

Express Bus: Transit Signal Priority on SR 99 and Evergreen Way (Snohomish County)

Project Number	N13
Subarea	Snohomish
Primary Mode Impacted	ST Express
Facility Type	BRT Facility
Version Number	3.0
Date Last Modified	5/17/2006

Project Locator Map



Short Project Description

Construct and install transit signal priority equipment at up to 21 intersections along approximately 9 miles of SR-99 and Evergreen Way.

Project Purpose: to improve the speed and reliability of existing and planned services.

Cost and Schedule

Cost (in Millions of 2005\$)

Schedule

	Low	High
Agency Admin	\$0.3	\$0.4
Environmental Clearance and PE	\$0.4	\$0.5
Final Design, Specs, Permitting	\$0.4	\$0.5
ROW Acquisition	\$0.5	\$0.5
Construction	\$3.6	\$4.1
Vehicles	\$0.0	\$0.0
Contingency	\$0.5	\$0.6
Total	\$5.7	\$6.6

Proposed Schedule Not Yet Developed

Design Basis

Conceptual

Environmental Documentation Required

- Environmental Impact Statement Required
- Environmental Assessment Required
- Environmental Checklist Required

Relationships to Other Projects

Relationship	Project
Complements	N11 a, b, c, and d

Project Partners

Snohomish County
City of Everett
Community Transit

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Long Description

This capital project scope, and the companion capital cost estimate, are intended to include the entire project development cycle (agency and project administration, environmental clearance, design, all aspects of property acquisition, permits, agreements, construction, testing, commissioning and contingencies) from project initiation through the start-up of the revenue operations.

Description:

The Transit Signal Priority (TSP) system is a set of street-side hardware, bus-side hardware, a software system and an operational implementation of the system. The intent of the system is to locate buses along their route with respect to their schedule and provide a traffic signal priority to a bus that is behind schedule on an 'on-demand' basis. Typical practical implementation is to extend the green time on the arterial street to allow the bus to clear the traffic signal or to start the green time early for a bus arriving at a red signal indication.

The street side hardware includes a reader, located approximately 1000 ft. in advance of the intersection, and underground communication to the local traffic signal controller at the intersection. This is required for each direction of the arterial. The local traffic signal controller cabinet is supplemented with electronic hardware that receives the information from the reader and coordinates the pre-emption of the local controller. Communication between the local controller and the traffic management center or master traffic signal system controller is required and the TSP system may or may not communicate over that system without revision.

The intent of this project is to provide the TSP capability on SR 99, Evergreen Way and Rucker Ave. between downtown Seattle and Pacific Avenue in Everett. From the Aurora Bridge through the Cities of Shoreline, Edmonds, Lynnwood and north to Airport Rd TSP is either in place or will be in place at all significant signalized intersections. North of Airport Road at SR 99, twenty-one signalized intersections do not have TSP in place.

It is assumed that the local traffic signal controller is not compatible with the TSP street-side hardware and will be replaced. The existing communication system in Everett is a single twisted pair of communication wire and is not compatible with TSP communication requirements. Therefore, fiber-optic cable is included from Airport Rd. at SR 99 to Everett's Traffic Management Center. Due to the incompatibility with Everett's Downtown traffic signal system, Pacific Avenue signals are not included. The TSP system will operate as an active signal priority. It is assumed that Sound Transit, King County Metro, and Community Transit buses have compatible bus-side hardware to communicate to the system. All buses using the TSP system must have the bus-side equipment. The on-vehicle TSP equipment and on-going system operating and maintenance funding are not included as part of this project. It is assumed that Sound Transit has the required software and the local jurisdictions will operate and maintain the TSP hardware.

Project Elements Included:

- TSP equipment at up to 21 intersections
- 1 percent for art per ST policy

Utilities:

- Underground utilities where required by local ordinances
- Power/communications conduit for Transit Signal Priority (TSP)
- Relocate utilities where needed
- Storm water facilities and water quality treatment that meets or exceeds city, county and state requirements

Right-of-Way and Property Acquisition:

- none

Mitigation:

- The final project scope will include all mitigation(s) committed to by ST in pertinent, future project-level environmental documents.

Exclusions:

- Non-structural architectural and aesthetic elements in excess of the ST art program
- On-vehicle equipment on CT vehicles
- Operations control center modifications
- On-going TSP equipment operations and maintenance

Permits Required:

- utility, construction-related

Agreements Required:

- City of Everett, Snohomish County

ST has developed scope definitions for ST2 project proposals for the purposes of developing cost estimates, implementation schedules, a financial plan, and the estimation of project benefits. This scope definition should not be construed as a commitment that all defined features will be included in the final developed project.

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Evaluation Measures

<i>Measure</i>	<i>Measurement/ Rating</i>	<i>Notes</i>
Average Weekday Ridership	N/A	
Capital Cost	\$5.7 - \$6.6	in Millions of 2005\$
Annual Operating Cost	\$0.0	in Millions of 2005\$
Travel Time & Reliability	Medium	
Connectivity & Integration	Medium	# transit routes: 1-2 CT, 1 ET, 1 ST
Land Use & Development	High	
Customer Experience	Medium	
Risk Avoidance	High	

Key Issues and Benefits

Issues

- Level of transit priority must be negotiated with Everett, Snohomish County and WSDOT traffic engineers.
- Sound Transit would operate only a small amount of service on a portion of this corridor.

Benefits

- Significant rider travel time savings and transit agency operating cost savings, predominantly benefiting local transit services.
- Improved service reliability.
- Completes signal priority system along SR 99 from Everett to King County line.