Appendix A:

Average Annual Daily Truck Volumes

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Average Annual Daily Truck Volumes -2010

Begin MP	End MP	Estimated AADT	Estimated Truck Volume	Estimated Truck Percentage
8.88	9.61	125,315	7,920	6.32%
9.61	9.87	89,048	5,628	6.32%
9.87	10.15	67,056	4,238	6.32%
10.15	11.64	149,245	9,432	6.32%
11.64	12.34	99,649	6,298	6.32%
12.34	13.30	125,108	7,907	6.32%
13.30	14.32	110,050	6,955	6.32%
14.32	15.37	120,041	7,587	6.32%
15.37	16.31	78,105	4,936	6.32%
16.31	16.85	87,191	10,533	12.08%
16.85	18.00	59,482	7,185	12.08%
18.00	18.38	57,643	6,963	12.08%
18.38	19.97	63,693	7,694	12.08%
19.97	20.75	62,024	7,492	12.08%
20.75	22.22	62,341	7,531	12.08%
22.22	22.86	49,805	6,016	12.08%
22.86	25.37	54,852	6,626	12.08%
25.37	26.21	39,655	4,790	12.08%
26.21	27.14	55,173	11,526	20.89%
27.14	30.24	44,912	9,382	20.89%
30.24	31.00	32,498	6,789	20.89%
31.00	32.24	39,594	8,271	20.89%
32.24	33.04	29,286	6,118	20.89%
33.04	34.33	33,608	7,021	20.89%
34.33	35.00	29,079	6,075	20.89%
35.00	37.46	31,125	6,502	20.89%

Exhibit A.1: 2010 AADT Traffic Data

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Appendix B:
List of Bridges in the Study Area

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Milepost	SR	Structure_id	Bridge Number	Bridge Name	Bridge Type	Rating		Year Built	Year Rebuilt
9.88	90	0008190E	090/048W-S	W-S RAMP I-90 OC	Concrete Box	93.38	FO	1969	
9.88	90	0008190B	090/047E-N	E-N RAMP, I-90 OC	Concrete Box	92.71	FO	1969	
18.01	90	0016010D	090/067E-N	SAMMAMISH PLATEAU ACCESS	Steel Box	100	N/A	2003	
18.01	90	0016010C	090/067	I-90, ISSAQUAH CR OC	PTConcrete Box	98	N/A	2003	
18.01	90	0016010B	090/067E-E	E FK ISSAQUAH CR	Steel Box	100	N/A	2003	
18.01	90	0016010A	090/066E-E	FRONTAGE RD OC	Post Tenstioned Concrete Box	96	N/A	2003	
18.19	90	0009840F	090/069W-S	W-S RAMP	Post Tenstioned Concrete Box	99.87	N/A	1976	
22.39	90	0009820B	090/076	I-90 OC, JONES RD	Concrete Box	95	N/A	1975	
27.22	90	0009900D	090/080N	W SNOQUALMIE INTERCH OC	Post Tenstioned Concrete Box	96.94	N/A	1976	
27.22	90	0009900C	090/080S	W SNOQUALMIE INTERCH OC	Post Tenstioned Concrete Box	96.91	N/A	1976	
30.39	90	0010124D	090/081N	SR 202 OC	Concrete Box	92.22	N/A	1975	
30.39	90	0010124C	090/081S	SR 202 OC	Concrete Box	92.22	N/A	1976	
31.72	90	0009814B	090/082N	S FK SNOQUALMIE R	Concrete Box	96.18	N/A	1975	
31.72	90	0009814A	090/082S	S FK SNOQUALMIE R	Concrete Box	96.18	N/A	1975	
32.71	90	0009810C	090/084	436TH AVE SE UC	Concrete Box	99	N/A	1976	

Milepost	Length	Width	Deck Area SF	County Name	Region Description	ADT	ADTT	latitude	longitude	Lanes on
9.88	464	23	10,672	King	Northwest	16,444	822	47.58	122.174	1
9.88	458	33	15,114	King	Northwest	13,129	656	47.5798	122.175	1
18.01	925	39.3	36,352	King	Northwest	7,830	392	47.5319	122.025	2
18.01	374	75.8	28,349	King	Northwest	1,000	10	47.5318	122.022	6
18.01	492	36.4	17,909	King	Northwest	7,830	392	47.5308	122.026	2
18.01	1444	26.5	38,266	King	Northwest	9,000	90	47.5354	122.032	1
18.19	419	26.5	11,104	King	Northwest	1,430	72	47.5317	122.02	1
22.39	284	40	11,360	King	Northwest	2,850	684	47.5217	121.933	2
27.22	165	68	11,220	King	Northwest	17,193	4,126	47.5133	121.847	3
27.22	135	52	7,020	King	Northwest	17,193	4,126	47.5133	121.847	3
30.39	187	52	9,724	King	Northwest	17,193	4,126	47.4883	121.795	3
30.39	187	52	9,724	King	Northwest	17,193	4,126	47.4883	121.795	3
31.72	487	52	25,324	King	Northwest	16,938	4,065	47.4733	121.778	3
31.72	484	52	25,168	King	Northwest	16,938	4,065	47.4733	121.778	3
32.71	311	55	17,105	King	Northwest	2,499	125	47.4733	121.757	3

