	20%	153,494	10%	$ 15,349	$ 168,843
40.06 Total			Pedestrian / bike access and accommodation, landscaping				$ 118,458			$ 9,453		40.06	$ 127,911		153,494		$ 15,349	$ 168,843
40	40.07	RM37b	Roadway Reconstruction Allow. - 4 Travel Lanes, Asphalt	RF	$ 979		$ -		453	$ 443,487		453	$ 443,487	20%	532,185	15%	$ 79,828	$ 612,013
40	40.06	RM37C	Roadway Reconstruction Allow. - 5 Travel Lanes, Asphalt	RF	$ 1,120		$ -		46	$ 51,422		46	$ 51,422	20%	61,706	15%	$ 9,256	$ 70,962
40	40.07	RM40	Roadway Reconstruction Allow. - Curb & Sidewalk	RF	$ 270		$ -		459	$ 123,963		459	$ 123,963	20%	148,756	15%	$ 22,313	$ 171,069
40	40.07	SS03	Streetscaping Allow. - Heavy	RF	$ 656		$ -		306	$ 200,789		306	$ 200,789	20%	240,947	15%	$ 36,142	$ 277,089
40	40.07	SF07	Emergency/Maintenance Corridor Paved	SF	$ 19	13,045	$ 247,855			$ -		13,045	$ 247,855	20%	297,426	15%	$ 44,614	$ 342,040

Segment **C**

Alternate **9T**

Option **B7 Connection**

ST - end of B to portal (B7-C9T)

						0.80		0.31	760								
						Start C9T-B3 to start of East Main Station		**End of East Main to Start of Portal**									
						Begin	2999+29.00	Begin	3018+47.00								
						End	3014+67.00	End	3026+07.00	0.44	MI						
						RF	1,538	RF	760	2,298	RF						
SCCRU	SCCPoint	Code	Desc	UOM	Composite Unit Cost	Qty	Subttl $	Qty	Subttl $	Total Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total
40.07 Total			Automobile, bus, van accessways including roads, parking lots				$ 247,855		$ 819,661	40.07	$ 1,067,516		1,281,020		$ 192,153	$ 1,473,173
40	40.08	AR01	1% for Art (1% of Category 10 thru 50, excluding 10.06 & 10.07)	LS	1%		$ 175,995		$ 99,919	1	$ 275,915	20%	331,097	15%	$ 49,665	$ 380,762
40.08 Total			Temporary Facilities and other Indirect Costs During Construction				$ 175,995		$ 99,919	40.08	$ 275,915		331,097		$ 49,665	$ 380,762
50	50.01	TC02	Train Control - Double Track	RF	$ 485	1,538	$ 745,930	760	$ 368,600	2,298	$ 1,114,530	20%	1,337,436	15%	$ 200,615	$ 1,538,051
50	50.01	TC20	Train Control, Single Crossover	EA	$ 936,000	2	$ 1,872,000		$ -	2	$ 1,872,000	20%	2,246,400	15%	$ 336,960	$ 2,583,360
50.01 Total			Train control and signals				$ 2,617,930		$ 368,600	50.01	$ 2,986,530		3,583,836		$ 537,575	$ 4,121,411
50.02 Total			Traffic signals and crossing protection				$ -		$ -	50.02	$ -		-		$ -	$ -
50	50.03	TP03	Traction Power, Substation	EA	$ 1,430,000		$ -		$ -	-	$ -	20%	-	15%	$ -	$ -
50.03 Total			Traction power supply: substations				$ -		$ -	50.03	$ -		-		$ -	$ -
50	50.04	TP02	OCS System - Standard, Double Track	RF	$ 180	1,538	$ 276,840	760	$ 136,800	2,298	$ 413,640	20%	496,368	15%	$ 74,455	$ 570,823
40	50.04	TP02S	Train Control, Double Track, Street	RF	$ 231	1,538	$ 355,278	760	$ 175,560	2,298	$ 530,838	20%	637,006	15%	$ 95,551	$ 732,556
50.04 Total			Traction power distribution: catenary and third rail				$ 632,118		$ 312,360	50.04	$ 944,478		1,133,374		$ 170,006	$ 1,303,380
50	50.05	CM02	Communication, Line - Double	RF	$ 274	1,538	$ 421,412	760	$ 208,240	2,298	$ 629,652	20%	755,582	15%	$ 113,337	$ 868,920
50	50.05	CM20	Passenger Information System, Fiber Optic	LF	$ 24	1,538	$ 36,912	760	$ 18,240	2,298	$ 55,152	20%	66,182	15%	$ 9,927	$ 76,110
50.05 Total			Communications				$ 458,324		$ 226,480	50.05	$ 684,804		821,765		$ 123,265	$ 945,030
50.06 Total			Fare collection system and equipment				$ -		$ -	50.06	$ -		-		$ -	$ -
50	50.07	CC010	Systems Central Control Software & Integration Allowance	EA	$ 500,000	1	$ 500,000	1	$ 500,000	2	$ 1,000,000	20%	1,200,000	15%	$ 180,000	$ 1,380,000
50.07 Total			Central Control				$ 500,000		$ 500,000	50.07	$ 1,000,000		1,200,000		$ 180,000	$ 1,380,000
60	60.01	ROW	Right of Way	LS			$ -		$ -	-	$ -	0%	-	40%	$ -	$ -
60.01 Total			Right of Way				$ -		$ -	60.01	$ -		-		$ -	$ -
Grand Total						**$ 18,275,510**		**$ 10,591,858**		**$ 28,867,368**		**$ 35,058,409**		**$ 5,333,524**		**$ 40,391,933**

