

Express Bus: BAT Lanes and Transit Signal Priority on SR 161, New Meridian/South Hill Park & Ride, and New Bus Route Serving the Sounder South Corridor

Project Number	S10
Subarea	South King/Pierce
Primary Mode Impacted	ST Express
Facility Type	ST Express Service
Version Number	1.0
Date Last Modified	12/8/2005

Short Project Description

New ST Express route connecting South Hill area of Pierce County with SeaTac. The route can also provide access to Sounder Station in Pierce and South King Counties. Service will be supported by BAT lanes along SR 161 and a new park-and-ride facility at SR 161 and 176th.

Project Purpose:

To provide direct regional express bus service from SR 161 to Sounder Stations and Seattle via Airport Link Station.

Project Locator Map



Cost and Schedule

Cost (in Millions of 2005\$)

<i>BAT Lanes and TSP</i>	Low	High
Agency Admin	\$5.2	\$5.6
Environmental Clearance and PE	\$6.5	\$7.1
Final Design, Specs, Permitting	\$6.5	\$7.1
ROW Acquisition	\$10.9	\$11.8
Construction	\$54.6	\$58.9
Vehicles	\$0.0	\$0.0
Contingency	\$7.9	\$8.5
Total TSP	\$91.6	\$98.9

Schedule

Proposed Schedule Not Yet Developed

<i>New P & R Lot (SR 161/176th St)</i>	Low	High
Agency Admin	\$0.7	\$0.7
Environmental Clearance and PE	\$0.8	\$0.9
Final Design, Specs, Permitting	\$0.8	\$0.9
ROW Acquisition	\$2.2	\$2.4
Construction	\$6.6	\$7.1
Vehicles	\$0.0	\$0.0
Contingency	\$1.0	\$1.1
Total PNR Lot	\$12.1	\$13.0

Design Basis Conceptual

Buses	\$5.0	\$5.0
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* - Assumes \$500K/bus

Total Capital Items	\$108.7	\$117.0
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Annual O&M*	\$5.7
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* In Millions, 2005\$

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Environmental Documentation Required

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

Relationships to Other Projects

<i>Relationship</i>	<i>Project</i>
Dependent on:	
Impacted by:	

Project Partners

<i>Agency</i>	
KC Metro:	
Pierce Transit:	

Long Description

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

Description

The new route will provide direct (no transfer) service between SR 161 (Meridian)/176th St and SeaTac (Airport Link Station). The route can also provide access to Sounder stations thereby providing a regional link to these stations, including midday's when Sounder is not operating. The new route would serve Sounder stations at Puyallup, Sumner, Auburn, Kent, and Tukwila.

The capital projects supporting the service include BAT lanes and transit signal priority (TSP) treatments along SR 161 and a new 300-stall park-and-ride lot located at 176th St and SR 161.

Project Elements Included - Service:

Headways

Weekday: Peak 30 min/ Midday 30 min/ Evening 30 min / Night 75 min

Annual Service Hours: 55,800

Project Elements Included - Capital:

Bus Needs

Peak Buses: 8

Midday Buses: 7

Spares: 2

Total Buses: 10

Additional vehicles will be acquired to support the service extension along with required additional maintenance and operations capacity.

BAT Lanes

Approximately five miles of 14-foot BAT lane on the east and west side of SR 161 between 176th St. E and SR 512. Actual widening of SR 161 will involve one-half of the affected corridor. BAT lanes in the northern portion of the corridor include a landscaped median, sidewalk, illumination and utility work necessary to complete the project. BAT lanes in the southern portion of the corridor include utility relocation where necessary to complete the project, including the items listed above.

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TSP Treatments

Treatments will be at the following intersections: - 176th / 116th; 160th / 39th; 144th / 37th; 132nd / 35th; 128th / 104th; 120th / 47th.

Transit Signal Priority projects include the following: Signal timing study; design and engineering costs; controller and controller foundation replacement; conduit installation to detector locations; all TSP equipment.