Exhibit B.1: Bridges in the Study Area

Milepost	Rail Definition	Rail Adequate?	Wearing Surf Description
9.88	Conc Base - Type R	Yes	ACP overlay
9.88	Conc Base - Type R	Yes	ACP overlay
18.01	New Jersey Barrier	Yes	Original Conc w/ECR
18.01	New Jersey Barrier w/Type BP	Yes	Original Conc w/ECR
18.01	New Jersey Barrier	Yes	Original Conc w/ECR
18.01	New Jersey Barrier	Yes	Original Conc w/ECR
18.19	New Jersey Barrier	Yes	ACP w/membrane
22.39	New Jersey Barrier	Yes	original concrete
27.22	New Jersey Barrier	Yes	original concrete
27.22	New Jersey Barrier	Yes	original concrete
30.39	New Jersey Barrier	Yes	original concrete
30.39	New Jersey Barrier	Yes	original concrete
31.72	New Jersey Barrier	Yes	ACP w/membrane
31.72	New Jersey Barrier	Yes	ACP w/membrane
32.71	New Jersey Barrier	Yes	original concrete

Exhibit B.1: Bridges in the Study Area

Appendix C:

List of Culverts in the Study Area

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WSDOT Fish Passage Features on I-90 Between Milepost 8 and 35

