City of Seattle
Edward B. Murray, Mayor

Department of Transportation
Scott Kubly, Director

2016 Seattle City Council Statement of Legislative Intent 95-2-A-1
West Seattle Bridge Corridor Improvements
Progress Report on Whitepaper and Investment List
May 27, 2016

The First Bridge
In 1902, King County builds the first drawbridge over the Duwamish Waterway at Spokane Street. The bridge crosses the newly dredged Duwamish River and connects Seattle to West Seattle. Seattle will build a second bridge in 1907 after West Seattle is annexed into the city.

New or Third Spokane Street Bridge, 1917

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PO Box
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Whitepaper

Mayor Ed Murray and Councilmember Rasmussen charged the Seattle Department of Transportation (SDOT) with compiling and prioritizing a list of projects to address recurring congestion and incident management in the West Seattle Corridor. SDOT, in coordination with the Seattle Police Department, prepared the West Seattle Bridge/ Duwamish River Corridor Whitepaper and Priority investment List. SDOT presented this material to the Transportation Committee on September 22, 2015.

SDOT developed the Whitepaper and Improvement list by researching available budget, plans and programs to identify candidate projects and activities, including elements of the 2015 Seattle Incident Management Report.

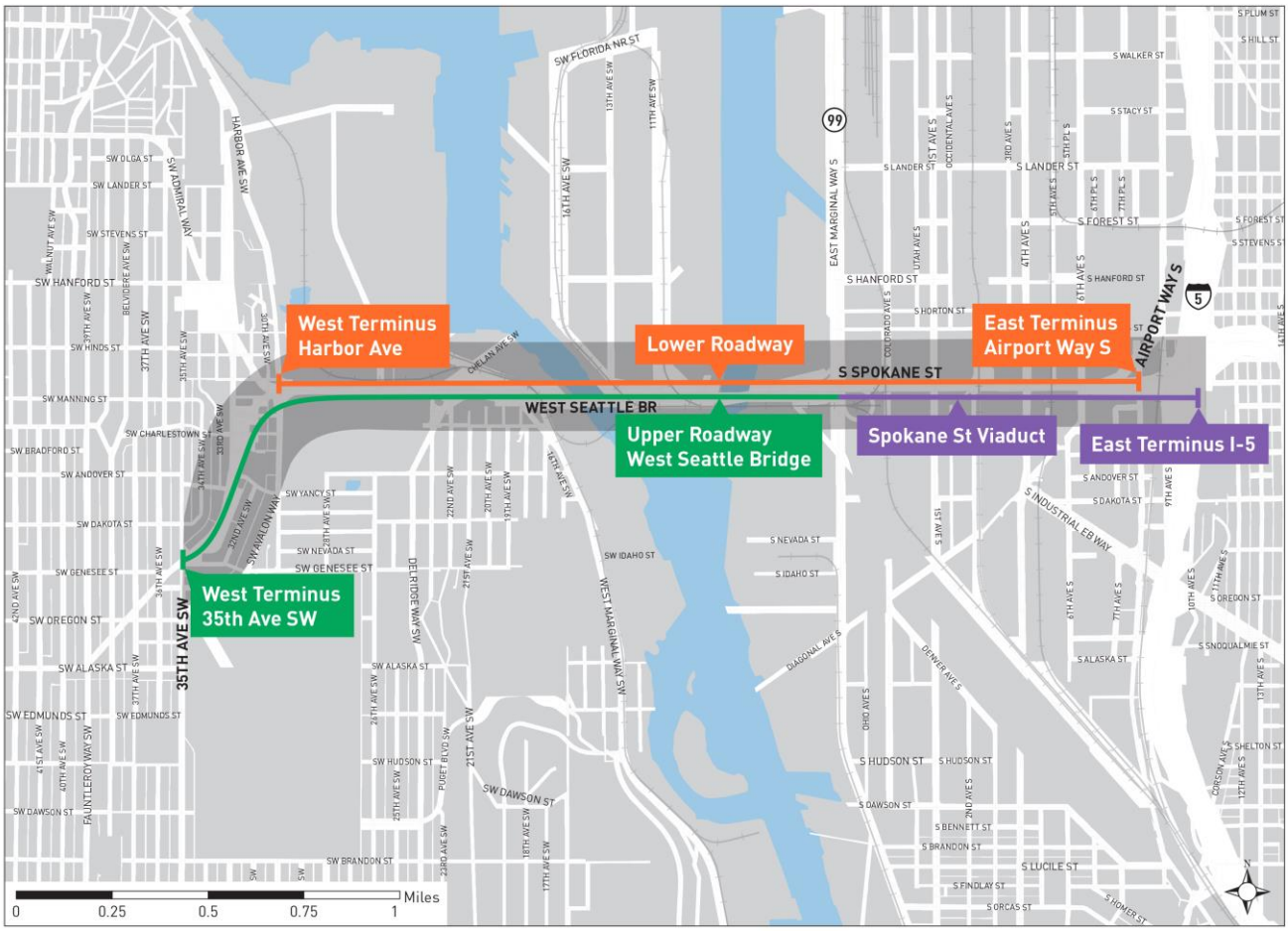
The Whitepaper listed improvements in five categories: 1) transit, 2) non-motorized, 3) transportation operations/incident management, 4) infrastructure investments, and 5) West Seattle Swing Bridge. Projects were identified over four time frames: early start, short term, mid-term and long term. Many of the early implementation recommendations were low/moderate cost or had identified funding. The majority of the other recommendations were tied to the proposed Move Seattle levy, relied on partnership funding, or required new funding.

Corridor Description

SDOT defines the Primary West Seattle Bridge Corridor Area as the West Seattle Bridge/Spokane St Viaduct between 35th Ave SW/Fauntleroy Way SW and I-5, including lower Spokane St. See Figure 1 for the Corridor limits.

Figure 1

WEST SEATTLE BRIDGE/DUWAMISH WATERWAY CORRIDOR PRIMARY AREA



SDOT Progress to Date

SDOT and SPD have already implemented several Investment List projects:

