King County

Metropolitan King County Council

STAFF REPORT

AGENDA ITEM: _____ **PREPARED BY:** Paul Carlson

PROPOSED No.: 2009-0610 **DATE:** November 23, 2009

SUBJECT

A MOTION expressing King County's support for a preferred design of the State Route 520 bridge replacement and high-occupancy vehicle project.

SUMMARY

Proposed Motion 2009-0610 expresses King County's support for a proposed option for the west side alignment of the SR 520 floating bridge replacement project. The alignment from I-5 to the east end of Lake Washington is known as the SR 520 bridge replacement and HOV project. The motion expresses support for an alignment and transit-supportive features that are included in the "Option A+ Hybrid" proposal. The King County Department of Transportation ("KCDOT") endorses this alternative as the one that is most affordable and most beneficial to transit operations. On November 17, the Option A+ Hybrid was recommended to move forward by the Legislative Workgroup that is tasked with reporting to the governor and legislature by January 1, 2010 on design and financing options for SR 520.

BACKGROUND

The Washington State Department of Transportation ("WSDOT") has conducted a variety of Trans-Lake and SR 520 studies, which led to the selection of a 6-lane preferred alternative for construction in this corridor. On March 3, 2008, Governor Gregoire accelerated the timeline to start pontoon construction for a replacement floating bridge structure in 2009. Final agreement on the west side portion of the project is still under discussion.

Some of the significant developments in the SR 520 process include:

- Urban Partnership Agreement – in 2007, the Federal Highway Administration selected the SR 520 corridor for an Urban Partnership Agreement and grant focused on providing congestion relief through

Tolling, Technology, Transit and Telecommuting. The partnership includes WSDOT, the Puget Sound Regional Council, and King County. In addition to funding the acquisition of new transit vehicles, this agreement relies on tolling the existing corridor and bridge.

- In 2007, the Legislature and Governor directed the SR 520 Program to enter mediation to assist in developing a bridge replacement impact plan and to develop a Draft High Capacity Transit Plan. In December 2008, the SR 520 Westside Project Impact Plan was submitted to the Governor and the Joint Transportation Committee; it recommended three Westside alignment alternatives (A, K, and L). On December 31, 2008, the SR 520 High Capacity Transit Plan was submitted to the Legislature by WSDOT, Sound Transit, KCDOT, and the University of Washington. The plan calls for increased transit service on the corridor, construction of a Montlake Multimodal Center transit facility, and notes that a significant funding gap must be addressed to implement the capital and operating requirements of this plan.

- In 2008, through House Bill 2878, the Washington State Legislature called for WSDOT to develop improvements of traffic flow from the eastern Lake Washington shoreline to the 108th Avenue NE in Bellevue. The submitted plan involves accelerating the Eastside HOV and Transit program. WSDOT has submitted a $300 million federal grant request for this project through the Transportation Investment Generating Economic Recovery ("TIGER") grant program.

- ESHB 2211, enacted in May 2009, approved the concept of early tolling for the SR 520 corridor and established a working group of legislators mandated to carry out several tasks among which are to: (1) review and recommend a financing strategy for projects in the SR 520 corridor that keep all costs within $4.65 billion; (2) recommend design options that meet the needs of the region's transportation system while providing appropriate mitigation for the neighborhoods and communities in the corridor; (3) present a final report to the Governor and Legislature by January 1, 2010; and (4) form a west side subgroup to conduct a detailed review and make recommendations for the project segment between I-5 and the west end of the floating bridge.

- As part of the west side process, KCDOT has provided support to the legislative working group and has made a recommendation for the Option A+ Hybrid as the choice that allows for the most effective integration of public transportation into the project.

FIVE OPTIONS FOR THE WESTSIDE

Five Westside options are currently under consideration. Features and cost vary widely. Attachment 3 is a set of maps showing the cost components for each option. Attachment 4 is a table comparing features of the five options.

All the options include similar connections to I-5: (1) direct access ramp to the I-5 express lanes, (2) a lid above a portion of I-5, and (3) a lid at 10th Avenue East and Delmar Drive East. Moreover, all options have stormwater treatment ponds as required by current environmental design standards.

Options A and A+ Hybrid include a second bascule[i] bridge across the Montlake Cut just west of the existing bridge, an interchange connecting SR 520 and Montlake Boulevard that is similar to the existing interchange, and a lid at McCurdy Park (site of the Museum of History and Industry building).