27-Feb-09

SiteId	Feature Type	Road	Milepost	Stream	Tribto	WRIA	Barrier	% Fish Pass	Significant Reach (>=200m)	Fish Use	Culvert Number[1]	Shape	Material	Span (m)	Rise (m)	Water Surface Drop (m)	% Slope
994412	Culvert	I-90	10.21	Richards Cr	Lk Washington	08.0261	Yes	67	No	Yes	1.1	OTH	OTH	0.91	0.91	0	
996251	Culvert	I-90	10.52	Sunset Cr	Richards Cr	08.0262	Yes	0	Yes	Yes	1.1	OTH	OTH	1.7	1.9	1.15	
996252	Dam	I-90	12.03	Squibbs Cr	LK Sammamish	08.0156	Yes	0	Yes	Yes							
996478	Culvert	I-90	12.75	unnamed	Lk Sammamish	08	Yes	0	Yes	Yes	1.1	RND	CST	1.07	1.07	2	
996479	Culvert	I-90	12.93	unnamed	Lk Sammamish	08	Yes	0	Yes	Yes	1.1	RND	PCC	0.61	0.61	0	
996480	Culvert	I-90	13.01	unnamed	Lk Sammamish	08	Yes	0	Yes	Yes	1.1	RND	PCC	0.76	0.76	0	8.5
992798	Culvert	I-90	13.83	Lewis Cr	Lk Sammamish	08.0162	Yes	0	Yes	Yes	1.1	OTH	PCC	1.52	1.52	0	4.6
996477	Culvert	I-90 off-ramp to SR 900	13.84	NF Issaquah Cr	Issaquah Cr	08.0180	No	100		Yes	1.3	RND	CST	1.68	1.68	0	0.04
996477	Culvert	I-90 off-ramp to SR 900	13.84	NF Issaquah Cr	Issaquah Cr	08.0180	No	100		Yes	3.3	RND	CST	1.68	1.68	0	0.91
996477	Culvert	I-90 off-ramp to SR 900	13.84	NF Issaquah Cr	Issaquah Cr	08.0180	No	100		Yes	2.3	RND	CST	1.68	1.68	0	0.01
996476	Culvert	I-90 EB to SR 900	14.03	unnamed	Tibbetts Cr	08	No	100		Yes	2.2	RND	PCC	1.07	1.07	0	2.6
996476	Culvert	I-90 EB to SR 900	14.03	unnamed	Tibbetts Cr	08	No	100		Yes	1.2	RND	PCC	1.07	1.07	0	2.7
996481	Culvert	I-90	14.2	unnamed	Lk Sammamish	08	N/A	N/A	N/A	No	1.1	RND	PCC	0.46	0.46		
994415	Culvert	I-90	14.71	unnamed	Lk Sammamish	08	Yes	0	Yes	Yes	1.1	RND	OTH	1.07	1.07	0.12	10
994411	Bridge	I-90	15.48	Tibbets Cr	Lk Sammamish	08.0169	No	100	Yes	Yes							
996967	Culvert	SR 900 on-ramp to I-90	15.89	unnamed	Tibbetts Cr	08	No	100		Yes	1.2	RND	CST	1.37	1.37	0	-0.3
996967	Culvert	SR 900 on-ramp to I-90	15.89	unnamed	Tibbetts Cr	08	No	100		Yes	2.2	RND	CST	1.37	1.37	0	-0.2
996966	Culvert	SR 900 Off to I-90 EB	15.92	unnamed	unnamed	08	No	100		Yes	1.3	RND	CST	1.07	1.07	0	-2.7
996966	Culvert	SR 900 Off to I-90 EB	15.92	unnamed	unnamed	08	No	100		Yes	2.3	RND	CST	1.07	1.07	0	-2.1
996966	Culvert	SR 900 Off to I-90 EB	15.92	unnamed	unnamed	08	No	100		Yes	3.3	RND	CST	1.07	1.07	0	-2.1
996472	Culvert	I-90	15.92	unnamed	unnamed	08	Yes	67	Yes	Yes	1.3	RND	PCC	1.07	1.07	0	0.6
996472	Culvert	I-90	15.92	unnamed	unnamed	08	Yes	67	Yes	Yes	2.3	RND	PCC	1.07	1.07	0	1.03
996472	Culvert	I-90	15.92	unnamed	unnamed	08	Yes	67	Yes	Yes	3.3	RND	PCC	1.07	1.07	0	1.08
991182	Culvert	I-90	16.21	unnamed	Tibbetts Cr	08	Yes	67	Yes	Yes	1.1	RND	CST	1.37	1.37	0	0.6
991183	Culvert	I-90	16.4	unnamed	Lk Sammamish	08	N/A	N/A	N/A	No	1.1	RND	CST	0.91	0.91		
996475	Culvert	I-90 WB off-ramp	17	NF Issaquah Cr	Issaquah Cr	08.0181	No	100	Yes	Yes	2.2	RND	CST	0.91	0.91		1.2
996963	Culvert	I-90 WB on-ramp	17	NF Issaquah Cr	Issaquah Cr	08.0181	Yes	33	Yes	Yes	1.2	RND	CST	1.07	1.07	0	1.39
996963	Culvert	I-90 WB on-ramp	17	NF Issaquah Cr	Issaquah Cr	08.0181	Yes	33	Yes	Yes	2.2	RND	CST	1.07	1.07	0	1.7
996475	Culvert	I-90 WB off-ramp	17	NF Issaquah Cr	Issaquah Cr	08.0181	No	100	Yes	Yes	1.2	RND	CST	0.91	0.91	0	0.31
08.0183 1.60	Culvert	I-90	18.83	EF Issaquah Cr	Issaquah Cr	08.0183	Yes	33	Yes	Yes	1.1	ARCH	SPS	3.66	1.83		
08.0183 3.10	Culvert	I-90	20.28	EF Issaquah Cr	Issaquah Cr	08.0183	No	100	Yes	Yes							
996965	Culvert	I-90	20.42	unnamed	EF Issaquah Cr	08.0186	No	100	Yes	Yes	1.1	RND	PCC	1.75	1.75	0	3.3
996474	Culvert	I-90 WB	21.19	unnamed	EF Issaquah Cr	08	No	100		Yes	1.1	RND	CST	1.07	1.07	0	0.2
996473	Culvert	I-90	21.76	unnamed	EF Issaquah Cr	08	No	100		Yes	1.1	RND	CST	1.22	1.22	0	1
991701	Culvert	I-90	22.1	unnamed	EF Issaquah Cr	08.0192	No	100	Yes	Yes	1.1	RND	SPS	2.7	2.7	0	0
994410	Culvert	I-90	23.13	Soderman Cr	Raging R	07.0390	Yes	33	Yes	Yes	1.1	RND	CST	2.13	2.13	0.11	4.2
994984	Culvert	I-90 WB	24.85	unnamed	Lake Cr	07	Yes	0	Yes	Yes	1.1	RND	CPC	1.33	1.33	1.45	
994911	Culvert	I-90 Ext 27 EB	25.37	unnamed	Coal Cr	07	Yes	0	No	Yes	1.1	RND	CST	0.76	0.76	0.26	
994864	Culvert	I-90	26.9	unnamed	Good Cr	07	Yes	0	No	Yes	1.1	RND	CST	0.91	0.91	0.48	12
994865	Culvert	I-90	26.99	Good Cr	SF Snoqualmie R	07.0456	Yes	0	No	Yes	1.1	RND	OTH	1.45	1.45	0.52	
994940	Culvert	I-90	28.12	unnamed	unnamed	07	N/A	N/A	N/A	No	1.1	RND	CAL	0.46	0.46		
994939	Culvert	I-90	28.26	unnamed	unnamed	07.0460	N/A	N/A	N/A	No	1.1	RND	CAL	0.46	0.46		
994866	Culvert	I-90	28.32	unnamed	Kimball Cr	07	Yes	0	Yes	Yes	1.1	RND	PCC	0.76	0.76	0.62	13
994867	Culvert	I-90	28.49	unnamed	Kimball Cr	07	N/A	N/A	N/A	No	1.1	RND	CAL	0.61	0.61		
994868	Culvert	I-90 EB	28.52	unnamed	Kimball Cr	07.0461	Yes	0	Yes	Yes	1.1	RND	CAL	0.61	0.61	0.59	0.6
994938	Culvert	I-90 WB	28.56	unnamed	Kimball Cr	07.0461	Yes	0	Yes	Yes	1.1	RND	CAL	0.91	0.91	0.62	14
994869	Culvert	I-90	28.73	unnamed	Kimball Cr	07	N/A	N/A	N/A	No	1.1	RND	CST	0.76	0.76		
994985	Culvert	I-90 Off Ext 31 WB	28.81	unnamed	SF Snoqualmie R	07.0469	Yes	33	Yes	Yes	1.1	BOX	CPC	1.85	1.22	0	0.6
994937	Culvert	I-90	28.85	unnamed	unnamed	07	Yes	0	No	Yes	1.1	RND	CST	0.61	0.61	1.1	12.5
994870	Culvert	I-90	28.86	unnamed	Kimball Cr	07	N/A	N/A	N/A	No	1.1	RND	CAL	0.61	0.61		
994936	Culvert	I-90	28.88	unnamed	unnamed	07	N/A	N/A	N/A	No	1.1	RND	CAL	0.61	0.61		
994871	Culvert	I-90	29.06	unnamed	Kimball Cr	07	N/A	N/A	N/A	No	1.1	RND	CAL	0.91	0.91		