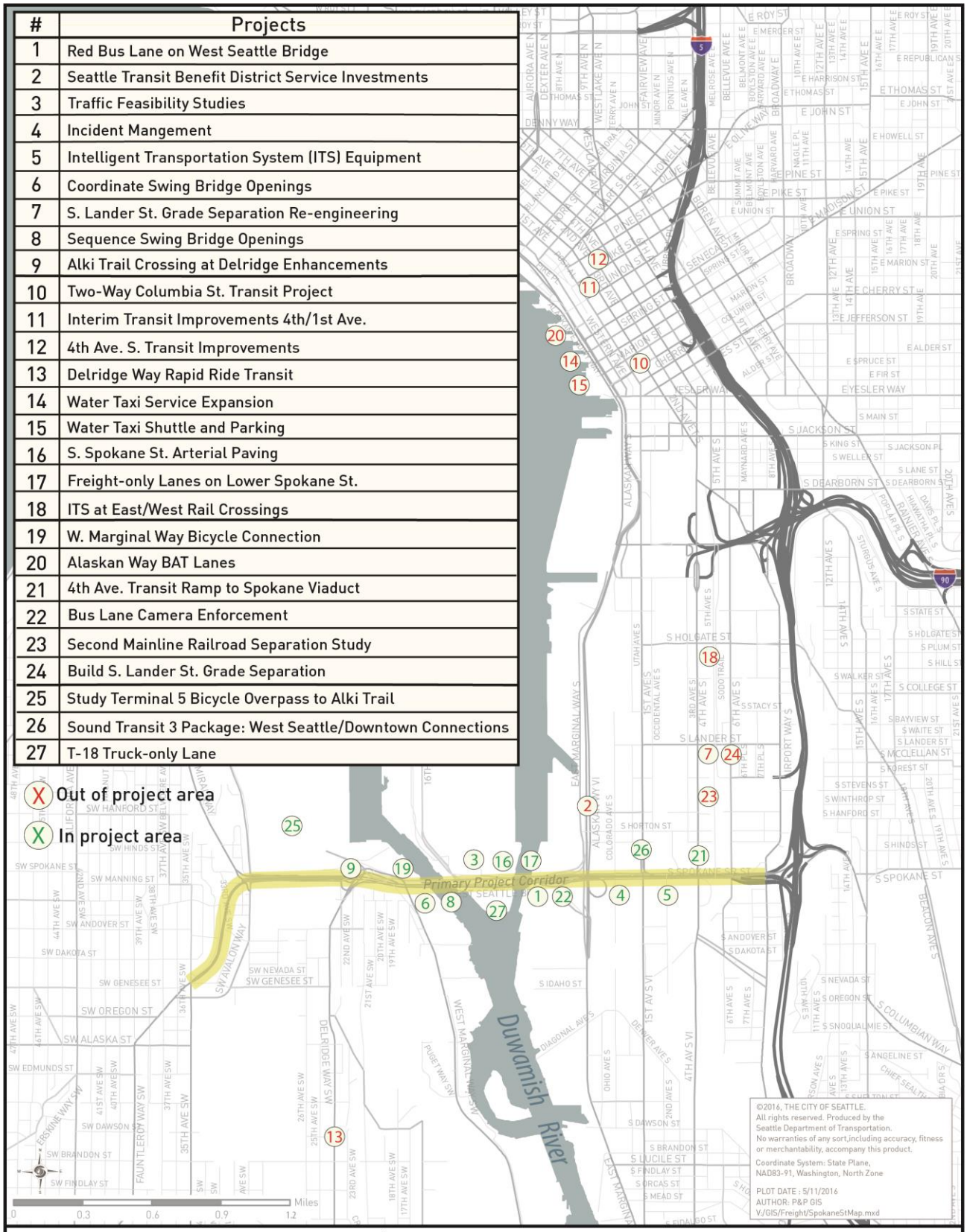
Project #	2015 and 2016 Accomplishments on Whitepaper Projects
	2015
1	Painted eastbound Red Bus Lane and increased police enforcement on West Seattle Bridge
6	Coordinated with Coast Guard and marine vessel operators to obtain cooperation with voluntary avoidance of openings during road traffic peak periods
8	Revised mechanical opening sequence of West Seattle Swing Bridge to reduce the time it takes to open and close it
9	Added enhanced markings of at-grade crossing of Alki Trail at five-way intersection at Delridge Way
	2016
2	The City funded the separation and extension of the RapidRide C and D Lines to improve reliability and connectivity in March 2016. King County Metro revised West Seattle service in the 2015 and 2016 service changes, and with capital improvements on Westlake Avenue, all funded by the Seattle Transportation Benefit District's Proposition One (STBD) funds passed in November 2015. See Appendix B for expanded transit information.
7	SDOT is actively pursuing funds and technical assistance to enable the South Lander Street Railroad Grade Separation across the BNSF Railway mainline tracks to proceed. Current cost estimate is $140.0 million. SDOT recently submitted three grant applications to the state, the region, and USDOT. In addition to the $7.0 M provided from the state's 2015 Connecting Washington Transportation funding package, SDOT has been awarded an $8.0 million grant from the Washington State Freight Mobility Strategic Investment Board (FMSIB). In addition, SDOT has submitted a grant application to the Puget Sound Regional Council of Governments (PSRC) for $14.3 million dollars. SDOT has recently submitted a $55.0 million grant application to the federal FASTLANE program. See Appendix C for further information on cost and current grants.

SDOT has prepared a written progress report on the implementation of the 27 initiatives described in the West Seattle Bridge Corridor Whitepaper and Priority Investment List. The report includes updated information available from SDOT and external agencies including King County.

SDOT is focused on the 15 projects located in the Primary Corridor. Projects outside of the Primary Corridor (12 are listed in the Whitepaper) are not addressed at a similar level of detail, with the exception of the Seattle Transit Benefit District Investments and the Lander Street Grade Separation and Railroad Safety Project. See below for Figure 2, West Seattle Bridge/Duwamish River Corridor Projects, for the Whitepaper Project List and project locations in relation to the Primary Corridor.

Figure 2

#	Projects
1	Red Bus Lane on West Seattle Bridge
2	Seattle Transit Benefit District Service Investments
3	Traffic Feasibility Studies
4	Incident Mangement
5	Intelligent Transportation System (ITS) Equipment
6	Coordinate Swing Bridge Openings
7	S. Lander St. Grade Separation Re-engineering
8	Sequence Swing Bridge Openings
9	Alki Trail Crossing at Delridge Enhancements
10	Two-Way Columbia St. Transit Project
11	Interim Transit Improvements 4th/1st Ave.
12	4th Ave. S. Transit Improvements
13	Delridge Way Rapid Ride Transit
14	Water Taxi Service Expansion
15	Water Taxi Shuttle and Parking
16	S. Spokane St. Arterial Paving
17	Freight-only Lanes on Lower Spokane St.
18	ITS at East/West Rail Crossings
19	W. Marginal Way Bicycle Connection
20	Alaskan Way BAT Lanes
21	4th Ave. Transit Ramp to Spokane Viaduct
22	Bus Lane Camera Enforcement
23	Second Mainline Railroad Separation Study
24	Build S. Lander St. Grade Separation
25	Study Terminal 5 Bicycle Overpass to Alki Trail
26	Sound Transit 3 Package: West Seattle/Downtown Connections
27	T-18 Truck-only Lane



West Seattle Bridge/Duwamish River Corridor Projects

Of the 27 projects listed in the 2015 Whitepaper, 11 projects have significant participation, if not lead responsibility by external agencies. The external agencies include King County Metro, King County Department of Transportation Marine Division and Sound Transit. See Table 1 for the listing of lead agencies.