New PNR Lot

New surface park-and-ride lot with up to 300 stalls.

- Park-and-ride lot will be located at the intersection of Meridian E (SR 161) and 176th Street E/Sunrise Boulevard E in the southwest quadrant.
- Access to and from 176th Street E only; no connection to Meridian E.
- Removal of several existing large, mature trees on the site
- New traffic signal on 176th Street E to allow access to the park and ride lot.
- Roadway modifications of 176th Street E for left-turn lanes
- Illumination modification of 176th Street E at park-and-ride access
- New illumination system for park-and-ride lot
- Bike storage, lockers and racks
- Curb, gutter and sidewalk along property frontage
- A bus loading area, with shelters and benches for waiting passengers. The bus loading area will accommodate four buses.
- Landscaping
- 1% for art

Utilities:

For new pnr lot, new drainage system, including water retention and water quality; for BAT lanes, utility relocation where necessary in south segment of corridor.

Right-of-Way and Property Acquisition:

- For pnr lot, new drainage system including water retention and water quality

Mitigation

The final project scopes 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
- Reconstruction of local streets
- Access management plan along project corridor
- Public restrooms at pnr lot

Permits Required:

Building, electrical, mechanical, utility, land use, and construction-related

Agreements Required:

Pierce Transit, Pierce 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	1,500	
Capital Cost	\$108.7 - \$117.0	in Millions of 2005\$
Annual Operating Cost	\$5.7	in Millions of 2005\$
Travel Time & Reliability		
Connectivity & Integration	High	# transit routes: 2 PT, 1 ST (with this project)
Land Use & Development		
Customer Experience		
Consistency with Plans		
Public Support		
Risk Avoidance	Medium	

Key Issues and Benefits

<p>Issues:</p> <ul style="list-style-type: none"> - Numerous driveway and intersections along SR 161 make construction of BAT lanes difficult and can detract from their effectiveness if not mitigated. Elimination of access points and turns can adversely impact adjacent properties. - Potential site of Park & Ride identified for costing purposes is in an undeveloped parcel currently containing a use that can be difficult to locate (a rifle range.) However, further analysis may produce alternative parcels. <p>Benefits:</p> <ul style="list-style-type: none"> - Routing to Sea-Tac Airport station via Sounder stations provides alternative service for Sounder riders during non-Sounder operation periods by transfer to/from Central Link. Another option for providing this alternative Sounder bus service is described in project S11. - New ST Express service to area currently not served (i.e., area along SR 161 south of Puyallup) as well as new direct connection to airport for Sounder station communities (Kent, Auburn, Sumner and Puyallup) that is not currently available. - Park & Ride provides access to Pierce Transit bus service and potential new ST Express route, and could act as additional parking for Sounder riders. - BAT lanes and TSP improves speed and reliability for existing Pierce Transit service and for potential future ST Express service operating along SR 161

Phase	Project Cost Line Item	Unit Cost	Units	Quantity	Extended Cost	Add to Construction Contract Cost	Percentage Added to Project Subtotal	Allocated Design Contingency -- Low Range			Allocated Design Contingency -- High Range			Comments	
								%-age	Amount	Construction Cost	%-age	Amount	Construction Cost		
Phase 50	Construction (Contractor-bid-costs only)	\$15,000,000	mlc	2.3	\$34,500,000										
Phase 50	Construction (Contractor-bid-costs only)	\$70,000	EA	8	\$420,000										
Phase 50	Construction (Contractor-bid-costs only)				\$34,920,000			25%	\$8,730,000	\$9,650,000	35%	\$12,222,000	\$47,142,000		
Phase 20	Preliminary Eng'g/ Env. Review							15%		\$6,547,500			\$7,071,300		
Phase 30	Final Design and Specs							15%		\$6,547,500			\$7,071,300		
Phase 50	Construction (non-contractor costs)							25%		\$10,912,500			\$11,785,500		
Phase 70	Vehicles	TBD	EA	0				5%		\$0			\$0		
Phase 40	Property/ROW Acquisition and Permits							25%		\$10,912,500			\$11,785,500		
	Project Subtotal (A)									\$78,570,000			\$84,855,600		
Phase 90	Contingency							10%		\$7,857,000			\$8,485,680		
	Project Subtotal (B)									\$86,427,000			\$93,341,180		
Phase 10	Agency Administration							6%		\$5,185,620			\$5,600,470		
	Total Project Cost									\$91,612,620			\$98,941,630		