Segment C

Alternate 9T

Option B7 Connection

ST - end of B to portal (B7-C9T)

Extrapolation factors 0.20 380

EM Station

Begin 3014+67.00
End 3018+47.00 0.07 MI
RF 380 380 RF

SCCRU	SCCPoint	Code	Desc	UOM	Composite Unit Cost	Qty	Subttl $	Total Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total
10	10.04	EL25	Precast Segmental Box Girder (Avg. Pier 50' Ht.)	RF	$ 6,270	380	$ 2,382,600	380	$ 2,382,600	20%	2,859,120	15%	$ 428,868	$ 3,287,988
	10.04 Total		Guideway: Aerial structure				$ 2,382,600	10.04 Total	$ 2,382,600		2,859,120		$ 428,868	$ 3,287,988
	10.05 Total		Guideway: Built-up fill					10.05 Total	$ -		-		$ -	$ -
	10.06 Total		Guideway: Underground cut & cover					10.06 Total	$ -		-		$ -	$ -
	10.07 Total		Guideway: Underground tunnel					10.07 Total	$ -		-		$ -	$ -
	10.08 Total		Guideway: Retained cut or fill					10.08 Total	$ -		-		$ -	$ -
10	10.09	TK21	Direct Fixation - Double Track	RF	$ 997	380	$ 378,860	380	$ 378,860	20%	454,632	10%	$ 45,463	$ 500,095
	10.09 Total		Track: Direct fixation				$ 378,860	10.09 Total	$ 378,860		454,632		$ 45,463	$ 500,095
	10.10 Total		Track: Embedded					10.10 Total	$ -		-		$ -	$ -
	10.11 Total		Track: Ballasted					10.11 Total	$ -		-		$ -	$ -
	10.12 Total		Track: Special (switches, turnouts)					10.12 Total	$ -		-		$ -	$ -
20	20.01	ST89	At-Grade - Bus Stop, Curb Bulb Platform - 1 Vehicle Platform	EA	$ 45,300	5	$ 226,500	5	$ 226,500	20%	271,800	5%	$ 13,590	$ 285,390
	20.01 Total		At-grade station, stop, shelter, mall, terminal, platform				$ 226,500	20.01 Total	$ 226,500		271,800		$ 13,590	$ 285,390
20	20.02	ST24	Aerial - 15' Side Platforms - 4 Vehicle with Mezz.	LS	$ 23,000,000	1	$ 23,000,000	1	$ 23,000,000	20%	27,600,000	15%	$ 4,140,000	$ 31,740,000
	20.02 Total		Aerial station, stop, shelter, mall, terminal, platform				$ 23,000,000	20.02 Total	$ 23,000,000		27,600,000		$ 4,140,000	$ 31,740,000
	20.03 Total		Underground station, stop, shelter, mall, terminal, platform					20.03 Total	$ -		-		$ -	$ -
	20.04 Total		Other stations, landings, terminals: Intermodal, ferry, trolley, etc.					20.04 Total	$ -		-		$ -	$ -
	20.06 Total		Automobile parking multi-story structure					20.06 Total	$ -		-		$ -	$ -
20	20.07	PA31	Pedestrian Vertical Access - Elevator, 40ft.	EA	$ 274,000	2	$ 548,000	2	$ 548,000	20%	657,600	10%	$ 65,760	$ 723,360
20	20.07	PA36	Pedestrian Vertical Access - Escalator, 40ft.	EA	$ 331,000	1	$ 331,000	1	$ 331,000	20%	397,200	10%	$ 39,720	$ 436,920
	20.07 Total		Elevators, escalators				$ 879,000	20.07 Total	$ 879,000		1,054,800		$ 105,480	$ 1,160,280
	30.03 Total		Heavy Maintenance Facility					30.03 Total	$ -		-		$ -	$ -