Exhibit C.1: Culverts in the Study Area

WSDOT Fish Passage Features on I-90 Between Milepost 8 and 35

27-Feb-09

SiteId	Feature Type	Road	Milepost	Stream	Tribto	WRIA	Barrier	% Fish Pass	Significant Reach (>=200m)	Fish Use	Culvert Number[1]	Shape	Material	Span (m)	Rise (m)	Water Surface Drop (m)	% Slope
994935	Culvert	I-90	29.11	unnamed	Kimball Cr	07	N/A	N/A	N/A	No	1.1	RND	CAL	0.91	0.91		
994872	Culvert	I-90	29.18	unnamed	Kimball Cr	07	N/A	N/A	N/A	No	1.1	RND	CAL	0.61	0.61		
994934	Culvert	I-90	29.2	unnamed	Kimball Cr	07	N/A	N/A	N/A	No	1.1	RND	CAL	0.61	0.61		
994873	Culvert	I-90	29.22	unnamed	Kimball Cr	07	N/A	N/A	N/A	No	1.1	RND	CAL	0.61	0.61		
994874	Culvert	I-90	29.3	unnamed	Swamp Lk	07.0462	N/A	N/A	N/A	No	1.1	RND	CST	0.91	0.91		
994933	Culvert	I-90	29.34	unnamed	Kimball Cr	07.0462	N/A	N/A	N/A	No	1.1	RND	CST	1.05	1.05		
994932	Culvert	I-90	29.43	unnamed	Kimball Cr	07	N/A	N/A	N/A	No	1.1	RND	CST	0.61	0.61		
994931	Culvert	I-90	29.6	unnamed	Kimball Cr	07.0463	N/A	N/A	N/A	No	1.1	RND	CST	0.61	0.61		
994930	Culvert	I-90	29.62	unnamed	Kimball Cr	07.0463	N/A	N/A	N/A	No	1.1	RND	CST	0.61	0.61		
994929	Culvert	I-90	29.74	unnamed	Kimball Cr	07.0454	Yes	0	No	Yes	1.1	RND	CST	0.61	0.61	1.4	3.5
994875	Culvert	I-90	29.74	unnamed	Kimball Cr	07.0454	N/A	N/A	N/A	No	1.1	RND	PCC	0.61	0.61	1.3	6
994928	Culvert	I-90	30.12	unnamed	unnamed	07	N/A	N/A	N/A	No	1.1	RND	CST	0.76	0.76		
994876	Culvert	I-90	30.2	unnamed	unnamed	07	N/A	N/A	N/A	No	1.1	RND	CST	0.76	0.76		
994877	Culvert	I-90	30.45	unnamed	SF Snoqualmie R	07	Yes	0	Yes	Yes	1.1	RND	CST	1.68	1.68	0	5
991175	Culvert	I-90	31.47	unnamed	SF Snoqualmie R	07.0475	No	100		Yes	1.2	SQSH	SPS	3.67	2.42	0	-0.3
991175	Culvert	I-90	31.47	unnamed	SF Snoqualmie R	07.0475	No	100		Yes	2.2	SQSH	SPS	3.67	2.42	0	0

[1]The culvert # identifies individual culverts at multiple stream crossings. Format X.Y., where X specifies specific culvert number, and Y specifies total number of crossings. For example, in a triple culvert crossing; the first pipe would be 1.3, the second 2.3, and the third 3.3.