Option A eliminates the existing Lake Washington Boulevard ramp connections, resulting in greater congestion on Montlake Boulevard. Option A+ Hybrid retains the Lake Washington Boulevard ramps and has additional transit access features including transit priority measures on Montlake Boulevard.

Option K has a tunnel under the east end of the Montlake Cut that is connected to a new "single point" interchange underneath the SR 520 roadway, and a lid over SR 520 at Montlake Boulevard East. Option M includes the tunnel with a potentially lower-cost construction technique, and also has a different intersection design.

Option L has a second bascule bridge at the eastern end of the Montlake Cut, a new interchange east of Montlake Boulevard East, and a lid over SR 520 at Montlake Boulevard East.

Presentations to the Legislative Workgroup have compared a "no build" option with Options A, A+ Hybrid, K, M, and L. Option A+ Hybrid has the lowest average travel time in the Montlake area, the lowest local peak transit travel time (Madison Street to Montlake and between SR 520 and the Montlake Triangle).

Comparison of Estimated Costs ($Billions)

Westside Option	Westside Cost	Total "Most Likely" Cost
A+ Hybrid	$1.9B - $2.1B	$4.4B - $4.6B
A	$2.0B - $2.3B	$4.5B - $4.8B
K	$4.1B - $4.2B	$6.6B - $6.7B
M (K Hybrid)	$3.4B	$5.9B
L	$2.6B	$5.1B

Note: All cost estimates have been adjusted to account for risk and inflation and are shown in year of expenditure dollars. These cost ranges include optional features identified through the west side interchange mediation process.

Based on total cost and the impacts on transit, KCDOT has endorsed the A+ Hybrid Option. Proposed Motion 2009-0610 describes the transit-supportive features that KCDOT recommends. Note that identified funding for the SR 520 corridor falls far short of the need for all options – as of April 2009 WSDOT identifies a shortfall of $2.37 billion to reach the $4.65 billion total cost that is the maximum approved by the Legislature.

ANALYSIS

Although the text of the motion does not explicitly call out preference for the A+ Hybrid option, it does recommend all of the specific design features in that option. As stated above, option A+ Hybrid falls within the total budget cap set by the Legislature and is projected to have the best travel times for transit vehicles and all traffic in the Montlake neighborhood. This information provides the basis for KCDOT recommending the transit-supportive features in this option over the other options that are under review.

AMENDMENT

An amendment will be offered to:

(1) Clarify that the County's preferred option is A+ Hybrid; and

(2) That both the Eastside Transportation Partnership and the Legislative Workgroup have endorsed the A+ Hybrid as the preferred option.

ATTACHMENTS

1. Proposed Motion 2009-0610
2. SR 520 Key Transit Issues
3. Detailed Option Cost Estimates for Options A+ Hybrid, A, K, M, and L
4. Comparison of Westside Options: Data Sheet
5. Draft striking amendment

Attachment 2

SR 520 Key Transit Issues

- **The loss of the Montlake Freeway Station**
  - Stop statistics: 355 daily bus trips / transfer point for 1,500 riders daily
  - Cost to replace the function of this station: $3-5 million annually (on top of Urban Partnership Agreement service) for more direct service between the eastside and the University District.
  - *Transit service levels and capacity through the corridor will be significantly reduced without funding to offset this loss.*

- **SR 520 Construction Mitigation**
  - Funding for additional transit service is needed:
    - To offset increased transit operating costs due to traffic delays
    - To provide an alternative for drivers and mitigate construction impacts to all traffic.
  - *Without funding to mitigate construction impacts, transit service levels and capacity in the corridor will be significantly reduced.*

- **Transit priority on arterial streets**
  - *Transit priority measures are needed to keep transit competitive and effective in accommodating the anticipated growth in travel demand.*

- **Eastbound direct access ramp (Option A)**
  - Option A includes a westbound transit only ramp, but not an eastbound direct access ramp to connect transit to the HOV lanes.
  - *The eastbound direct access ramp will minimize bus weaves movements and maximize bus operations, providing a reliable connection to the HOV lanes.*

- **The Lake Washington Boulevard Ramps**
  - Permanent closure of these ramps increases congestion at the Montlake Interchange, adversely affecting local traffic and delaying local transit service
  - *Inclusion of the ramps will reduce travel time by approximately 50% in the Montlake corridor for all traffic including local transit service.*

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[i] A bascule bridge is essentially a drawbridge, with one or more sections that can be raised.