	30.05 Total		Yard and Yard Track					30.05 Total	$ -		-		$ -	$ -
40	40.01	DM05	Demolition Allow. - Existing Building, Moderate	EA	$ 48,330	5	$ 241,650	5	$ 241,650	25%	302,063	25%	$ 75,516	$ 377,578
	40.01 Total		Demolition, Clearing, Earthwork				$ 241,650	40.01 Total	$ 241,650		302,063		$ 75,516	$ 377,578
40	40.02	UM11k	Relocate Storm Water Piping - 24" RCP (Buried)	LF	$ 300	32	$ 9,510	32	$ 9,510	25%	11,887	20%	$ 2,377	$ 14,265
40	40.02	UM11L	Extend Storm Water Culvert - 72" CMP	LF	$ 700	16	$ 11,095	16	$ 11,095	25%	13,869	20%	$ 2,774	$ 16,642
40	40.02	UM12A	Storm Water Detention Vault (Small<0.6)	AC-FT	$ 919,000	0.06	$ 54,623	0	$ 54,623	25%	68,278	20%	$ 13,656	$ 81,934
40	40.02	UM55c	Power distribution lines, buried - Level 2	LF	$ 400	139	$ 55,474	139	$ 55,474	35%	74,891	15%	$ 11,234	$ 86,124
40	40.02	UM58c	Comm, Fiber Optics, copper cable Relocate - Level 3	RF	$ 420	372	$ 156,355	372	$ 156,355	30%	203,261	15%	$ 30,489	$ 233,750
	40.02 Total		Site Utilities, Utility Relocation				$ 287,057	40.02 Total	$ 287,057		372,186		$ 60,530	$ 432,715
40	40.03	HM06	Hazardous Material Removal Allowance	LS	$ 70,000	0.20	$ 13,869	0.20	$ 13,869	25%	17,336	50%	$ 8,668	$ 26,004
	40.03 Total		Haz. mat'l, contam'd soil removal/mitigation, ground water treatments				$ 13,869	40.03 Total	$ 13,869		17,336		$ 8,668	$ 26,004
40	40.04	EM02	Environmental Mitigation Allow. - Level 2	RF	$ 150	87	$ 13,076	87	$ 13,076	25%	16,345	20%	$ 3,269	$ 19,614
	40.04 Total		Environmental mitigation, e.g. wetlands, historic/archeologic, parks				$ 13,076	40.04 Total	$ 13,076		16,345		$ 3,269	$ 19,614
	40.05 Total		Site structures including retaining walls, sound walls					40.05 Total	$ -		-		$ -	$ -
40	40.06	PA10	Station Pedestrian Access - Plaza	SF	$ 54	10,170	$ 549,180	10,170	$ 549,180	20%	659,016	10%	$ 65,902	$ 724,918
40	40.06	LS10	Landscaping Allow. - Guideway	RF	$ 87	336	$ 29,268	336	$ 29,268	20%	35,122	10%	$ 3,512	$ 38,634
	40.06 Total		Pedestrian / bike access and accommodation, landscaping				$ 578,448	40.06 Total	$ 578,448		694,138		$ 69,414	$ 763,551
	40.07 Total		Automobile, bus, van accessways including roads, parking lots				$ -	40.07 Total	$ -		-		$ -	$ -
40	40.08	AR01	1% for Art (1% of Category 10 thru 50, excluding 10.06 & 10.07)	LS	1%	1%	$ 293,378	1	$ 293,378	20%	352,053	15%	$ 52,808	$ 404,861
	40.08 Total		Temporary Facilities and other Indirect Costs During Construction				$ 293,378	40.08 Total	$ 293,378		352,053		$ 52,808	$ 404,861
50	50.01	TC02	Train Control - Double Track	RF	$ 485	380	$ 184,300	380	$ 184,300	20%	221,160	15%	$ 33,174	$ 254,334
	50.01 Total		Train control and signals				$ 184,300	50.01 Total	$ 184,300		221,160		$ 33,174	$ 254,334