Table 1 West Seattle Bridge Corridor Agency Responsibilities

#	Project	Seattle	SPD	King County Metro	Sound Transit
1	Red bus lane on West Seattle Bridge				
2	Seattle Transit Benefit District (STBD) Transit Service Investments				
3	Traffic feasibility studies				
4	Incident Management				
5	Install Intelligent Transportation System (ITS) equipment				
6	Swing Bridge openings coordination				
7	S Lander Street Grade Separation Design				
8	Sequencing Swing Bridge openings				
9	At-grade crossing Alki Trail connections at Delridge				
10	Two-Way Columbia Street Transit Project				
11	Interim Transit Improvements 4th_1st Aves				
12	4th Ave S Transit improvements				
13	Delridge Way Rapid Ride transit improvements				
14	Water Taxi service expansion				
15	Water Taxi shuttle service parking				
16	S Spokane Street Arterial Paving				
17	Freight-only lanes on Lower Spokane Street				
18	ITS at east/west rail crossings				
19	W Marginal Way bicycle connection				
20	Alaskan Way BAT Lanes				
21	4th Ave Ramp to Spokane Viaduct				
22	Camera enforcement W Seattle bus lane				
23	Second railroad grade separation study				
24	Build S Lander Grade Separation				
25	Terminal 5 overpass to Alki Trail				
26	ST3 West Seattle / Downtown rail & bus				
27	Terminal 18 Truck-only lane				

Color Code:	
L	Lead agency
I	Implementation role
C	Coordinating agency

SLI Response

As part of the 2016 budget process, Council adopted the West Seattle Bridge Corridor Improvements SLI requesting that SDOT prepare a written progress report on the implementation of initiatives described in the West Seattle Bridge Corridor Whitepaper and priority investment list. In response, SDOT has assembled cost, funding source, and schedule information based on the projects listed in the Whitepaper.

The Council SLI requested information is as indicated in bold italics:

1) ***A description of all anticipated 2016 SDOT maintenance and capital project activities planned for the West Seattle Bridge Corridor ("the Corridor"). The report should identify all planned Corridor project activities included in the 2015 Investment List and any planned Corridor project activities not included in the Investment List.***

As noted above, SDOT has identified four Early Start projects that were implemented in 2015 and two projects anticipated for implementation in 2016 in the Whitepaper.

Consistent with the SLI, SDOT is identifying four additional projects in the Primary Corridor Area that have been selected or programmed since mid-2015 after the Whitepaper was prepared.

See Appendix A for details on the range of 27 projects identified in the 2015 Whitepaper and four additional projects that SDOT has identified during the 2016 review of plans and projects along the Primary Corridor.

In April 2016, the Sustainability and Transportation Committee requested more detailed information on Project #2, the Seattle Transit Benefit District Service Investments, and on the South Lander Street Grade Separation and Railroad Safety Project (listed in the Appendix A as Projects #7 and #24). See Appendix B for Transit Service Benefit District 2015 and 2016 Investments in Seattle, and Appendix C for the South Lander Street Grade Separation and Railroad Safety Project Current Cost Estimate and Current Grants for expanded information about these initiatives.

SDOT is identifying City projects that are identified in other documents in more detail, for example in the Capital Improvement Program, and other SDOT transportation programs. SDOT will follow the City's Race and Social Justice Initiative (RSJI) process to select projects and ensure that project selection considers affected populations and addresses potential adverse outcomes from the projects. RSJI evaluations will be conducted independent of the Whitepaper Progress Report.

2) A comprehensive schedule review defining SDOT's timing for implementing the Investment List's recommendations including any multi-year initiatives or projects that may not have full funding.

The Whitepaper outlined projects over an 11-year timeframe to 2026. SDOT has adjusted the project schedules. The primary source chosen for schedule planning are the timelines identified in the 2016-2021 Adopted CIP, as updated by subsequent project development in 2016. See Appendix D for the West Seattle Bridge / Duwamish Waterway Corridor Projects List Revised Projected Implementation Schedule for SDOT-led projects. Information on scope, cost and schedule information for non-City led projects can be obtained from external agencies.

3) Estimated total investment of City resources in both staff and funding to carry out Investment List recommendations in 2016 and beyond.

Total City investments are difficult to identify at this time for a variety of reasons, including:

- Project cost estimates are not available and/or finalized for all projects on the investment list recommendations;

- City resources for future years are contingent upon future budget actions, budget priorities, and revenue availability; and
- The City's funding strategy for many of the investment list recommendations is contingent on grant and/or partnership funding. As these grant and partnership funding amounts change, the City's investment need will also change.

SDOT has provided funding projections for the Investment List projects and the additional projects that have been identified in the Primary Corridor based on currently available budgets, as either contained in the Investment List or as identified in the 2016-2021 Adopted CIP. Staff costs are included in capital project estimates. See Appendix A for details.

Table 2
West Seattle Bridge/Duwamish Waterway Corridor
Project Cost and Funding

No.	Projects	Estimated Cost	City Resources
	2015 Whitepaper Projects (27)		
1	Red Bus Lane on West Seattle Bridge	$175K	$175K
2	Seattle Transit Benefit District Service Investments	In STBD package	45,000 annual service hours
3	Traffic Feasibility Studies	$100K	$100K
4	Incident Management	Marginal	Existing resources
5	Intelligent Transportation System (ITS) Equipment	$500K	$500K
6	Coordinate Swing Bridge Openings	Marginal	Existing resources
7	S Lander St Grade Separation Design	$15M	$0
8	Sequencing Swing Bridge Openings	$25K	$25K
9	Alki Trail Crossing at Delridge Enhancements	$341K	$341K
10*	Two-Way Columbia St Transit Project	TBD	$0
11*	Interim Transit Improvements 4th/1st Aves	TBD	$0
12*	4th Ave S Transit Improvements	TBD	$0
13*	Delridge Way Rapid Ride Transit Enhancements	TBD	TBD
14*	Water Taxi Service Expansion	TBD	$0
15*	Water Taxi Shuttle and Parking	TBD	$0
16	S Spokane St Arterial Paving	$2.6M	$2.1M
17	Freight-only Lanes on Spokane Street	TBD	Currently unfunded
18	ITS at East/West Rail Crossings	$500K	$100K
19	W Marginal Way Bicycle Connection	TBD	Currently unfunded
20	Alaskan Way BAT Lanes	TBD	TBD
21*	4TH Ave Transit Ramp to Spokane Viaduct	TBD	$0
22*	Bus Lane Camera Enforcement (1)	TBD	$0
23	Second Mainline Railroad Grade Separation Study	TBD	Currently unfunded
24	Build S Lander Grade Separation	$125M	TBD
25	Study Terminal 5 Bicycle Overpass Alki Trail	TBD	$0
26*	Sound Transit 3 Package: West Seattle/Downtown Connections	TBD	$0
27*	Terminal 18 Truck-only Lane	TBD	$0

No.	Projects	Estimated Cost	City Resources
N1	Install Locational Markers on W Seattle Bridge	$25K	$25K
N2	Swing Bridge Scour Repair	$250K	$250K
N3	Fauntleroy Bridge Bearing Pads Replacement	$4.5M	$2.6M
N4	Swing Bridge Painting	$329K	$329K

*SDOT recommends that 9 transit projects and one truck project be removed from all future White Paper project lists and updates as SDOT is not the lead agency.
(1) This item will need State Legislature authorization.

4) A description of the on-going metrics SDOT will use to measure the effectiveness of the recommended investments and a Corridor-wide assessment of traffic conditions for all modes in 2016.

Measures of Effectiveness Metrics

SDOT is using currently available data to describe baseline conditions in the progress report for the range of selected travel modes under City of Seattle's jurisdiction. This current review could serve as a baseline for future consideration of the effectiveness of the investments in the Primary Corridor. See Table 3 for the identification of suggested metrics across a range of modes:

- Transportation data produced by ongoing SDOT data collection practices for both the upper and lower roadways in the Primary Corridor Area
- Annual incidents and incident durations for the upper and lower roadways as reported to the Seattle Transportation Operations Center
- Annual collision history for the upper and lower roadways

External agencies can provide additional data for public transportation functions (Metro, Sound Transit and King County Marine Division), and Port of Seattle can provide trucking details, subject to availability and release from those agencies.