Codes Used for Culvert Shape

ARCH - bottomles arch
SQSH - squash
RND - round
BOX - rectangular
ELL - ellipse
OTH - other

Codes Used for Culvert Materials

PCC - precast concrete
CST - corrugated steel
SST - smooth steel
CAL - Corrugated aluminium
SPS - structural plate steel
PVC - plastic
TMB - timber
MRY - masonry
OTH - other

Exhibit C.1: Culverts in the Study Area (continued)

Appendix D:

Capital Improvement and Preservation Program (CIPP) List for 2011

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Executive TEIS - Capital Projects System

2011 Agency Request Detail - All Modes

Report Filter: Program I, P / Route 090 / Region 1, 8

Sorted by: State Route, Milepost, Project Number

Expenditure Plan (Dollars In Thousands)

State Route Mileposts Region (County)	Leg Dist	Project-Number Program	Project Title & Description	Location & Schedule	Prior Cost	2011 - 2013	2013 - 2015	2015 - 2017	2017 - 2019	2019 - 2021	Future	Total Cost
090		**109004T**	**I-90/I-5 to 12th Ave S - Seismic Retrofit**	Seattle								
MP 2.49 to MP 2.74	37	Preservation	Seismic retrofit of existing structures on I-90 in the I-5 interchange area.									
			Preliminary Engineering	Feb-07 - Apr-09	989	0	0	0	0	0	0	989
Northwest			Construction	Dec-08 - Nov-11	8,059	0	0	0	0	0	0	8,059
(King)			**I-90/I-5 to 12th Ave S - Seismic Retrofit (Total)**		**9,048**	**0**	**0**	**0**	**0**	**0**	**0**	**9,048**
090		**109051S**	**I-90/Eastside Bridges - Seismic**	Bellevue East								
MP 9.88 to MP 17.17	41 48	Preservation	Seismic retrofit of structures on I-90 from Bellevue east to Issaquah to reduce potential damage from an earthquake.									
			Preliminary Engineering	Jul-05 - Feb-09	971	0	0	0	0	0	0	971
Northwest			Construction	Nov-08 - Feb-12	6,567	1,680	0	0	0	0	0	8,247
(King)			**I-90/Eastside Bridges - Seismic (Total)**		**7,538**	**1,680**	**0**	**0**	**0**	**0**	**0**	**9,218**
090		**109070E**	**I-90/WB SR 18 Interchange Bridge - Bridge Deck Rehabilitation**	W. of North Bend								
MP 25.55 to MP 25.58	05	Preservation	Repair deteriorating bridge deck of the westbound I-90/SR 18 Interchange Bridge to extend the service life and maintain the structural integrity of the bridge.									
			Preliminary Engineering	Jul-11 - May-12	0	121	0	0	0	0	0	121
Northwest			Construction	Apr-12 - Apr-13	0	781	0	0	0	0	0	781
(King)			**I-90/WB SR 18 Interchange Bridge - Bridge Deck Rehabilitation (Total)**		**0**	**902**	**0**	**0**	**0**	**0**	**0**	**902**
090		**109010J**	**I-90/Mt. Baker Tunnel - CCTV Replacement**	Seattle								
MP 3.57 to MP 4.22	41	Preservation	Replace the existing cables with new fiber bundles and camera cables from the control room to each camera control box, replace existing cameras and supports over the roadway, and replace all electronic equipment associated with the traffic camera system in the Mount Baker Tunnel.									
Northwest			Preliminary Engineering	Jan-13 - Dec-13	0	21	18	0	0	0	0	39
(King)			Construction	Nov-13 - Jun-15	0	0	610	0	0	0	0	610
			I-90/Mt. Baker Tunnel - CCTV Replacement (Total)		**0**	**21**	**628**	**0**	**0**	**0**	**0**	**649**

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Exhibit D.1: CIPP List for 2011

Sorted by: State Route, Milepost, Project Number

Expenditure Plan (Dollars In Thousands)