SOUNDTRANSIT

Segment **C**

Alternate **9T**

Option **B7 Connection**

ST - end of B to portal (B7-C9T)

Extrapolation factors 0.20 380

EM Station

Begin	3014+67.00		
End	3018+47.00	0.07	MI
RF	380	380	RF

SCCRU	SCCPoint	Code	Desc	UOM	Composite Unit Cost	Qty	Subttl $	Total Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total

Segment C

Alternate 9T

Option B7 Connection

ST - end of B to portal (B7-C9T)

Extrapolation factors 0.20 380

EM Station

Begin 3014+67.00
End 3018+47.00 0.07 MI
RF 380 380 RF

SCCRU	SCCPoint	Code	Desc	UOM	Composite Unit Cost	Qty	Subttl $	Total Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total
50.02 Total			Traffic signals and crossing protection					50.02	$ -		-		$ -	$ -
50.03 Total			Traction power supply: substations					50.03	$ -		-		$ -	$ -
50	50.04	TP02	OCS System - Standard, Double Track	RF	$ 180	380	$ 68,400	380	$ 68,400	20%	82,080	15%	$ 12,312	$ 94,392
40	50.04	TP02S	Train Control, Double Track, Street	RF	$ 231	380	$ 87,780	380	$ 87,780	20%	105,336	15%	$ 15,800	$ 121,136
50.04 Total			Traction power distribution: catenary and third rail				$ 156,180	50.04	$ 156,180		187,416		$ 28,112	$ 215,528
50	50.05	CM02	Communication, Line - Double	RF	$ 274	380	$ 104,120	380	$ 104,120	20%	124,944	15%	$ 18,742	$ 143,686
50	50.05	CM05	Communication, Station	EA	$ 624,000	1	$ 624,000	1	$ 624,000	20%	748,800	15%	$ 112,320	$ 861,120
50	50.05	CM20	Passenger Information System, Fiber Optic	LF	$ 24	380	$ 9,120	380	$ 9,120	20%	10,944	15%	$ 1,642	$ 12,586
50.05 Total			Communications				$ 737,240	50.05	$ 737,240		884,688		$ 132,703	$ 1,017,391
50	50.06	FC01	Fare Collection - 1 Entrance	EA	$ 259,000	1	$ 259,000	1	$ 259,000	20%	310,800	15%	$ 46,620	$ 357,420
50.06 Total			Fare collection system and equipment				$ 259,000	50.06	$ 259,000		310,800		$ 46,620	$ 357,420
50.07 Total			Central Control					50.07	$ -		-		$ -	$ -
60	60.01	ROW	Right of Way	LS				-	$ -	0%	-	40%	$ -	$ -
60.01 Total			Right of Way					60.01	$ -		-		$ -	$ -
Grand Total						$ 29,631,157		**$ 29,631,157**		**$ 35,598,536**		**$ 5,244,215**		**$ 40,842,751**