	Low	High
Agency Admin	\$5.2	\$5.6
Environmental Clearance and PE	\$6.5	\$7.1
Final Design Specs Permitting	\$6.5	\$7.1
ROW Acquisition	\$10.9	\$11.8
Construction	\$24.6	\$29.9
Vehicles	\$0.0	\$0.0
Contingency	\$7.9	\$8.5
Total	\$61.6	\$68.9

Route: S15-S Hill-SeaTac.
 Description: Shadow Service
 Version: 1
 Date: 9/25/05

RTA Routes Only: King County % of Hours: 0%
 Non-King County % of Hours: 100%
 King County Hours: 0
 Non-King County Hours: 55,794

White cells require inputs

SERVICE HOURS (REVENUE + Y ROUTES)

Day	Period	Span (hours)	Headway (minutes)	I/B Time (minutes)	O/B Time (minutes)	Layover (20%+4)	RunTime (minutes)	Coaches Required	Annual Service Hours	Trips
WkDay	3:00 - 5:00	2	60	79	87	37	203	4	2,040	4
WkDay	5:00 - 9:00	4	30	84	87	38	209	7	7,140	16
WkDay	9:00 - 3:00	6	30	81	90	38	209	7	10,710	24
WkDay	3:00 - 7:00	4	30	82	99	40	221	8	8,160	16
WkDay	7:00 - 9:00	2	30	80	92	38	210	8	4,080	8
WkDay	9:00 - 2:00	2	60	79	87	37	203	4	2,040	4
WkDay	2:00 - 5:00		75			0	0	0	0	0
Sat	3:00 - 5:00	2	60	79	87	37	203	4	416	4
Sat	5:00 - 10:00	5	30	81	90	38	209	7	1,820	20
Sat	10:00 - 6:00	8	30	81	90	38	209	7	2,912	32
Sat	6:00 - 9:00	3	30	81	90	38	209	7	1,092	12
Sat	9:00 - 2:00	2	60	79	87	37	203	4	416	4
Sat	2:00 - 5:00		75			0	0	0	0	0
Sun	3:00 - 5:00	2	15	79	87	37	203	14	1,624	16
Sun	5:00 - 10:00	5	30	81	90	38	209	7	2,030	20
Sun	10:00 - 6:00	8	30	81	90	38	209	7	3,248	32
Sun	6:00 - 9:00	3	30	81	90	38	209	7	1,218	12
Sun	9:00 - 2:00	2	60	79	87	37	203	4	464	4
Sun	2:00 - 5:00		75			0	0	0	0	0
									49,410	