Washington State Department of Transportation

SR 520 Bridge Replacement and HOV Program

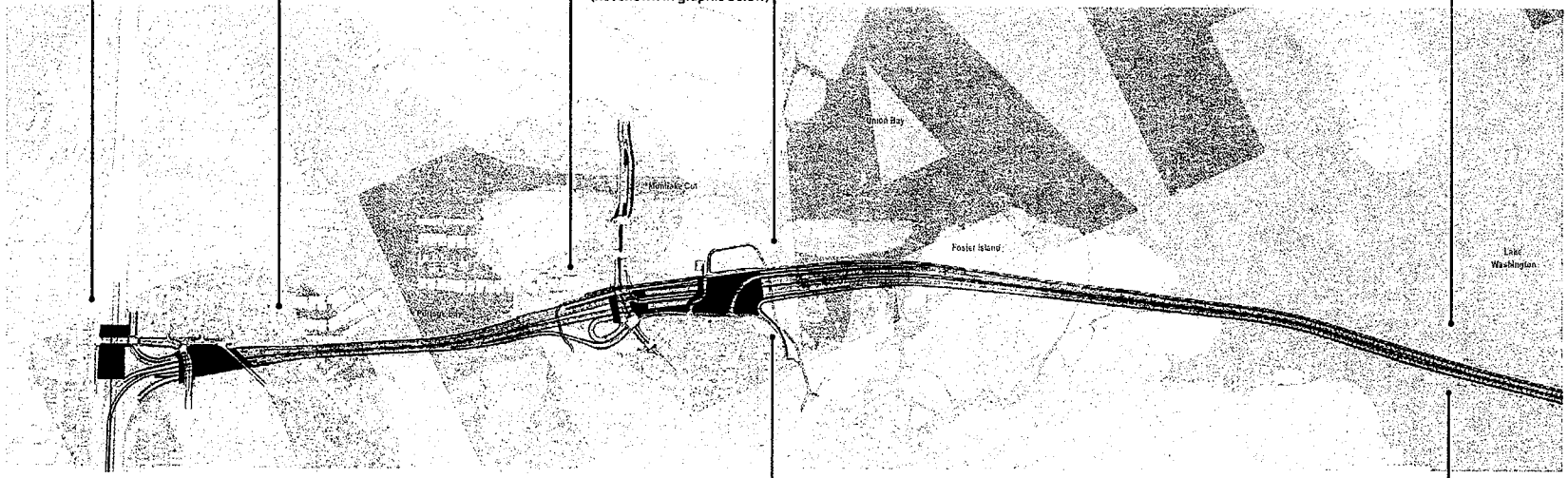
I-5 to Medina: Bridge Replacement and HOV Project

State Route 520

DETAILED OPTION 'A PLUS HYBRID' ESTIMATE: I-5 TO FLOATING BRIDGE

Note: This is a preliminary cost assessment. This option has not been reviewed through a CEVP process.

	I-5	Portage Bay	Montlake	West Approach
Cost	$322M	$375M-$475M	$448M	$882M
	• Includes Roanoke lid ($68M) • Includes 10th & Delmar lid ($72M)	• Low end of range is 150' spans • High end of range is 300' spans for western portion • Design competition for bridge aesthetics • Includes westbound auxiliary lane ($13M)	• Includes McCurdy Park lid ($89M) • Includes bascule crossing ($81M) • Includes transit and pedestrian enhancements at Montlake/Pacific (not shown in graphic below)	• Includes SDEIS constant rise bridge profile • Includes eastbound HOV direct access ramp ($8M)



$784M

• Option for removing Lake Washington Blvd ramps ($98M)

Total Cost, I-5 to Floating Bridge

$1.929B to $2.127B

Total Program Cost

$4.433B to $4.631B

* Costs developed with a design snap shot as of October 16, 2009.
* Risk and inflation costs were derived using the 2008 CEVP results, most likely at year of expenditure.
* As written in ESHB 2211, the total cost of the corridor should not exceed $4.65B.