SOUNDTRANSIT

Segment B

Alternate B7

Option **Sound Transit- 118th Ave SE station**

Modified to break out station quantity

0.03

118th Ave SE Station

Begin 2119+44.00
End 2123+24.00
RF 380

SCCRU	SCCPoint	Code	Desc	UOM	Composite Unit Cost	Qty	Subttl $	Total Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total
10.01 Total			Guideway: At-grade exclusive right-of-way						$ -		$ -		$ -	$ -
10	10.04	EL34	Twin-Sgl. Precast Segmental Box Girder (Avg. Pier 40' Ht.)	RF	7,620	380	2,895,600	380	$ 2,895,600	20%	$ 3,474,720	15%	$ 521,208	$ 3,995,928
10.04 Total			Guideway: Aerial structure				2,895,600		$ 2,895,600		$ 3,474,720		$ 521,208	$ 3,995,928
10.05 Total			Guideway: Built-up fill						$ -		$ -		$ -	$ -
10.06 Total			Guideway: Underground cut & cover						$ -		$ -		$ -	$ -
10.07 Total			Guideway: Underground tunnel						$ -		$ -		$ -	$ -
10.08 Total			Guideway: Retained cut or fill						$ -		$ -		$ -	$ -
10	10.09	TK21	Direct Fixation - Double Track	RF	997	380	378,860	380	$ 378,860	20%	$ 454,632	10%	$ 45,463	$ 500,095
10.09 Total			Track: Direct fixation				378,860		$ 378,860		$ 454,632		$ 45,463	$ 500,095
10.10 Total			Track: Embedded					10.10	$ -		$ -		$ -	$ -
10.11 Total			Track: Ballasted					10.11	$ -		$ -		$ -	$ -
10.12 Total			Track: Special (switches, turnouts)					10.12	$ -		$ -		$ -	$ -
20	20.01	ST89	At-Grade - Bus Stop, Curb Bulb Platform - 1 Vehicle Platform	LS	45,300	3	135,900	3	$ 135,900	20%	$ 163,080	5%	$ 8,154	$ 171,234
20.01 Total			At-grade station, stop, shelter, mall, terminal, platform				135,900		$ 135,900		$ 163,080		$ 8,154	$ 171,234
20	20.02	ST20	Aerial - 30' Center Platform - 4 Vehicle without Mezz.	LS	15,800,000	1	15,800,000	1	$ 15,800,000	20%	$ 18,960,000	15%	$ 2,844,000	$ 21,804,000
20.02 Total			Aerial station, stop, shelter, mall, terminal, platform				15,800,000		$ 15,800,000		$ 18,960,000		$ 2,844,000	$ 21,804,000
20.03 Total			Underground station, stop, shelter, mall, terminal, platform						$ -		$ -		$ -	$ -
20.04 Total			Other stations, landings, terminals: Intermodal, ferry, trolley, etc.						$ -		$ -		$ -	$ -
20	20.06	SF20	Station Site Facilities - Parking Garage	SP	19,100	1,000	19,100,000	1,000	$ 19,100,000	20%	$ 22,920,000	15%	$ 3,438,000	$ 26,358,000
20	20.06	SF41	118th Sta. Parking Garage Foundation Adder	LS	2,720,000	1	2,720,000	1	$ 2,720,000	20%	$ 3,264,000	15%	$ 489,600	$ 3,753,600
20.06 Total			Automobile parking multi-story structure				21,820,000		$ 21,820,000		$ 26,184,000		$ 3,927,600	$ 30,111,600
20	20.07	PA31	Pedestrian Vertical Access - Elevator, 40ft.	EA	274,000	2	548,000	2	$ 548,000	20%	$ 657,600	10%	$ 65,760	$ 723,360