BASE DEADHEAD HOURS

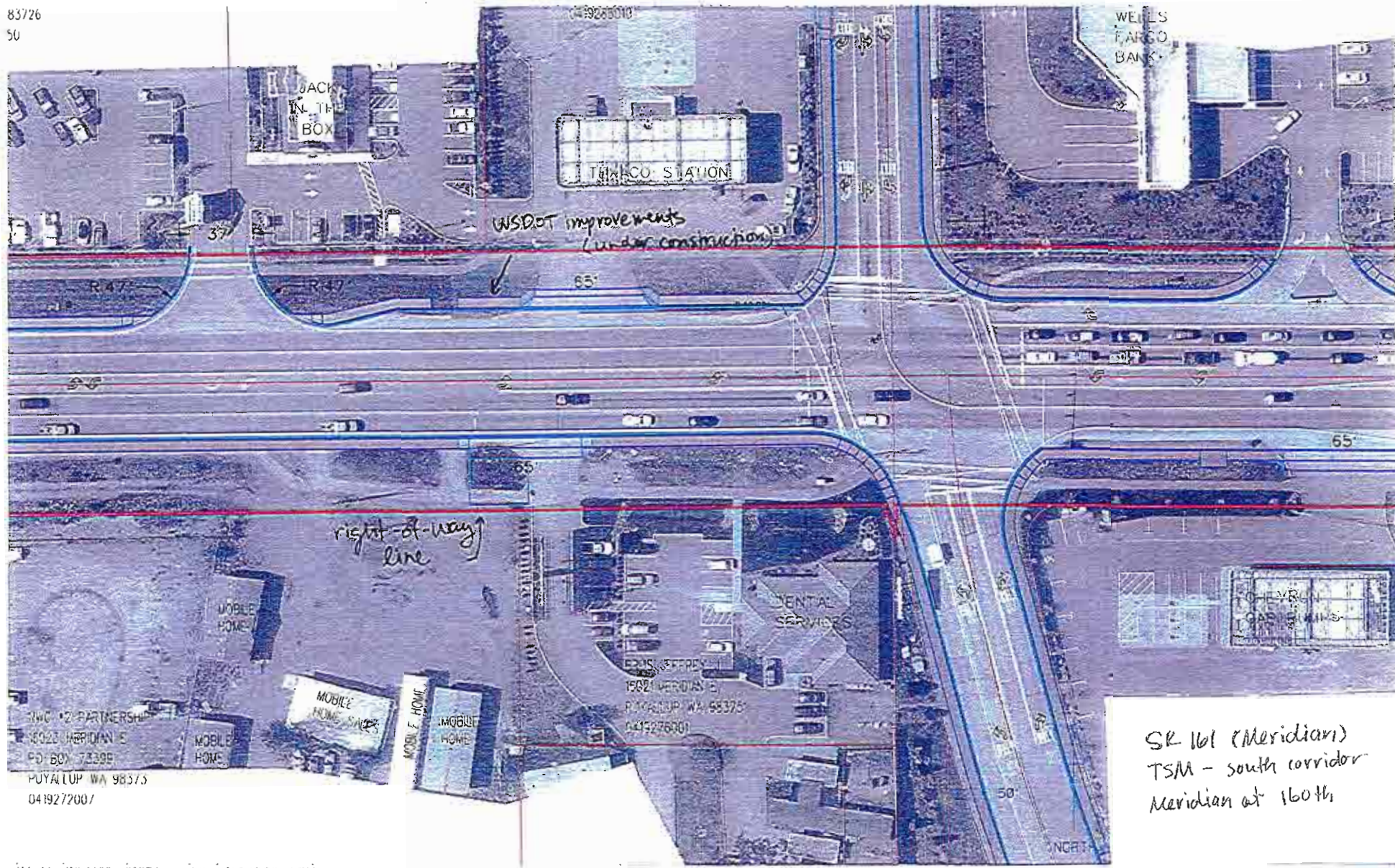
Assumed Base Campus: South

Day	Max Coaches	AM Pull Ins	Avg Iway DH (m)	Annual Hours
Wkday	8	0	45	3,048
Sat	11	0	45	858
Sun	28	0	45	2,478
				6,384