Table 3
West Seattle Bridge Corridor Metrics

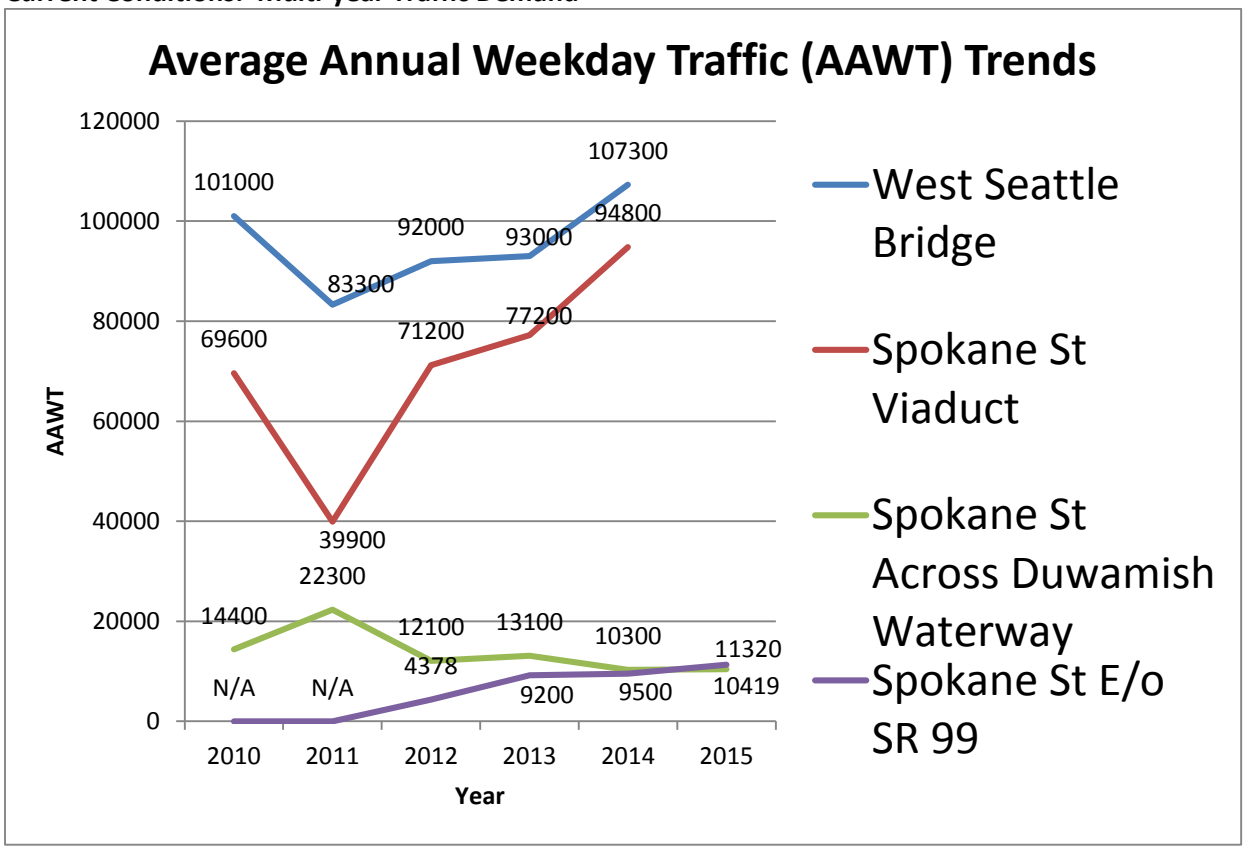
Mode	Function	Metric - What is Measured
Transit	User demand	Riders/day
Pedestrian	Demand	Walkers per hour
Bicycle	Rider demand	Trips/day
General Traffic	Vehicle demand	Vehicles/day
	Incident disruption	Incidents/year
	Incident disruption	Average duration in minutes
	Safety - Collision events	Collisions/year
Truck	Truck demand	Trucks/day
Railroad	Train activity	Trains/day
Swing Bridge	Demand	Average daily openings
	Demand	Annual openings
	Delay, road traffic blockage	Average opening duration in minutes
Port	System demand	Annual container TEU's (footnote 1)

Note: TEU (Twenty Foot Equivalent Unit) is the unit of the capacity of a container, and the industry measure of container volume.

Assessment of Current Traffic Conditions

SDOT has obtained data on conditions for the range of modes operating in the Primary Corridor Area. The West Seattle Bridge is the highest volume roadway owned and operated by the City of Seattle. Figure 3, Multi-year Traffic Demand, illustrates the annual variance in West Seattle Bridge, Spokane St Viaduct and Lower roadway segment traffic volumes over a six-year period. Note that Spokane St Viaduct construction in 2011-2012 induced drivers to shift to other routes.

Figure 3
Current Conditions: Multi-year Traffic Demand



The following data in Table 4 represents relatively recent travel conditions in the Primary Corridor based on the previously identified metrics and related data collected from 2013-2015. Note that pedestrians and bicycles are not allowed on the upper roadways.

Table 4
West Seattle Bridge Corridor Current Travel Conditions

Mode	Metric	Location	Demand	Year
Transit	Riders/day	West Seattle Bridge Corridor	29,300	N/A
Bicycle	Trips/day	Swing Bridge	700 (1,200 on peak day)	2014
Traffic	Daily volume	WSB: west of SR 99	107,300	2014
	Daily volume	Viaduct	94,800	2014

Mode	Metric	Location	Demand	Year
	Daily volume	S Spokane: east of 1st Ave S	9,500	2014
	Daily volume	WSB: east of 35th SW	52,700	2014
	Daily volume	35th SW of Avalon Way	23,600	2014
	Collisions/year	WSB and Spokane St Viaduct	56	2015
	Collisions/year	Surface Spokane	64	2105
	Incidents/year	WSB	117	2015
	Incident average duration in minutes	WSB	46.7	2015
Truck	Trucks/day	West Seattle Bridge	TBD	TBD
	Trucks/day	Spokane St Viaduct	TBD	TBD
	Trucks/day	Swing Bridge	3,209	2014
	Trucks/day	E Duwamish Waterway Bridge	4,800	2014
	Trucks/day	Fauntleroy Way SW	1080	2015
Rail	Trains/day	Spokane St Mainline	65-70	2015
Marine	Bridge Average Daily openings	Swing Bridge	7	2014
	Bridge Annual Openings	Swing Bridge	1,831	2014
	Opening average duration minutes	Swing Bridge	11-12.8	2014
Ferry	Annual Vehicles	Fauntleroy-Vashon Ferry	1,107,000	2015
Water Taxi	Annual Riders	Water Taxi	313,347	2015
Port	Annual TEU's	Seattle Harbor	1,592,753	2013
	Annual TEU's	Seattle Harbor	2,153,685	2010

Note: Pedestrian counts are not available at this time. These counts are infrequently conducted, for special studies.

Closing

SDOT greatly appreciates the City Council budget decision to provide $600,000 to improve future modal conditions in the West Seattle Bridge Corridor. SDOT is proceeding with the ITS investments ($500,000) and is responding to the Green Sheet proviso in a separate transmittal to release the remaining $100,000 funding for the additional traffic feasibility studies.

