

## ST2 Cost Estimating Example / Level 3 Project

All Level 3 projects will be identified as belonging to one of ten major project types, differentiated by their major construction contract cost components, as follows:

<b>Level 3 Project Types (major construction contract cost elements)</b>	<b>Cost, including allocated contingencies (\$M)</b>
1. Direct Access Ramp(s) without roadway widening	20
2. Freeway in-line station without roadway widening	20
3. Small Park-&-Ride, approx. 200 stalls	3
4. Medium Park-&-Ride, approx. 400 stalls	8
5. Business Access and Transit lanes (widen two lanes), per mile	15
6. Sounder pedestrian bridge, single-ended	3
7. Sounder pedestrian bridge, double-ended	4
8. Small transit center, approx. 200 stalls	7
9. Small station, single or double platform, no pedestrian bridge, 200-300 stalls	5
10. Large multimodal station including pedestrian bridge OR large transit center with 600+ stalls	20

Following internal review of the project cost estimate and project definition, a review of both the project definition and the cost estimate spreadsheets will be carried out by the ST work team. Where possible the costs will be validated by comparing the project against like projects that ST has constructed or taken through to detailed design and developed an engineer's estimate.

Comments from the ST work team will be incorporated as required and the project definition and cost estimate modified as required.

### **Summary of Level 3 capital cost methodology:**

The ST2 capital cost methodology does not allow, *except in extraordinary circumstances*, for direct cost add-ons or direct deductions from the high-level cost elements identified below. For example, if a ST2 candidate project is identified as a project type 8, Small Transit Center, no deduction from the basic construction cost of \$7M is made if ST expects that street improvements will not be required. However, if a candidate site is expected to have such challenging soil conditions that extraordinary foundation costs will be experienced for any structures built, the methodology does allow for the inclusion of additional basic construction contract costs. In practice, the majority of candidate projects do not have add-ons to, or deductions from, their major construction contract cost elements.

The following steps describe how the major construction contract cost elements are factored to yield a system/planning-level total cost estimate for ST2 candidate projects:

1. The appropriate, representative construction contract cost element (see Step 3) is selected for the ST2 candidate project in question. Because they represent the fully-delivered *construction* cost of projects built during the recent implementation of *Sound Move*, the costs for these conceptual construction contract elements already include the allocated contingencies necessary for the development and delivery of the project.

To the conceptual construction contract element cost, ST applies the following factors:

Environmental clearance and PE	15%
Final design and specs	15%
Additional construction (non-major contract costs)	25%
STart Program	1%
Real Estate for Sounder projects	42% (with exceptions)
<b>OR</b>	
Real Estate for ST Express Projects	16% to 25%

2. To the above intermediate result, add the following:

Unallocated contingency	10%
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3. To the above intermediate result, add the following:

Administration	6%
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For initial presentation and project evaluation purposes, the result of the above methodology will represent the Low end of the ST2 cost range. A factor of an additional 15% to the total capital cost estimate will establish the High end of the cost range.

ST2 Project Proposal: S20 Sumner Station

Phase		Project Cost Line Item	Unit Cost	Units	Quantity/ Percenta ge	Extended Cost	High Cost (extended cost x 1.15)	Comments
Phase 50	Construction (Contractor-bid-costs only)	Large Multimodal Station including pedestrian bridge	\$20,000,000	LS	1	\$20,000,000		Construct 400 stalls (net new 400)
						\$0		
						\$0		
						\$0		
Phase 50	Construction (Contractor-bid-costs only)	Construction Contract(s) Subtotal				\$20,000,000	\$23,000,000	
Phase 20	Preliminary Eng'g/ Env. Review				15%	\$3,000,000	\$3,450,000	
Phase 30	Final Design and Specs.				15%	\$3,000,000	\$3,450,000	
Phase 50	Construction (non-contractor costs)				25%	\$5,000,000	\$5,750,000	
Phase 50	STArt Program				1%	\$200,000	\$230,000	
Phase 70	Vehicles			EA		\$0	\$0	
Phase 40	Property/ROW Acquisition and Permits				42%	\$8,400,000	\$9,660,000	Purchase new ROW
		Project Subtotal (A)				\$39,800,000	\$45,540,000	
Phase 90	Contingencies				10%	\$3,980,000	\$4,554,000	
		Project Subtotal (B)				\$43,780,000	\$50,094,000	
Phase 10	Agency Administration				6%	\$2,813,800	\$3,005,640	
		<b>Total Project Cost</b>				<b>\$46,173,800</b>	<b>\$53,099,640</b>	

Cost (in Millions of 2005\$)

Financial Model

	Low	High
Agency Adm		
Environment		
Final Design		
ROW Acquis		
Construction		
Vehicles		
Contingency		
<b>Total</b>	<b>\$46.2</b>	<b>\$53.1</b>

	use High
Constr	\$33.5
ROW	\$9.7
Prof Svcs	\$9.9
Veh	\$0.0
	\$53.1

check totals w/ \$0.0 \$0.0 (should be zero)

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*EXS  
Stand alone  
projects*

	Major Project Type	Major Construction Contract Cost Element	Cost of Major Contract Element (\$K)	Original Level 3 Cost Estimate, High Range (\$K)	Revised Level 3 Cost Estimate, High Range (\$K)	Current/Final Project Budget (EAC)
Everett Station	10	Large multimodal station including pedestrian bridge OR large transit center with 600+ stalls	20,000	62,020	53,100	26,872
Kent Station	10	Large multimodal station including pedestrian bridge OR large transit center with 600+ stalls	20,000	62,020	53,100	32,560
Auburn Station	10	Large multimodal station including pedestrian bridge OR large transit center with 600+ stalls	20,000	62,020	53,100	26,044
Sumner Station	9	Small station, single or double platform, no pedestrian bridge, 200-300 stalls	5,000	15,505	13,275	10,408
Puyallup Station	9	Small station, single or double platform, no pedestrian bridge, 200-300 stalls	5,000	15,505	13,275	13,360
Lakewood Station	10	Large multimodal station including pedestrian bridge OR large transit center with 600+ stalls	20,000	62,020	53,100	32,562

*complete  
final report costs*