DRAFT

Updated: November 17, 2009

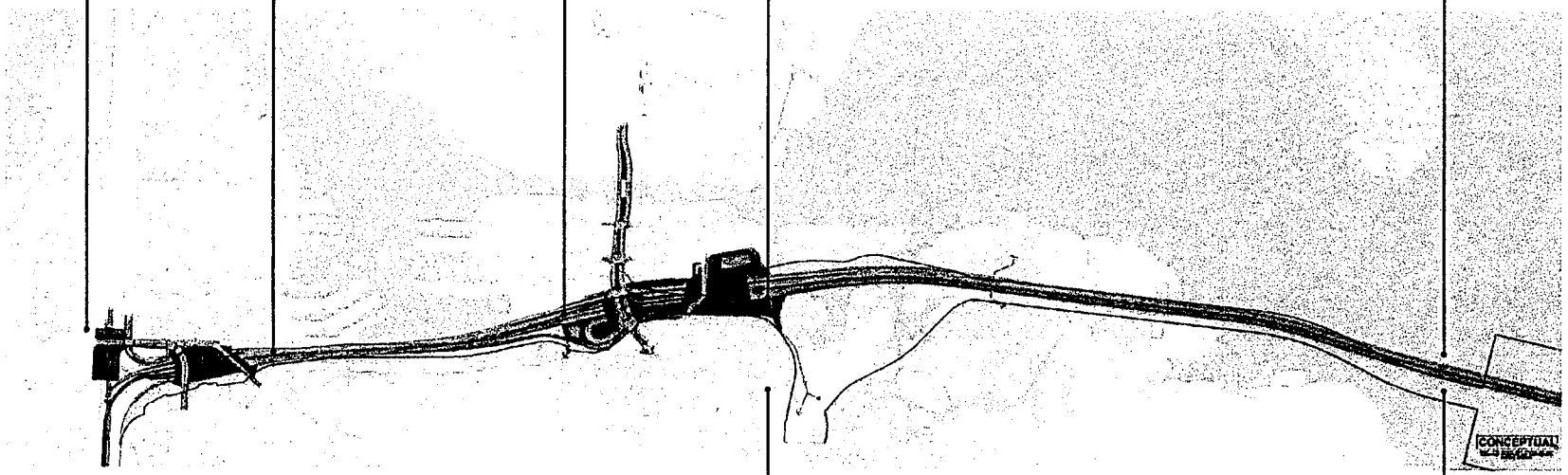
Washington State Department of Transportation

SR 520 Corridor Program

DETAILED OPTION A ESTIMATE: I-5 TO FLOATING BRIDGE

Updated: November 2008

	I-5	Portage Bay	Montlake	West Approach
Cost	$322M	$482M	$442M	$776M
	• Includes Roanoke Lid ($68M) • Includes 10th & Delmar Lid ($72M)	• Includes Portage Bay Bridge Aesthetic Treatment	• Includes McCurdy Park Lid ($89M) • Includes Bascule Crossing ($81M)	• Includes Low Bridge Profile



$1.052B

- Option for Foster Island Land Bridge ($80M). Not shown in graphic above.
- Option for Lake Washington Blvd Ramps ($98M). Not shown in graphic above.
- Option for Eastbound HOV Direct Access Ramp ($98M). Not shown in graphic above.

Total Cost Range for I-5 to Floating Bridge

$2.022B to $2.298B

Total Program Cost

$4.526B to $4.802B

* Costs are 2008 CEVP, most likely at year of expenditure.

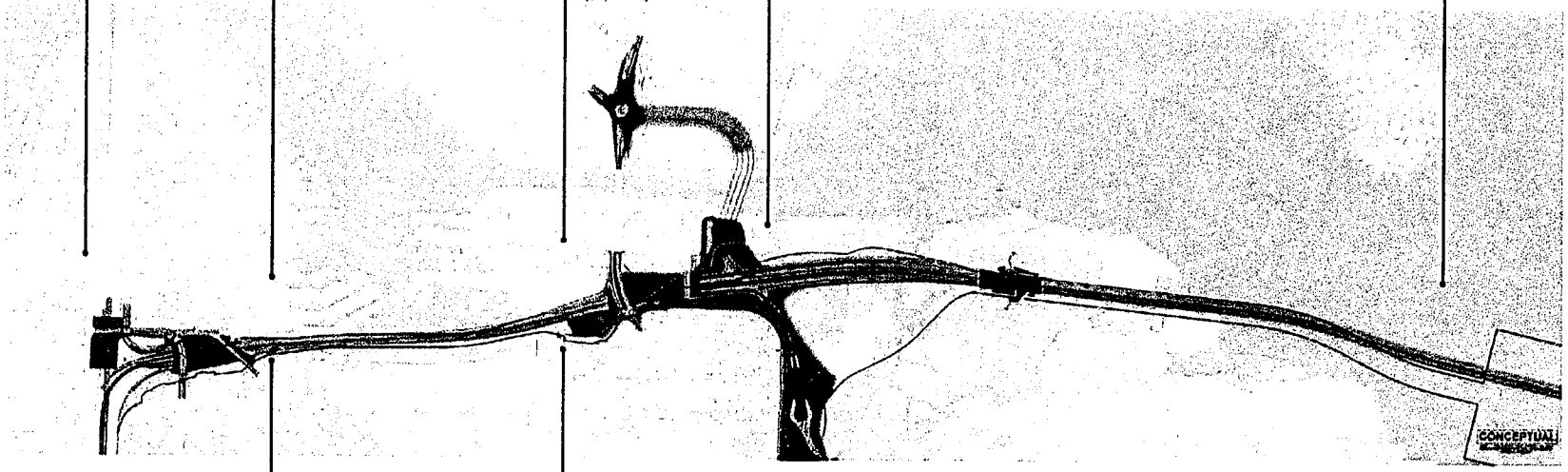
Washington State Department of Transportation

