

CONNECTING THE REGION

Expert Review Panel - October 21st

**ST2
Operating & Maintenance Cost Estimating**



O&M Cost Models Developed for:

- Central Link
- Tacoma Link & Everett
- ST Express Bus
- Rail-convertible BRT

Sounder costs based on ST contracts



General Format of Models

- Resource build-up
- Each line item driven by system characteristic(s)
- Calibrated to current budgets, or based on peer systems

 SOUNDTRANSIT
RIDE THE WAVE

Central Link (LRT)

- ST to contract with KCM to operate
- Detailed cost proposal by KCM
- Some items to be handled directly by ST
- Traction power per Seattle City Light

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Sound Transit 2		
Light Rail O&M Cost Model		
System and Service Statistics		
<i>Input</i>		
<i>14-mi Central Link</i>		
<i>Variable</i>	<i>Code</i>	<i>Calibration</i>
Peak Cars	PKCAR	26
Revenue Car-Miles	CARMI	2,606,000
Revenue Train-Hours	TRNHR	62,000
Subway Stations	SUBSTA	5
Elevated Stations	ELEVSTA	2
At-Grade Stations	GRADESTA	5
Directional Route Miles	RTMILE	27.8
Maintenance Facilities	YARD	1.0
Joint operation in DSTT?	yes=1, no=0	1

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Sample line item detail

<i>Cost Item</i>	<i>Annual Earnings</i>	<i>Productivity Factor</i>	<i>Driver</i>	<i>FTEs</i>	<i>Annual Cost (2005 dollars)</i>
Vehicle Operations - KCM					
Rail Operations Supervisor	\$98,132	1.0	Fixed	1.0	\$98,132
Rail Operations Chief	\$80,156	3.0	Fixed	3.0	\$240,469
Rail Supervisor	\$69,637	5.3	PKCAR	5.3	\$369,075
Rail Supervisor	\$69,637	1.20	Total Stations-4 (DSTT stations)	9.6	\$668,513
Rail Supervisor	\$69,637		Joint operations in DSTT	5.2	\$362,111
Rail Operator	\$54,866	0.00074	TRNHR	46.0	\$2,523,825
Rail Operator - PT	\$49,088	0.07	# FT operators	3.0	\$147,264
Administrative	\$41,261	1.0	YARD	1.0	\$41,261
Fringe Benefits		34.2%	Dept. earnings		\$1,519,783
Workers Compensation		6.0%	Dept. earnings		\$268,490
Security Services		\$67,141	Non-Tunnel Stations, weighted		\$872,837
KCM Scheduling Support		\$464	PKCAR		\$12,067
Other Contract Services		\$431	# operators		\$21,121
Other Contract Services		\$305	# other dept. empl.		\$7,645
Materials & Supplies		\$342	Total dept. empl.		\$25,313
DSTT Security			Joint operations in DSTT		\$1,482,853
Travel, Training, Conferences		\$183	Total dept. empl.		\$13,526
KCM Bus Bridging, 1000 hours		\$4,112	RTMILE		\$114,303
Claims Processing & Defense		\$0.12	CARMI		\$315,100
Subtotal				74.1	\$9,093,689

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Estimated costs - calibration

	King County Metro	Sound Transit	Total
Vehicle Ops	\$9,093,689	\$3,603,918	\$12,697,607
Vehicle Maint	\$2,961,881	\$1,407,269	\$4,369,150
Facil Maint	\$6,836,942	\$862,680	\$7,699,622
Admin/Support	\$1,631,641	\$3,268,980	\$4,900,622
Total	\$20,524,153	\$9,142,847	\$29,667,000

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Peer system compariosn

<u>Other LRT Systems</u>	<u>Cost (\$2003)</u>	<u>Car-miles</u>	<u>\$/Car-mile</u>
Baltimore	\$34,501,500	2,781,100	\$12.41
Dallas	\$57,543,300	5,633,700	\$10.21
Denver	\$20,068,200	3,764,200	\$5.33
Los Angeles	\$86,200,100	6,782,600	\$12.71
Portland	\$55,295,900	5,823,800	\$9.49
Sacramento	\$30,375,400	2,171,000	\$13.99
St. Louis	\$36,707,000	5,229,000	\$7.02
Salt Lake	\$19,926,400	2,281,900	\$8.73
San Jose	\$50,943,400	1,840,200	\$27.68
Average	\$43,506,800	4,034,167	\$10.78
<i>Seattle (14-mi.)</i>	<i>\$28,490,230</i>	<i>2,606,000</i>	<i>\$10.93</i>

 **SOUNDTRANSIT**
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Tacoma Link

- Short system, smaller cars
- Operated by Sound Transit
- Model based on current ST budget
- Model used for western extension



Comparison of Light Rail Alternatives: Tacoma

Alternative	Tacoma: Existing System	Tacoma: Extension to Tacoma CC
<i>INPUT STATISTICS</i>		
Peak Cars	2	20
Fleet Cars	3	25
Revenue Car-Miles	97,600	1,316,000
Revenue Train-Hours	10,090	34,600
Stations	5	12
Directional Route Miles	2.5	14.3
Maintenance Facilities	0.5	1.0
<i>ESTIMATED O&M COSTS</i>		
Total	\$3,100,000	\$13,200,000
<i>Incremental Cost</i>	<i>base</i>	<i>\$10,100,000</i>



Everett Link

- Small system similar to Tacoma
- will use Central Link cars
- Tacoma cost model modified for larger cars: vehicle maint. & traction power
- Estimate: \$3.7M for 3-car system



ST Express

- 20 regional express bus routes
- Service contracted to King County Metro, Community Transit, Pierce Transit
- Contracts are per bus-hour
- Additional costs contracted by Sound Transit: e.g. facilities, marketing



Rail-convertible BRT

- Alternative to LRT in East Corridor
- Combination of ST Express & Central Link cost models
- Service costs - hourly contract
- Station costs similar to LRT
- Guideway maintenance costs based on busway & highway experience

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Souder (commuter rail)

- ST has long-term contracts:
 - BN: system operation
 - Amtrak: vehicle maintenance
- Additional direct costs by ST

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