SDOT greatly appreciates the support the Council Sustainability and Transportation Committee and Council staff who have provided assistance with defining the scale and products for the assessment of transportation improvements in the West Seattle Bridge Corridor.

Credits

SDOT, SPD and CBO staff who participated in drafting of this report are:

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Appendices:

Appendix A - West Seattle Bridge Duwamish River Corridor Improvements Projects Progress Report Table

Appendix B - Transit Service Benefit District 2015 and 2016 Investments in Seattle

Appendix C - South Lander Street Grade Separation and Railroad Safety Project Current Cost Estimate and Grants

Appendix D - West Seattle Bridge / Duwamish Waterway Corridor Projects List Revised Projected Implementation Schedule

Appendix A
West Seattle Bridge Duwamish River Corridor Improvements
Projects Progress Report Table

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
1	**Red bus lane on West Seattle Bridge**	Paint existing eastbound lane red to more clearly designate the bus lane and potentially reduce violations.	SR 99 to Harbor Ave SW	Completed Installed in Corridor Primary Area.	$175,000	$175,000/$0 SDOT Operations and Maintenance (O&M) Budget	Completed 9/21/15	Maintain bus speeds and schedules on exclusive eastbound bus lane; and supplement lane enforcement and public recognition.
2	**Seattle Transit Benefit District (STBD) Service Investments**	Improve frequency and reliability on RapidRide C Line and Routes 21, 55, 60, 120. Restructure C Line to originate from South Lake Union instead of Ballard for to improve reliability and access to employment centers. Implement dedicated	Improves patron service between Downtown Seattle and West Seattle, and along the West Seattle Bridge Corridor.	Accomplished in the 2015 and March 2016 Metro Service Changes. See Appendix B for the list of Corridor service improvements.	Improvements included in STBD annual $40 million investment	Improvements were included in STBD annual $40 million investment.	Accomplished in the March 2016 Metro Service Change	Restructured C Line to originate from South Lake Union instead of Ballard for improved reliability and access to employment centers. Increased W Seattle service

[1] City funding beyond 2016 is contingent upon future appropriations and is subject to change.

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
		bus lanes on Westlake Ave						
3	**Traffic Feasibility Studies** **Note: Please refer to SDOT transmittal on the West Seattle Bridge Corridor Congestion Management Proviso – Green Sheet 95-1-B-1 for the description of four (4) proposed feasibility studies.**	Conduct traffic feasibility studies to determine operational, design and management improvements for Corridor road, rail, truck and Swing Bridge elements. The selected studies scopes and schedules are presented in a separate response to Council Budget Proviso.	The Primary Corridor is bounded by 35th Ave SW to I-5, for both lower and upper roadways.	Scoping phase. SDOT expects to initiate analysis in 2016, pending Transportation Committee approval to proceed.	City Council had approved $100,000 for the studies, subject to the lifting of the Budget Proviso.	$100,000 City funding budgeted in 2016/ $0 .	SDOT would conduct studies in 2016, subject to funding approval.	Increase safety, mobility and reliability on the Upper and Lower Corridor roadways through improved traffic management and diligent coordination of competing modes.
4	**Incident Management**	Refer to list of nine (9) recommended SPD and SDOT operational, training and tow truck response improvements for enhanced incident	In Primary Corridor and in City overall as appropriate.	Implementation phase. Several revisions have been implemented in SDOT and SPD incident	Not available	Not available	Several revisions have been implemented in SDOT and SPD incident manageme	Incident reduction, improved response time and reduced impact on modal travel.

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
		management through corridor and throughout the city. See improvements below. Refer to 2015 Whitepaper for detailed descriptions of improvements.		management procedures.			nt procedures in 2015 and 2016. SDOT and SPD are proceeding with a joint work program to make improvements.	
4.1	**4.1 Utilize SDOT Emergency Laborers (E-Laborers) and cross-train with WSDOT Incident Response personnel to supplement on-scene response to incidents.**	Utilize SDOT Emergency Laborers (E-Laborers) and cross-train with WSDOT Incident Response personnel to supplement on-scene response to incidents. Outfit SDOT E-Laborers with sirens, extra gas and other equipment.	See above #4	See above #4	See above #4	See above #4	See above #4	See above #4
4.2	**4.2 SDOT should provide "Gridlock Alerts".**	Provide citywide notices of either major planned events that will cause congestion or following a major traffic incident that	See above #4	Already being done through: website, social media, special event website, and Alert Seattle. SDOT also	See above #4	See above#4	See above #4	See above #4

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
		causes widespread strain on the road network. Consider "emergency level" communications that can reach most cell carriers.		coordinates with SPD, SFD, transit agencies, and WSDOT to disseminate information.				
4.3	**4.3 Using available travel time and traffic flow data, SDOT should identify typical days of the week or times of the year with high congestion.**	Identify typical days of the week or times of the year with high congestion in certain locations, and put extra focus on quick incident response times for them at those times. Share this data in advance regularly with SPD.	See above #4	SDOT and SPD Traffic Section have a monthly coordination meeting. This is an on-going topic at that meeting	See above #4	See above #4	See above #4	See above #4
4.4	**4.4 Create staging locations for response vehicles.**	Create staging locations for response vehicles (such as safety service patrols) to quicken response to incidents as they occur.	See above #4	See above #4	See above #4	See above #4	See above #4	See above #4
4.5	**4.5 Develop procedures for handling commercial vehicle backups on city**	Develop procedures for handling commercial vehicle backups on city streets: pre-plan	See above #4	See above #4	See above #4	See above #4	See above #4	See above #4

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
	streets: pre-plan staging areas, traffic control, etc. Provide traffic control permits to the Port of Seattle.	staging areas, traffic control, etc. SDOT can provide permits to the Port of Seattle for traffic control on adjacent City streets.						
4.6	**4.6 Cross train Port commercial vehicle inspectors with Washington State Patrol (WSP) Commercial Vehicle Enforcement (CVE) officers in joint operations.**	Cross train Port commercial vehicle inspectors with WSP CVE officers in joint operations near and around the Port to reduce equipment violations and protect the City's roadway infrastructure.	See above #4	Joint operations and training efforts took place late in 2015 and also in Q1 2016 with WSP, SPD, Port of Seattle and others. Will continue to occur periodically. Heavy Haul permit legislation also included an additional CVE position for SDOT.	See above #4	See above #4	See above #4	See above #4
4.7	**4.7 Create travel information applications.**	City agencies should partner with the private sector to create apps and spread information on travel conditions to private-sector employees (i.e. to switch to transit or work off-site).	See above #4	SDOT Information is currently shared through: website, social media, special event website, and Alert Seattle. SDOT is investigating other opportunities to expand available	See above #4	See above #4	See above #4	See above #4

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
				information via private sector channels.				
4.8	**4.8 Determine the cost and benefit of on-call staged tow truck.**	Perform tow truck economic analysis	See above #4	See above #4	See above #4	See above #4	See above #4	See above #4
4.9	**4.9 Provide quick response capability for large vehicle incidents and removal.**	Amend city towing contract to provide quick response capability for large vehicle incidents and removal. Examples are truck tractor trailer combinations and construction trucks.	See above #4	See above #4	See above #4	See above #4	See above #4	See above #4
5	**Intelligent Transportation System (ITS) Equipment**	Design and install three (3) electronic/Dynamic Message Signs (DMS), and seven (7) travel time data collectors.	S Spokane St Corridor between Airport Way S and Port terminals	Pre-design is underway. Implementation is funded. SDOT has identified the intended scope and general locations of the ITS devices.	$500,000	The Council Green Sheet added $500,000 to install ITS equipment	SDOT anticipates the installation of most of these devices by the end of 2016, with the exception of one	Collect and display real-time travel-time information to drivers and the general traveling public. Advise drivers when Swing Bridge is closed to traffic.