SR 520 Corridor Program

DETAILED OPTION K ESTIMATE: I-5 TO FLOATING BRIDGE

Updated: November 2008

	I-5	Portage Bay	Montlake	West Approach
Cost	$322M	$414M	$2.346B	$988M
	• Includes Roanoke Lid ($68M) • Includes 10th & Delmar Lid ($72M)	• Includes False Arch Bridge Type	• Includes Montlake Lid ($69M) • Includes Pacific & Montlake Lid ($33M) • Includes Tunnel, Cut & Cover, Sequential Excavation Methods ($1,056M)	• Includes Foster Island Land Bridge ($80M)



$512M

• Option for Eastbound Off-Ramp, Westbound On-Ramp at Montlake Boulevard ($98M). Not shown in graphic above.

Total Cost Range for I-5 to Floating Bridge

$4.070B to $4.168B

Total Program Cost

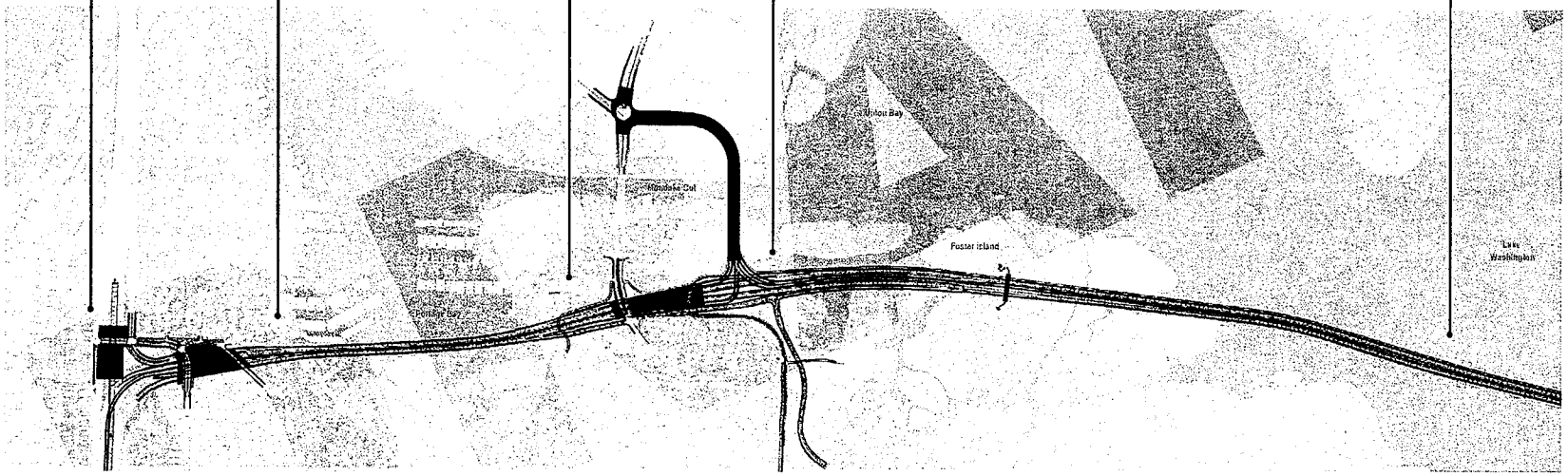
$6.574B to $6.672B

* Costs are 2008 CEVP, most likely at year of expenditure.

DETAILED OPTION 'M' ESTIMATE: I-5 TO FLOATING BRIDGE

Note: This is a preliminary cost assessment. This option has not been reviewed through a CEVP process.