State Route Mileposts Region (County)	Leg Dist	Project-Number Program	Project Title & Description	Location & Schedule	Prior Cost	2011 - 2013	2013 - 2015	2015 - 2017	2017 - 2019	2019 - 2021	Future	Total Cost
090		**109068S**	**I-90/Mt Baker Tunnel & Mercer Island Lid - VFD Replacement**	Seattle/Mercer Is.								
MP 3.91 to MP 6.34	41	Preservation	Replace the Variable Fan Drives that provide the speed control for the Tunnel ventilation fans.									
			Preliminary Engineering	Jul-13 - May-14	0	0	355	0	0	0	0	355
Northwest			Construction	Apr-14 - Dec-15	0	0	1,632	771	0	0	0	2,403
(King)			**I-90/Mt Baker Tunnel & Mercer Island Lid - VFD Replacement (Total)**		**0**	**0**	**1,987**	**771**	**0**	**0**	**0**	**2,758**
090		**109052I**	**I-90/West Lake Sammamish Parkway - Intersection Improvement**	Bellevue-Issaquah								
MP 13.65 to MP 13.95	41 48	Improvement	This project will modify the intersection with the NB Off-Ramp by constructing a 3/4 roundabout (no travel through the south leg).									
			Preliminary Engineering	Aug-11 - Jul-13	0	261	0	0	0	0	0	261
Northwest			Construction	May-13 - Jun-14	0	34	1,355	0	0	0	0	1,389
(King)			**I-90/West Lake Sammamish Parkway - Intersection Improvement (Total)**		**0**	**295**	**1,355**	**0**	**0**	**0**	**0**	**1,650**
090		**109024K**	**I-90/Lacey V. Morrow Bridge - Replace Anchor Cables**	Lake Washington								
MP 4.49 to MP 5.79	41	Preservation	Several anchor cables, the oldest in service, were found to have corrosion, and broken wires. By replacing the cables it will allow us to maintain the operation of the bridge, ensure public safety, and avoid costly future rehabilitation.									
Northwest			Preliminary Engineering	Nov-13 - Aug-14	0	0	153	0	0	0	0	153
(King)			Construction	Jun-14 - Mar-16	0	0	3,021	1,007	0	0	0	4,028
			I-90/Lacey V. Morrow Bridge - Replace Anchor Cables (Total)		**0**	**0**	**3,174**	**1,007**	**0**	**0**	**0**	**4,181**
090		**109024L**	**I-90/Homer M. Hadley Bridge - Replace Anchor Cables**	Lake Washington								
MP 4.53 to MP 5.60	41	Preservation	Several anchor cables, the oldest in service, were found to have corrosion, and broken wires. By replacing the cables it will allow us to maintain the operation of the bridge, ensure public safety, and avoid costly future rehabilitation.									
Northwest			Preliminary Engineering	Nov-13 - Aug-14	0	0	219	0	0	0	0	219
(King)			Construction	Jun-14 - Mar-16	0	0	4,346	1,447	0	0	0	5,793
			I-90/Homer M. Hadley Bridge - Replace Anchor Cables (Total)		**0**	**0**	**4,565**	**1,447**	**0**	**0**	**0**	**6,012**

Exhibit D.1: CIPP List for 2011 (continued)

Sorted by: State Route, Milepost, Project Number

Expenditure Plan (Dollars In Thousands)