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
							DMS that will be installed in 2017, in conjunction with other planned improvements.	
6	**Coordinate Swing Bridge Openings**	Coordinate with working vessel operators that are frequent users of the Swing Bridge to understand their planned sailing times and develop a cooperative relationship to optimize coordination of respective traffic and ship operations.	Spokane Street Swing Bridge over the Duwamish River	Completed City communications obtained marine cooperation and instituted Coast Guard alert system to advise ship staff of road traffic events so they may adjust sailing time. Ship staff response is voluntary.	N/A	Cost of work was absorbed in SDOT O&M Budget	Completed 8/2015	This will allow SDOT to provide early warning and improved coordination of bridge openings should there be a traffic incident in progress.

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
7	**S Lander St Grade Separation and Railroad Safety Project Design**	Initiate design phase of S Lander Street grade separation project (4-lane grade-separated roadway with bicycle and pedestrian facilities across S Lander Street	S Lander St between 1st Ave S and 4th Ave S, at BNSF Railway Mainline tracks	In design phase Three grants submitted; design update and value engineering assessment are underway.	$15,000,000 (2016 estimate)	$0 / Non-City funding Grant applications $7.0 M from WSDOT 2015 Connecting Washington package $8.0 M from State Freight Mobility Investment Board Both awarded. $55.0 M from United States Department of Transportation See Appendix C for South Lander St Grade Separation cost and grant data.	Design Completion Q42017	Achieve separation of rail and all other traffic to benefit truck and SDOT travel; improve rail safety; and reduce cost of earlier design
8	**Sequencing Swing Bridge Openings**	Change operations sequencing of Swing Bridge opening functions. Maintain overall safety, but	Spokane Street Swing Bridge over the	Completed 2/2016 SDOT will evaluate annual	$25,000	SDOT O&M Budget	Completed 2/2016	SDOT revised bridge equipment and operating sequence to

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
		reduce some consecutive movements and make them concurrent.	Duwamish River	operational benefit to road traffic of Bridge change by 12/2016.				reduce total opening time and reduce traffic and bike delay.
9	**Alki Trail Crossing At Delridge Enhancements**	Enhance at-grade crossing for trail users with new markings and related traffic improvements. Design and construction, in two phases	Five-way intersection at Delridge Way SW/Chelan Ave SW/SW Spokane Street/W Marginal Way SW and Port of Seattle Terminal 5.	Phase 1 completed 12/2015 Phase 2 is in design Port of Seattle is recommending closure of W Marginal Way, north leg of approach to T-5 Gates	Phase 1: : $241,000 Phase 2: $100,000	Phase 1: $241,000 Phase 2: $100,000 No external funds	Phase 1 complete 12/2015 Phase 2 implementation: 2017	Improved safety for non-motorized and motorized traffic.
10	**Two-Way Columbia St Transit Project**	Improvements to convert Columbia Street to two-way allowing for Business Access and Transit (BAT) lanes in both directions from 1st to 3rd Avenues.	Outside Corridor Primary Area. Project is In Downtown Seattle	King County Metro Lead. Exclude from future Whitepaper Projects List.	TBD	$0/ Metro funding	To Be Determined	Improve downtown transit service.

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
11	**Interim Transit Improvements 4th/1st Aves**	Construct street improvements such as SDOT-channelization, parking removal, right turn improvements, queue jumps and a bus-only turn lane.	Outside Corridor Primary Area in Downtown Seattle on 4th Avenue S / 1st Avenue S and 1st Avenue / Columbia Street	King County Metro Lead Project in discussion and not committed. Exclude from future Whitepaper Projects List	TBD	$0/ Unfunded		Improve transit to allow transit to move faster and more reliable in the 9-15 month period after SR 99 tunnel opens but Alaskan Way is not available.
12	**4th Ave S Transit improvements**	Construct street improvements including bus lane extension and revised signage on 4th Avenue.	Outside Corridor Primary Area in SODO	King County Metro Lead Project in discussion and not committed Exclude from future Whitepaper Projects List.	TBD	$0 / Unfunded	Unknown	Improve transit service
13	**Delridge Way Rapid Ride Transit Enhancements**	Construct street Improvements – bus lane extension, queue jump curb bulbs, and review parking restrictions.	Outside Corridor of Primary Area. Project ends at SW	King County Metro Lead Proposed service Project is in discussion; implementation	TBD	TBD	Unknown	Improve transit service

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
			Spokane St and Delridge Way SW intersection	not committed. Joint planning underway. Exclude from future Whitepaper Projects List.				
14	**Water Taxi Service Expansion**	King County Marine Division to explore the expansion of service to allow for a two-boat schedule with service every 15 minutes instead of every 30 minutes	Outside Corridor Primary Area	King County Lead Project in discussion and not committed Exclude from future Whitepaper Projects List.	TBD	$ 0 / Unknown	Unknown	Increase public transportation service.
15	**Water Taxi Shuttle and Parking**	Expand Water Taxi shuttle service area and parking near water taxi dock (only necessary with water taxi service expansion).	Outside Corridor Primary Area	King County Lead Project in discussion and not committed Exclude from future Whitepaper Projects List.	TBD	$0 / Unknown	Unknown	Increase public transportation service.
16	**S Spokane St Arterial Paving**	Design and reconstruct S Spokane Street Lower Roadways;	SW Spokane St east of Swing	In design phase; construction programmed for 2016.	$2.7 million	$2.1 million / FMSIB funding:$580,000	Construction completion 9/2016	Improve infrastructure and rail crossings for

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
		improve pedestrian crossings at ramps to Upper Roadways; reconstruct two rail crossings; and build raised bicycle crossing on Spokane St.	Bridge to E Marginal Way S	E Duwamish Waterway Bridge was rebuilt in 2013.				traffic, trucks and non-motorized travel on Major Truck Street and Heavy Haul Network route.
17	**Freight-only lanes on Spokane St**	Undertake pilot project to determine the feasibility of installing freight-only lanes on Lower Spokane Street; and if deemed feasible, would implement modifications to roadway channelization, install traffic signal and signing modifications and provide detection and variable message signs. Study, design and construction.	S Spokane St, Harbor Ave SW to Airport Way S	Unfunded. Seattle Industrial Areas Access Study recommendation, not scoped or scheduled. Requires further feasibility study prior to programming and funding this improvement.	Total Cost: $4,200,000 Feasibility Study estimate : $200,000 Implementation estimate: $4 million	Unknown at this time, TBD	Unknown at this time.	Improve truck travel time and operating reliability to benefit Port, and West Seattle and area trucks.