	I-5	Portage Bay	Montlake	West Approach
Cost	**$322M**	**$446M**	**$1.800B**	**$790M**
	• Includes Roanoke lid ($68M) • Includes 10th & Delmar lid ($72M)	• Includes false arch bridge type • Includes eastbound off ramp ($32M)	• Includes Montlake lid ($69M) • Includes Pacific & Montlake lid ($33M) • Includes tunnel, cut & cover, immersed tube tunnel methods ($808M)	• Includes low, stormwater bridge profile • Includes pedestrian connection at Foster Island ($12M)



Total Cost, I-5 to Floating Bridge
$3.358B

Total Program Cost
$5.862B

* Costs developed with a design snap shot as of October 16, 2009.
* Risk and inflation costs were derived using the 2008 CEVP results and 2009 Immersed Tube Tunnel Cost Risk Assessment, most likely at year of expenditure.
* Mitigation cost opinion included; however, the Immersed Tube Tunnel concept requires additional consultation with the resource agencies.
* As written in ESHB 2211, the total cost of the corridor should not exceed $4.65B.

DRAFT
October 2009

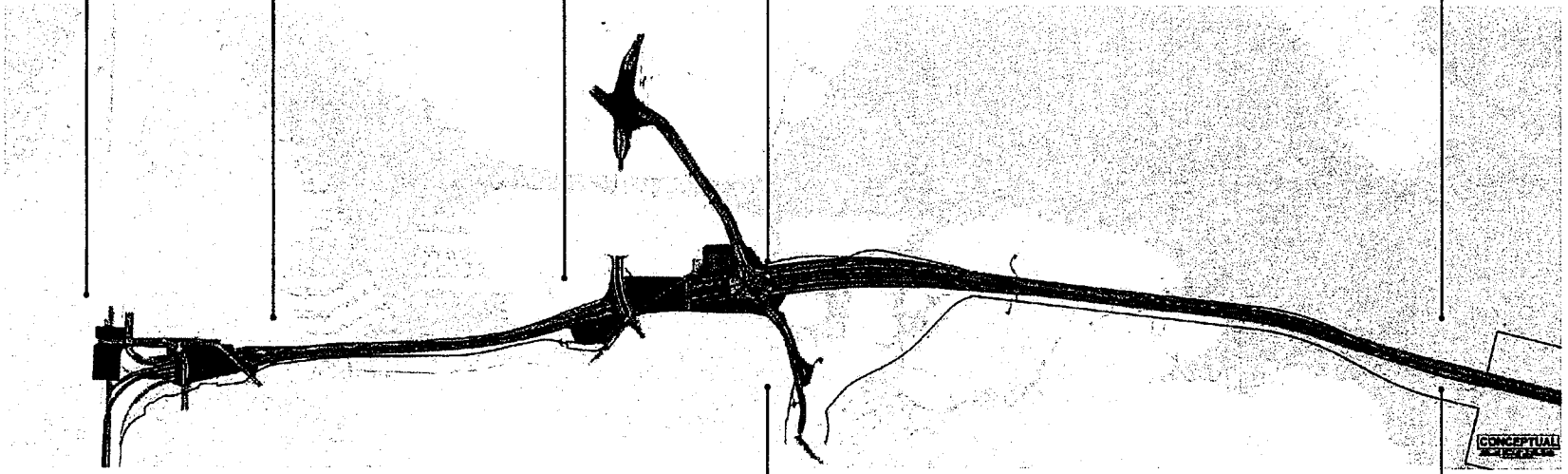
Washington State Department of Transportation

SR 520 Corridor Program

DETAILED OPTION L ESTIMATE: I-5 TO FLOATING BRIDGE

Updated: November 2008

	I-5	Portage Bay	Montlake	West Approach
Cost	$322M	$426M	$701M	$1.113B
	• Includes Roanoke Lid ($68M) • Includes 10th & Delmar Lid ($72M)	• Includes Portage Bay Bridge Aesthetic Treatment	• Includes Montlake Lid ($63M) • Includes Pacific & Montlake Lid ($56M) • Includes Bascule Crossing ($312M)	



$1.193B

• Option for Foster Island Land Bridge ($80M). Not shown in graphic above.

Total Cost Range for I-5 to Floating Bridge

$2.562B to $2.642B

Total Program Cost

$5.066B to $5.146B

* Costs are 2008 CEVP, most likely at year of expenditure.