State Route Mileposts Region (County)	Leg Dist	Project-Number Program	Project Title & Description	Location & Schedule	Prior Cost	2011 - 2013	2013 - 2015	2015 - 2017	2017 - 2019	2019 - 2021	Future	Total Cost
090		**109004S**	**I-90/I-5 Interchange - Seismic**	Seattle								
MP 2.36 to MP 2.88	37	Preservation	Retrofit existing bridges to bring them up to current seismic standards and reduce the risk of catastrophic failure.									
			Preliminary Engineering	Jan-06 - Feb-08	108	0	0	0	0	0	0	108
Northwest			Construction	Jun-07 - Jun-10	902	0	0	0	0	0	0	902
(King)			**I-90/I-5 Interchange - Seismic (Total)**		**1,010**	**0**	**0**	**0**	**0**	**0**	**0**	**1,010**
090		**109010W**	**I-90/Seattle to Mercer Island - Traffic Monitoring**	Seattle-Mercer Island								
MP 3.57 to MP 6.56 Northwest (King)	37 41	Preservation	This project will replace hardware and integrate software for the tunnel monitoring computer system, including interfaces to the Programmable Logic Controller, Closed Circuit TV, fire monitoring and control system, carbon monoxide monitoring, ventilation, lighting, electrical and emergency power, telephone, signs and signals, and traffic data stations. The project also includes changes to the graphics display/operator's interface as well as remote monitoring and control capability from the Northwest Region Headquarters Building.									
			Preliminary Engineering	Feb-01 - Jun-03	332	0	0	0	0	0	0	332
			Construction	Jun-03 - Jun-10	3,377	0	0	0	0	0	0	3,377
			I-90/Seattle to Mercer Island - Traffic Monitoring (Total)		**3,709**	**0**	**0**	**0**	**0**	**0**	**0**	**3,709**
090		**109024H**	**I-90/Homer M. Hadley Bridge - Special Bridge Repair**	Seattle								
MP 4.53 to MP 5.60	41	Preservation	Expansion joint repair near west high rise of the Homer Hadley floating bridge.									
			Preliminary Engineering	Aug-07 - Jun-09	479	0	0	0	0	0	0	479
Northwest			Construction	Jul-08 - Jun-10	7,734	0	0	0	0	0	0	7,734
(King)			**I-90/Homer M. Hadley Bridge - Special Bridge Repair (Total)**		**8,213**	**0**	**0**	**0**	**0**	**0**	**0**	**8,213**
090		**109024J**	**I-90/Homer M Hadley Bridge - Anchor Cable Replacement**	Lake Washington								
MP 4.24 to MP 5.89	41	Preservation	Replace selected anchor cables on the I-90 Homer M Hadley Bridge due to corrosion or broken wires.									
			Preliminary Engineering	Jan-09 - Nov-09	82	0	0	0	0	0	0	82
Northwest			Construction	Sep-09 - Mar-11	2,065	0	0	0	0	0	0	2,065
(King)			**I-90/Homer M Hadley Bridge - Anchor Cable Replacement (Total)**		**2,147**	**0**	**0**	**0**	**0**	**0**	**0**	**2,147**

Exhibit D.1: CIPP List for 2011 (continued)

Sorted by: State Route, Milepost, Project Number

Expenditure Plan (Dollars In Thousands)

State Route Mileposts Region (County)	Leg Dist	Project-Number Program	Project Title & Description	Location & Schedule	Prior Cost	2011 - 2013	2013 - 2015	2015 - 2017	2017 - 2019	2019 - 2021	Future	Total Cost
090		**109040Q**	**I-90/Two Way Transit - Transit and HOV Improvements - Stage 2 & 3**	Mercer Island								
MP 2.76 to MP 10.34 Northwest (King)	37 41 48	Improvement	Stage 2 - Adds an eastbound I-90 HOV lane to outer roadway from 80th Ave SE to Bellevue Way and mofifies the existing reversible HOV direct access ramp at 80th Ave SE to an eastbound HOV on-ramp connecting to the new HOV lane in the outer roadway. Stage 3 - Adds a westbound I-90 HOV lane to the outer roadway from 80th Ave SE to Rainier Ave S and an eastbound I-90 HOV lane to the outer roadway from Rainier Ave S to 80th Ave SE and builds an east- bound HOV direct access exit ramp at 77th Ave SE on Mercer Island.									
			Preliminary Engineering	Jul-07 - Nov-10	14,027	1,130	0	0	0	0	0	15,157
			I-90/Two Way Transit - Transit and HOV Improvements - Stage 2 & 3 (Total)		**14,027**	**1,130**	**0**	**0**	**0**	**0**	**0**	**15,157**
090		**109040R**	**I-90/Two Way Transit - Transit and HOV Improvements**	Mercer Island								
MP 2.76 to MP 10.34 Northwest (King)	37 41 48	Improvement	Stages 1,2,3.Buses and other high occupancy vehicles traveling in the opposite direction of the center roadway between Seattle and Bellevue are forced to use general-purpose lanes. This will add a transit and HOV lane in each direction to the outer roadways and maintain the reversible option of the center roadway. This will allow buses and other high occupancy vehicles during rush hours to operate at a more reliable schedule and increase the benefits of sharing the ride.									
			Preliminary Engineering	Apr-98 - May-08	15,460	3,413	0	0	0	0	0	18,873
			Construction	Feb-07 - Mar-15	28,168	56,133	42,913	50	0	0	0	127,264
			I-90/Two Way Transit - Transit and HOV Improvements (Total)		**43,628**	**59,546**	**42,913**	**50**	**0**	**0**	**0**	**146,137**
090		**109040T**	**I-90/Two Way Transit - Transit and HOV - Stage 1**	Mercer Island								
MP 2.76 to MP 10.34 Northwest (King)	37 41 48	Improvement	Stage 1 - West Bound from Bellevue Way and 80th Ave SE. Provides for: new HOV lanes in the west bound outer roadway, a new 80th Ave SE HOV direct access ramp, modifications to the Bellevue Way HOV direct access ramp, and variable speed limit system west bound from I-405 to I-5.									
			Preliminary Engineering	Apr-98 - May-08	4,775	0	0	0	0	0	0	4,775
			Construction	Feb-07 - Nov-11	22,685	48	0	0	0	0	0	22,733
			I-90/Two Way Transit - Transit and HOV - Stage 1 (Total)		**27,460**	**48**	**0**	**0**	**0**	**0**	**0**	**27,508**
090		**109043A**	**I-90/EB West Portal Mercer Island Lid - Drainage Repair**	Mercer Island								
MP 5.95 to MP 6.06 Northwest (King)	41	Preservation	Install a system of lateral drains under the roadway, to prevent water from pumping up through the slab and icing at EB I-90 tunnel entrance.									
			Preliminary Engineering	Aug-09 - Sep-10	194	0	0	0	0	0	0	194
			Construction	Jun-10 - Dec-10	402	0	0	0	0	0	0	402
			I-90/EB West Portal Mercer Island Lid - Drainage Repair (Total)		**596**	**0**	**0**	**0**	**0**	**0**	**0**	**596**