20	20.07	PA36	Pedestrian Vertical Access - Escalator, 40ft.	EA	331,000	2	662,000	2	$ 662,000	20%	$ 794,400	10%	$ 79,440	$ 873,840
20.07 Total			Elevators, escalators				1,210,000		$ 1,210,000		$ 1,452,000		$ 145,200	$ 1,597,200
30.03 Total			Heavy Maintenance Facility						$ -		$ -		$ -	$ -
30.05 Total			Yard and Yard Track						$ -		$ -		$ -	$ -
40	40.01	DM05	Demolition Allow. - Existing Building, Moderate	EA	48,330	3	144,990	3	$ 144,990	25%	$ 181,238	25%	$ 45,309	$ 226,547
40.01 Total			Demolition, Clearing, Earthwork				144,990		$ 144,990		$ 181,238		$ 45,309	$ 226,547
40	40.02	UM01	Utility Modifications Allow. - Level 1	RF	187	3	577	3	$ 577	25%	$ 721	20%	$ 144	$ 865
40	40.02	UM11B	Storm Water Piping - 18" CPE Pipe (Buried)	LF	200	196	39,283	196	$ 39,283	25%	$ 49,103	20%	$ 9,821	$ 58,924
40.02 Total			Site Utilities, Utility Relocation				39,859		$ 39,859		$ 49,824		$ 9,965	$ 59,789
40	40.03	HM01	Hazardous Material Removal Allowance	RF	181	159	28,781	159	$ 28,781	25%	$ 35,976	50%	$ 17,988	$ 53,965
40	40.03	HM06	Hazardous Material Removal Allowance	LS	550,000	0.03	16,959	0	$ 16,959	25%	$ 21,198	50%	$ 10,599	$ 31,798
40.03 Total			Haz. mat'l, contam'd soil removal/mitigation, ground water treatments				45,740		$ 45,740		$ 57,175		$ 28,587	$ 85,762
40	40.04	EM01	Environmental Mitigation Allow. - Level 1	RF	63	49	3,061	49	$ 3,061	25%	$ 3,827	20%	$ 765	$ 4,592
40	40.04	EM03	Environmental Mitigation Allow. - Level 3	RF	249	116	28,914	116	$ 28,914	25%	$ 36,143	20%	$ 7,229	$ 43,371
40	40.04	EM10	Residential Noise Mitigation Allow.	RF	150	8	1,230	8	$ 1,230	25%	$ 1,538	20%	$ 308	$ 1,845
40.04 Total			Environmental mitigation, e.g. wetlands, historic/archeologic, parks				33,206		$ 33,206		$ 41,507		$ 8,301	$ 49,809
40.05 Total			Site structures including retaining walls, sound walls						$ -		$ -		$ -	$ -
40	40.06	PA10B	Pedestrian Access Cover Structure	SF	175	7,020	1,228,500	7,020	$ 1,228,500	20%	$ 1,474,200	10%	$ 147,420	$ 1,621,620
40	40.06	PA10G	Station Pedestrian Access - Sidewalk/Walkway	SF	21	8,700	182,700	8,700	$ 182,700	20%	$ 219,240	10%	$ 21,924	$ 241,164
40	40.06	SF02F	Construct / Replace 12' Bike Path, ACP	LF	92	368	33,861	368	$ 33,861	20%	$ 40,633	10%	$ 4,063	$ 44,697
40	40.06	LS02	Landscaping Allow. - Site	SF	3	3,003	9,010	3,003	$ 9,010	20%	$ 10,812	10%	$ 1,081	$ 11,893
40	40.06	LS10	Landscaping Allow. - Guideway	RF	87	111	9,657	111	$ 9,657	20%	$ 11,589	10%	$ 1,159	$ 12,748
40.06 Total			Pedestrian / bike access and accommodation, landscaping				1,463,728		$ 1,463,728		$ 1,756,474		$ 175,647	$ 1,932,121