Washington State Department of Transportation

SR 520 Bridge Replacement and HOV Program

I-5 to Medina: Bridge Replacement and HOV Project

COMPARISON OF SR 520 WESTSIDE OPTIONS: Data Sheet

	No Build	Option A		Option K		Option L		A+ Hybrid	Option M
		base[1]	suboption[2]	base	suboption[3]	base	suboption[7]		
Cost									
Year of Expenditure (billions)		2.022	2.298	4.070	4.168	2.562	2.642	1.929 - 2.127	3.358
Traffic Operations (Year 2030)									
Local Traffic (AM/PM Peak, bi-directional)									
Crossing the Montlake Cut (vehicles per hour)	4500/6200	4300/6000	4300/6200	5900/8200	5900/8200	7300/9200	7300/9200	4300/6200	Not available
In the Arboretum (vehicles per hour)	1800/1800	900/1200	1900/1800	2000/2100	2000/2100	2000/2100	2000/2100	1900/1800	Not available
Average local travel time (minutes)	25	10	8	11	Not available	12	Not available	8	Not available
Freeway Traffic (AM/PM Peak, bi-directional)									
Floating Bridge (vehicles per hour)	8700/8700	8700/8700	9100/8900	9100/9200	9100/9200	9100/9200	9100/9200	9100/8900	Not available
Portage Bay Bridge (vehicles per hour)	7500/7600	8000/7900	7600/7400	7700/7200	7700/7200	7700/7200	7700/7200	7600/7400	Not available
Transit (minutes)									
Local peak travel times (Madison-Mntlk Tri/Mntlk Tri-McGraw)	45/9	18/5	10/5	23/3	Not Available	28/5	Not Available	10/5	Not available
Peak travel time to/from SR 520/Montlake Triangle	5/10	5/6	4/4	6/5	Not Available	5/6	Not Available	4/4	Not available
Non-vehicular		Regional trail across Lake Washington. Connectivity with local paths.							
Environmental Resources-Construction Effects[5]									
Park Effect (Acres)		5.10	5.4	7.00	7.00	6.30	6.30	5.40	Not available
Section 6(f) Resource Effect (Acres)		2.99	2.99	5.2	5.2	4.28	4.28	2.99	Not available
Wetland Fill Effect (Acres)[6]		0.6	0.5	1.1	1.1	0.6	0.70	0.7	Not available
Wetland Shade Effect (Acres)		6.4	6.93	8.1	8.2	6.4	6.40	6.8	Not available
Wetland Buffer Fill Effect (Acres)[6]		2.80	3.00	3.30	3.40	2.90	3.00	3.2	Not available
Wetland Buffer Shade Effect (Acres)		0.20	0.30	0.60	0.60	0.20	0.20	0.3	Not available
Open Water Fill Effect (Acres)[7]		0.20	0.20	0.30	0.30	0.20	0.20	0.2	Not available
Open Water Shade Effect (Acres)[7]		13.40	13.40	10.60	10.60	12.20	12.20	13.40	Not available
Environmental Resources-Permanent Effects[5]									
Park Effect (Acres)		5.6	5.6	7.6	7.6	7.1	7.1	5.6	Not available
Section 6(f) Resource Effect (Acres)		3.04	3.04	4.94	4.94	3.88	3.88	3.04	Not available
Section 6(f) Resource- Subterranean Easement (Acres)[8]		0.02	0.02	0.4	0.4	0.09	0.09	0.02	Not available
Wetland Fill Effect (Acres)		0.1	0.6	1.8	1.9	0.3	0.4	0.2	Not available
Wetland Shade Effect (Acres)		3.2	3.4	2.8	2.9	4.3	4.4	3.3	Not available
Wetland Buffer Fill Effect (Acres)		0.7	2.98	5.5	5.6	1.6	1.7	0.8	Not available
Wetland Buffer Shade Effect (Acres)		4.3	3.7	4.4	4.4	5.9	6.0	4.3	Not available
Open Water Fill Effect (Acres)[9]		0.5	0.6	2.7	2.7	0.6	0.6	0.6	Not available
Open Water Shade Effect (Acres)[9]		14.5	16.1	13.5	13.5	16.0	16.0	16.1	Not available
Full Property Acquisitions (number of parcels)[10]		7	7	6	6	5	5	7	Not available
Design									
Number of lanes on Portage Bay Bridge		7	7	6	6	6	6	7	Not available
Number of lanes at Marsh Island		9	10	12	12	12	12	10	Not available
Method to cross the Montlake Cut		Bascule Bridge	Bascule Bridge	SEM Tunnel	SEM Tunnel	Bascule Bridge	Bascule Bridge	Bascule Bridge	IT Tunnel