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
18	**ITS at East/West Rail Crossings**	Install video detection, blank-out message signs that display real-time information and adaptive signal timing at signalized intersections adjacent to SODO east-west arterial street crossings of mainline railroad tracks.	Outside Corridor Primary Area except for S Spokane St mainline rail crossing	Design is funded Construction unfunded	$500,000	$100,000 approved within SDOT Next Gen ITS Budget Remainder TBD; sources undetermined	2018, Subject to additional funding commitments. Source and approval of additional funding TBD.	Alert travelers to impending train crossings and duration of street closing to reduce delay, traffic queuing and alert emergency responders of blockage.
19	**W Marginal Way Bicycle Connection**	Design and construct bicycle and pedestrian connection.	Along S Spokane St Port Terminal 5 Ramp to W Marginal Way S	Concept plan completed; cost estimate to be confirmed in design phase. Project currently unfunded and not committed.	TBD in future design phase	$0 Currently unfunded	TBD	Would create a connection from West Seattle trail and Duwamish trail to Alki Trail that eliminates the need for cyclists to bypass the existing five-way intersection
20	**Alaskan Way BAT Lanes**	Construct Business and Transit (BAT) lanes in both directions	Outside Corridor Primary Area on Alaskan Way	Environmental review process is underway for Central Waterfront.	Unknown; cost is included in Seattle Waterfront Project	Amount unknown / Non–city funds unknown. Office of the Waterfront is lead	Unknown	Public transportation improvement

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
				Exclude from future Whitepaper Projects List.				
21	**4th Avenue Transit Ramp to Spokane Viaduct**	Study, design and construct direct southbound transit ramp connection from 4th Ave to westbound Viaduct	Located in Corridor Primary Area 4th Ave S and Spokane St Viaduct	Concept. King County Metro Lead Exclude from future Whitepaper Projects List.	Unknown, to be determined by future feasibility study and design.	$0 / Unknown other sources	Unknown, to be determined by future feasibility study and funding identification	Improve transit travel time and reliability to West Seattle
22	**Bus Lane Camera Enforcement**	Enforce West Seattle eastbound bus lane traffic restrictions.	West Seattle Bridge	Concept level; currently a proposal. Exclude from future Whitepaper Projects List. King County Metro Lead Project not committed and unfunded. Requires legislative authority.	Unknown	$0 / Unknown other sources	2019-2022	Increase enforcement capability with intent to improve transit travel time and reliability

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
				Requires further refinement of scope and cost estimates for processing State legislation, and implementation, if authority is granted.				
23	**Second Mainline Railroad Grade Separation Study**	Conduct a need and feasibility study for another crossing of Burlington Northern Santa Fe (BNSF) mainline railroad tracks in addition to S Lander St Separation.	Outside Corridor Primary Area Study area S Atlantic St to S Horton St	Currently a proposal, not funded and not programmed. Exclude from future Whitepaper Projects List This project is identified in the SDOT 2014 Large Capital Projects Prioritization list.	TBD in future when study is programmed	$0 Unfunded and Non-committed	2019-2022 for study.	Reduce traffic and non-motorized vehicle delay, improve reliability and improve safety for SODO area travel.
24	**Build S Lander Grade Separation**	Construct a 4-lane grade-separated roadway with bicycle and pedestrian facilities across S Lander Street.	S Lander Ave S between 1st Ave S and 4th Ave S, at BNSF Railway Mainline tracks	In design phase Three grants submitted; design update and value engineering assessment are underway.	$125 million construction $140 million total current	$0 current City Investment/ Grant applications SDOT submittals: 1. S Washington State Freight Mobility Strategic	201-89-2019	Achieve separation of rail and all other traffic; improve railroad safety; and reduce cost of original design

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
					design and construction estimate This estimate is being updated within the current design process.	Investment Board (FMSIB) for $8.0 million (recently awarded} 2. Puget Sound Regional Council of Governments (PSRC) for $14.3 million 3. State of Washington has awarded $7 million from the 2015 legislative package. 4. See Appendix C, South Lander Street Grade Separation and Railroad Safety Project Current Cost Estimate for spending plan and grant information.		
25	**Study Terminal 5 Bicycle Overpass to Alki Trail**	Perform a feasibility study of elevated Trail to be cantilevered from	SW Spokane St:	Conceptual proposal. Not funded and not committed	TBD when programmed in future	$0 Unknown	TBD	Determine if the surface intersection bypass is

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
		Terminal 5 overpass truck ramp over W Marginal Way SW	Port of Seattle Terminal 5 truck ramp to W Marginal Ave SW					feasible and affordable prior to commitments to future phases.
26	**Sound Transit 3 package: West Seattle/Downtown Connections**	Construct light rail and provide early Implementation bus improvements	Downtown to West Seattle Community	Sound Transit is lead. Light Rail to West Seattle is included in ST3 package for potential public approval in Fall 2015, per Seattle request. Exclude from future Whitepaper Projects List.	TBD Refer to Sound Transit for information	$0 / TBD	2026	Increased people moving capacity. Reduce travel time and respond to West Seattle growth.
27	**T-18 Truck Only Lane**	Concept proposal. Work with the Port of Seattle to build a west bound lane for trucks only. Provide additional vehicle capacity by adding another lane on S Spokane St.	Lower Spokane St, E Marginal Way S to Port terminal entrances.	Concept only Not committed and unfunded. Port of Seattle will explore future truck needs and solutions during the Terminal 5 DEIS processes currently underway.	TBD	$0 / $0	Unknown	Eliminate truck queues blockages of other westbound traffic.

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
				Exclude from future Whitepaper Projects List.				
New Corridor Improvements identified in 2016 Progress Report – 5 Projects								
N1	**Install locational markers**	Install locational markers for drivers on West Seattle Bridge and Spokane Street Viaduct.	West Seattle Bridge and Spokane Street Viaduct	Markers have been designed and fabricated. SDOT will install on upper roadways in 2016.	$25,000	SDOT is funding the installation with 2016 Operating and Maintenance funds.	2nd Quarter 2016	Drivers will more readily recognize and report their stopped vehicle location, supporting reduced incidents and reducing emergency response time.
N2	**Swing Bridge Scour Repair**	Duwamish River has deposited silt in an area that will increase the vulnerability of the bridge to damage during an earthquake. SDOT will remove the silt and repair erosion as	Spokane Swing Bridge	Programmed improvement	$250,000	$250,000 of City waterway funds were allocated in the 2016 Adopted Budget.	2017	Reduce risk of future bridge failure.

#	Project Title	Description	Location To/ From	Status	Cost Estimate	Funding City/Non-City [1]	Implementation Timeframe	Benefits
		a construction project.						
N3	**Fauntleroy Bridge Bearing Pads Replacement**	This is repair of an original seismic Major Maintenance improvement done in 2012.	W Seattle Bridge Delridge Way to SW Charlestown	In construction	$4,525,000	$2,642,767 City Bonds /Balance of $4,525,000 Source: CIP Contractor Settlement	11/2016	Increase seismic confidence and survivability
N5	**Swing Bridge Painting**	Design and construction Project involves painting the catwalk that is restricted to authorized personnel, center lock, and the pedestrian/bike path on the Swing Bridge.	Lower Swing Bridge	Improvement is programmed. Swing Bridge is one of 5 other sites that is being painted as part of this paint contract.	$329,000	Portion of CIP $1.2 M multi-bridge project Source: cumulative Reserve Sub fund - Real Estate Excise Tax II	2016	Major maintenance of asset. Swing Bridge is one of 5 other sites that is being painted as part of this paint contract.