SOUNDTRANSIT

Segment B

Alternate B7

Option **Sound Transit- 118th Ave SE station**

Modified to break out station quantity

0.03

118th Ave SE Station

Begin 2119+44.00
End 2123+24.00
RF 380

SCCRU	SCCPoint	Code	Desc	UOM	Composite Unit Cost	Qty	Subttl $	Total Quantity	Base Cost	Design Allowance (%)	Pre-Award Total	Allocated Contingency (%)	Subtotal Contingency	Total
40	40.07	SS01	Streetscaping Allow. - Light	RF	197	59	11,541	59	$ 11,541	20%	$ 13,849	15%	$ 2,077	$ 15,927
40	40.07	SS02	Streetscaping Allow. - Moderate	RF	423	148	62,606	148	$ 62,606	20%	$ 75,127	15%	$ 11,269	$ 86,396
40	40.07	SS03	Streetscaping Allow. - Heavy	RF	656	16	10,599	16	$ 10,599	20%	$ 12,719	15%	$ 1,908	$ 14,627
40	40.07	SF02	Station Site Facilities - Surface Parking	SP	5,300	30	159,000	30	$ 159,000	20%	$ 190,800	15%	$ 28,620	$ 219,420
40	40.07	SF02D	Station Site Facilities - Kiss & Ride Loop - AC Paving	SF	20	45,000	900,000	45,000	$ 900,000	20%	$ 1,080,000	15%	$ 162,000	$ 1,242,000
40.07 Total			Automobile, bus, van accessways including roads, parking lots				1,143,746		$ 1,143,746		$ 1,372,495		$ 205,874	$ 1,578,369
40	40.08	AR01	1% for Art (1% of Category 10 thru 50, excluding 10.06 & 10.07)	LS	1%	1%	457,366	1	$ 457,366	20%	$ 548,839	15%	$ 82,326	$ 631,165
40.08 Total			Temporary Facilities and other Indirect Costs During Construction				457,366		$ 457,366		$ 548,839		$ 82,326	$ 631,165
50	50.01	TC02	Train Control - Double Track	RF	485	380	184,300	380	$ 184,300	20%	$ 221,160	15%	$ 33,174	$ 254,334
50.01 Total			Train control and signals				184,300		$ 184,300		$ 221,160		$ 33,174	$ 254,334
50.02 Total			Traffic signals and crossing protection						$ -		$ -		$ -	$ -
50.03 Total			Traction power supply: substations						$ -		$ -		$ -	$ -
50	50.04	TP02	OCS System - Standard, Double Track	RF	180	380	68,400	380	$ 68,400	20%	$ 82,080	15%	$ 12,312	$ 94,392
50.04 Total			Traction power distribution: catenary and third rail				68,400		$ 68,400		$ 82,080		$ 12,312	$ 94,392
50	50.05	CM02	Communication, Line - Double	RF	274	380	104,120	380	$ 104,120	20%	$ 124,944	15%	$ 18,742	$ 143,686
50	50.05	CM20	Passenger Information System, Fiber Optic	LF	24	380	9,120	380	$ 9,120	20%	$ 10,944	15%	$ 1,642	$ 12,586
50.05 Total			Communications				113,240		$ 113,240		$ 135,888		$ 20,383	$ 156,271
50	50.06	FC01	Fare Collection - 1 Entrance	EA	259,000	1	259,000	1	$ 259,000	20%	$ 310,800	15%	$ 46,620	$ 357,420
50.06 Total			Fare collection system and equipment				259,000		$ 259,000		$ 310,800		$ 46,620	$ 357,420
60	60.01	ROW	Right of Way	LS	-	0		0.03	$ -	0%	$ -	40%	$ -	$ -
60.01 Total			Right of Way						$ -		$ -		$ -	$ -
Grand Total								**$**	**46,193,935**	**$**	**55,445,912**	**$**	**8,160,125**	***$ 63,606,037***