Note: *References for above footnotes are included in the summary of environmental characteristic shared at Westside Subgroup meeting on Sept. 22, 2009.*

DRAFT November 17, 2009

November 23, 2009

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Pdc

Sponsor: Jane Hague

Proposed No.: 2009-0610

AMENDMENT TO PROPOSED MOTION 2009-0610, VERSION 1

On page 1, beginning on line 5, strike everything through page 4, line 64, and insert:

"WHEREAS, the State Route 520 bridge is a vital transportation corridor between job centers and growing communities around Lake Washington, carrying about one hundred fifty-five thousand people per day, and

WHEREAS, the State Route 520 bridge is heavily congested during morning and afternoon commute times, carrying twice as many vehicles as it was originally planned to, and

WHEREAS, the State Route 520 bridge was built in the early 1960s, without the benefit of modern design and safety standards, and the structure's age and condition make it vulnerable to seismic events or windstorms, and

WHEREAS, the state and the region have been studying the potential replacement of the State Route 520 bridge for several years and have identified State Route 520 bridge replacement and high-occupancy vehicle ("HOV") program options to replace the existing floating bridge, enhance safety and provide transit and roadway improvements throughout the corridor, with a total cost capped at four billion six hundred fifty million dollars, and

WHEREAS, the eastside transit and HOV project design components of the State Route 520 bridge replacement and HOV program have been agreed upon and are ready to move forward, and

WHEREAS, in 2009 the state Legislature created the State Route 520 Legislative Workgroup to recommend a preferred westside design option to the Legislature by December 2009, and

WHEREAS, three westside design options are currently under consideration by the legislative workgroup, and

WHEREAS, the impact on transit operations of the westside design options should be highlighted for the legislative workgroup's consideration, and

WHEREAS, King County Metro transit service will play a key role in accommodating future growth and demand in the State Route 520 corridor, and this service is crucial to making the new bridge and HOV program work for the communities on both sides of the lake both now and in the future, and

WHEREAS, the state Legislature recently provided King County with the authority to levy a property tax that would support expanded transit service in the State Route 520 corridor as envisioned in the federal urban partnership, which will help meet growing demand for transit service in the corridor. The metropolitan King County council, as part of its 2010-2011 biennial transit budget deliberations, is considering levying this property tax in a tax-neutral manner, and

WHEREAS, all of the westside design options include the removal of the Montlake freeway bus station, which will adversely affect capacity through the corridor

unless an estimated three to five million dollars annually is provided to offset this loss, and

WHEREAS, the King County department of transportation stated its preference, at an October 8, 2009, State Route 520 Legislative workgroup meeting, for option A with specific suboptions as the best means of meeting the transit design needs, and

WHEREAS, the cost estimate for westside design option A with sub-options most closely aligns with the total program cost identified by the state in comparison to all the other design options, and

WHEREAS, it is in the county's best interests if the legislative workgroup recommends an option that meets the needs of transit now so that the project can move forward on schedule without further delay and allow for a final decision on westside design options by the state Legislature in 2010, and

WHEREAS, the SR 520 Legislative Workgroup on November 17 recommended that the A+ Hybrid Option be advanced for review in the supplemental draft environmental impact statement, and

WHEREAS, the Eastside Transportation Partnership has expressed support for this proposed motion and the A+ Hybrid Option;

NOW, THEREFORE, BE IT MOVED by the Council of King County:

A. King County supports a State Route 520 bridge replacement and HOV program design that is most affordable and includes the following transit design components for the westside:

1. An eastbound and westbound HOV direct access ramp such as included in the option currently defined as the A+ hybrid;

2. Bus layover space, passenger facilities and transit priority in the Montlake triangle and bridge area in the vicinity of Husky Stadium;

3. Lake Washington Boulevard ramps to the eastbound State Route 520 and from westbound State Route 520;

4. An eastside bus station designed to accommodate buses passing each other; and

5. Compensation to King County Metro in the form of an ongoing operating subsidy for the loss of direct service to the University District with the removal of the Montlake Freeway bus station.

B. King County supports the A+ Hybrid option because of its compliance with cost and transit connectivity requirements, and ability to improve overall mobility in the region."

EFFECT: Adds language concerning the SR 520 Legislative Workgroup's and ETP's endorsement of the A+ Hybrid Option for the Westside segment of the SR 520 Bridge Replacement and HOV project. Modifies the description of project elements for clarification.