Yellow cells for entry into SAM

Route: S15-S Hill-SeaTac

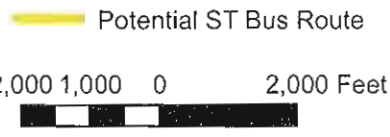
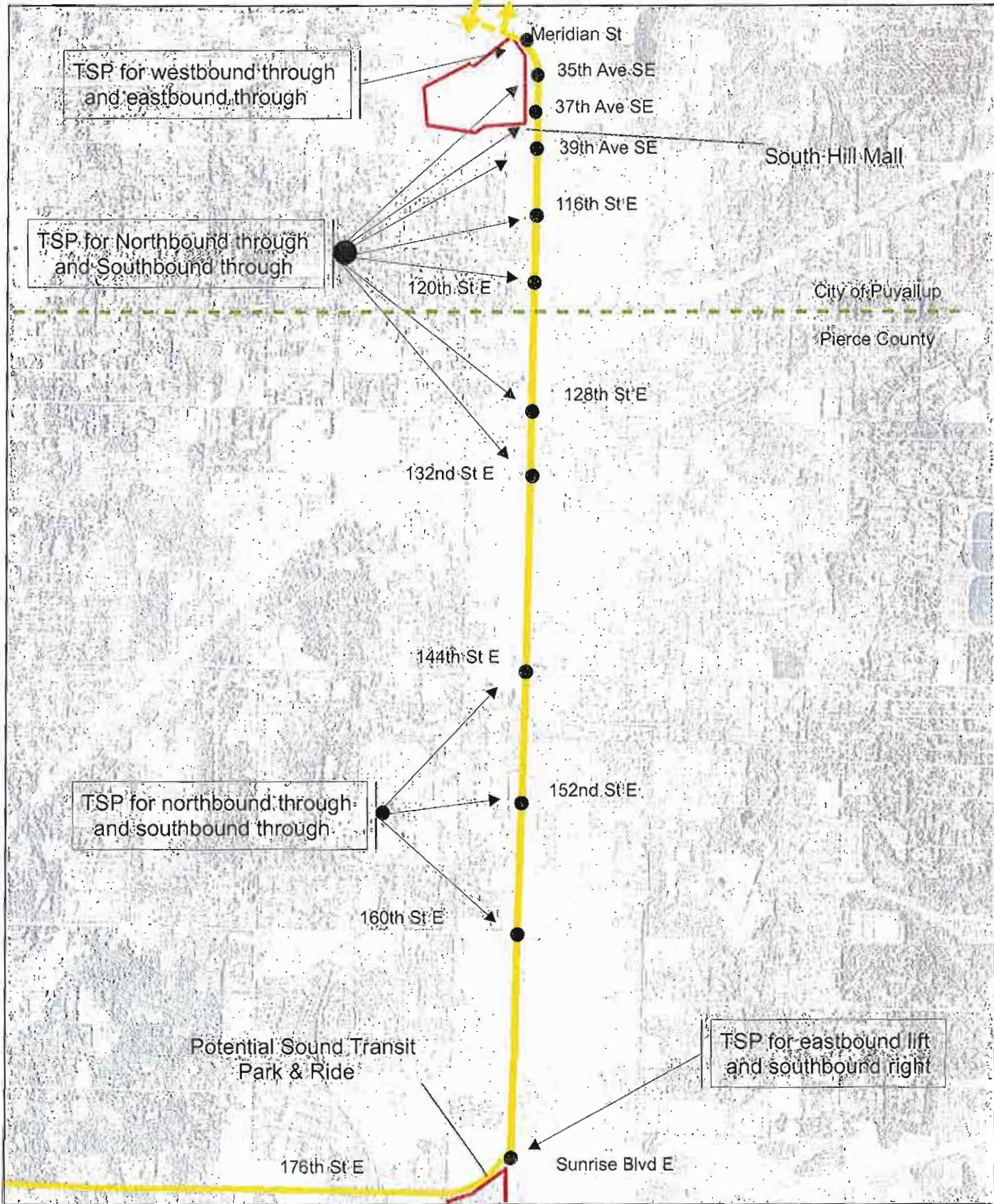
Assumed Base Campus:	South
PLATFORM HOURS:	55,794
Peak Coaches:	8
Middy Coaches:	7
Peak Trips:	16



TRC #2 PARTNERSHIP
16023 MERIDIAN E
PO BOX 72399
PUYALLUP WA 98373
0419272007

DRS, JEFFREY
16021 MERIDIAN E
PUYALLUP, WA 98375
0419276001

SR 161 (Meridian)
TSM - south corridor
Meridian at 160th



SR161 TSP Option