Notes:
SDOT recommends removal of the following 9 transit projects and one truck project identified in the original 2015 list of 27 projects, from all future Whitepaper Projects List and Progress Reports. These projects could be independently monitored and reported on in the future relationships and communications between the City of Seattle and the respective governing agencies. Projects #10 through #26 are under the guidance of agencies outside of City of Seattle responsibility. The governing bodies and management of King County Metro, Sound Transit and King County Marine Division are responsible for program and project decisions on services and improvements, including environmental review, funding, implementation, scheduling and operations. See table below.

#	Projects - 11
10	Two-Way Columbia St Transit Project
11	Interim Transit Improvements 4th/1st Aves
12	4th Ave S Transit Improvements
13	Delridge Way Rapid Ride Transit
14	Water Taxi Service Expansion
15	Water Taxi Shuttle and Parking
21	4th Ave Transit Ramp to Spokane Viaduct
22	Bus Lane Camera Enforcement
26	Sound Transit 3 Package: West Seattle/Downtown Connections
27	T-18 Truck-only Lane

SDOT/TOD/rhb
V16
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Appendix B
Transit Service Benefit District 2015 and 2016 Investments in Seattle

Route	Areas Served	STBD Hours Added	Improvements	Annual Ridership	Percent Ridership Growth*
C Line	Westwood Village, Fauntleroy, Morgan Junction, Alaska Junction, Downtown, South Lake Union	33,500	- Every 7-8 minutes in the peak period - Every 12 minutes during weekday midday - Every 15 minutes or better on evenings, 7 days per week until 11:30 - Every 12 minutes or better on Saturdays - Every 15 minutes or better on Sundays - More reliable travel times, 7 days per week, due to split from D Line - Utilizes Westlake Ave transit lanes to improve reliability	2.83M	+7%
21	White Center, Westwood Village, Downtown	3,100	- More reliable travel times on Saturdays - Every 15 minutes on Sundays	1.21M	+7%
21EX	Arbor Heights, Westwood Village, Downtown	350	- More reliable travel times Monday-Friday	258,000	-2%
37	Alaska Junction, Alki, Downtown	100	- More reliable travel times Monday-Friday	19,000	0%
55	Admiral District, Alaska Junction, Downtown	2,100	- Add trips on weekday mornings and afternoons - More reliable travel times Monday-Friday	247,000	+31%
56	Alki, Admiral District, Downtown	400	- More reliable travel times Monday-Friday	185,000	-4%
57	Alaska Junction, Admiral District, Downtown	250	- More reliable travel times Monday-Friday	107,000	+18%
116EX	Fauntleroy Ferry, Downtown	0		146,000	+2%
118EX	Tahlequah, Downtown	0		51,000	+6%
119EX	Dockton, Downtown	0		27,000	+117%
120	Burien, White Center, Westwood Village, Downtown	2,700	- Every 15 minutes or better on weekdays	2.78M	--**
125	Westwood Village, Downtown	2,900	- Every 30 minutes or better on weekends	562,000	26%

Notes:

*Percent ridership growth from the Fall 2014 service change (September 2014 to February 2015) to Fall 2015 service change (September 2015 to March 2016) for routes that received investment.

**Investments in routes 120, 131, and 132 went into effect in March 2016.No data available at this time.

Source: SDOT, Transit and Mobility Division, May 11, 2016

Appendix C
South Lander Street Grade Separation and Railroad Safety Project
Current Cost Estimate and Current Grants

Phase	**South Lander Street Project Budget (spending in millions of dollars)**				
Project Phase Completion	**2017**	**2018**	**2019**	**2020**	**2021**
Preliminary Engineering & Environmental	$14.3				
Right of Way	$0.7				
Construction	$3	$75	$45		
Closeout				$1	$1
				Total	**$140**

Notes:
1. The actual physical construction activity is projected to be 2018-2019.
2. The table summarizes the budget breakdown for the duration of the project. Of the total $140 million project cost, $15 million (11%) would be allocated to project design and the remaining $125 million (89%) would be allocated to project construction.
3. The current cost estimates are based on early design undertaken over eight years ago with updates for inflation and current project priorities.
4. The project cost estimates will be refined as the design process is completed and funding commitments are achieved. The future project cost and spending plan will be subject to design completion, confirmation of project cost, policy decisions, securing all necessary funding from partner agencies, and satisfactory completion of environmental review.

Grant Applications

SDOT with support of many partners and extensive community leadership, is pursuing several grant opportunities. SDOT is actively pursuing funds and technical assistance to enable the South Lander Street Grade Separation across the BNSF Railway mainline tracks to proceed. SDOT recently submitted two grant applications to the state and the region. SDOT has submitted applications to the Washington State Freight Mobility Strategic Investment Board (FMSIB) for $8.0 million dollars and to the Puget Sound Regional Council of Governments (PSRC) for $14.3 million dollars. SDOT has recently received notice that the State of Washington FMSIB has approved the $8.0 M grant.

The State of Washington had previously awarded Seattle $7 million from the 2015 Connecting Washington legislative funding package.

SDOT has applied to the Federal Government for $55 million through the Federal Highway Administration FASTLANE grant program to complete this critical project. The Fixing America's Surface Transportation Act or "FAST Act" establishes the Nationally Significant Freight and Highway Projects. The NSFHP program is authorized at $4.5 billion through 2020. The program provides financial assistance—competitive grants, known as FASTLANE grants, or credit assistance—to nationally and regionally significant freight and highway projects that align with the program goals. The City is requesting federal funds through the NSFHP program to construct this project.

To view the Seattle FASTLANE grant application, please see this site:

http://www.seattle.gov/transportation/docs/lander/SLanderStreetGradeSeparationRailroadSafetyProject_Final.pdf

Appendix D

West Seattle Bridge Corridor Project List Revised Projected Implementation Schedule

#	2015 WHITE PAPER PROJECTS	Early Start		Short Term (1-3 years):			Mid-Term (4-6 years):			Long Term (7 to 10 years):			
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
1	Red bus lane on West Seattle Bridge												
2	Seattle Transit Benefit District(STBD)												
3	Traffic feasibility studies												
4	Incident Management												
5	Install Intelligent Transportation System (ITS) equipment												
6	Swing Bridge openings coordination												
7	S Lander Street grade separation design												
8	Sequencing Swing Bridge openings												
9	At-grade crossing Alki Trail connections Delridge construction												
16	S Spokane Street Arterial Paving												
17	Freight-only lanes on Lower Spokane Street		TBD										
18	ITS at east/west rail crossings												
19	W Marginal Way bicycle connection		TBD										
20	Alaskan Way BAT Lanes												
23	Second railroad grade separation study												
24	Build S Lander Grade Separation												
25	Terminal 5 overpass to Alki Trail design and construct		TBD										
	ADDITIONAL SDOT PROJECTS												
N1	Install locational markers												
N2	Swing Bridge Scour Repair												
N3	Fauntleroy Bridge Bearing Pads Replacement												
N4	Swing Bridge Painting												

Note: Revised 2016 timelines per current project estimates