Exhibit D.1: CIPP List for 2011 (continued)

Sorted by: State Route, Milepost, Project Number

Expenditure Plan (Dollars In Thousands)

State Route Mileposts Region (County)	Leg Dist	Project-Number Program	Project Title & Description	Location & Schedule	Prior Cost	2011 - 2013	2013 - 2015	2015 - 2017	2017 - 2019	2019 - 2021	Future	Total Cost
090		**109043S**	**I-90/Mercer Slough Bridge - Deck Overlay**	Bellevue								
MP 9.20 to MP 9.72 Northwest (King)	41	Preservation	To preserve the existing roadway this project will rehabilitate the ea stbound I-90 Mercer Slough Bridge with a Polyester overlay. This project will also include expansion joint modification, including removal and replacement with strip seal expansion joint systems due to the current dimensions on the joint opening width.									
			Preliminary Engineering	Jul-15 - Jun-17	0	0	0	518	0	0	0	518
			Construction	Mar-17 - Oct-17	0	0	0	1,987	5,152	0	0	7,139
			I-90/Mercer Slough Bridge - Deck Overlay (Total)		**0**	**0**	**0**	**2,505**	**5,152**	**0**	**0**	**7,657**
090		**109047P**	**I-90/Bellevue Way Interchange Ramps - Paving**	Bellevue								
MP 8.90 to MP 9.53 Northwest (King)	41	Preservation	This project will resurface the ramps at the I-90 Bellevue Way Interchange.									
			Preliminary Engineering	Nov-07 - Feb-10	376	0	0	0	0	0	0	376
			Construction	Nov-09 - Mar-11	1,442	0	0	0	0	0	0	1,442
			I-90/Bellevue Way Interchange Ramps - Paving (Total)		**1,818**	**0**	**0**	**0**	**0**	**0**	**0**	**1,818**
090		**109051P**	**I-90/Eastgate Vicinity Bridges - Seismic**	Bellevue								
MP 9.90 to MP 16.96 Northwest (King)	05 41 48	Preservation	Retrofit existing bridges to reduce damage from seismic forces by installing steel column jackets. This work includes excavation to the top of the footings or pedestals. This project has been split into two stages and Stage 1 is complete. Stage 2 will retrofit four bridges on I-90 in the Eastgate vicinity.									
			Preliminary Engineering	Oct-99 - Jul-01	313	0	0	0	0	0	0	313
			Construction	Nov-08 - Oct-10	2,121	0	0	0	0	0	0	2,121
			I-90/Eastgate Vicinity Bridges - Seismic (Total)		**2,434**	**0**	**0**	**0**	**0**	**0**	**0**	**2,434**
090		**109053B**	**I-90/I-405 Vic to 150th Ave NE Vic - Median Crossover Cable**	Bellevue								
MP 10.44 to MP 11.95 Northwest (King)	41 48	Improvement	This project will install cable rail on I-90 between MP 10.48 and MP 11.95.									
			Construction	Feb-05 - Jun-11	134	0	0	0	0	0	0	134
			I-90/I-405 Vic to 150th Ave NE Vic - Median Crossover Cable (Total)		**134**	**0**	**0**	**0**	**0**	**0**	**0**	**134**

Exhibit D.1: CIPP List for 2011 (continued)

Executive TEIS - Capital Projects System

2011 Agency Request Detail - All Modes

Report Filter: Program I, P / Route 090 / Region 1, 8

Sorted by: State Route, Milepost, Project Number

Expenditure Plan (Dollars In Thousands)

State Route Mileposts Region (County)	Leg Dist	Project-Number Program	Project Title & Description	Location & Schedule	Prior Cost	2011 - 2013	2013 - 2015	2015 - 2017	2017 - 2019	2019 - 2021	Future	Total Cost
090		**109053D**	**I-90/Eastgate Transit Access/142nd Place SE**	Eastgate								
MP 9.72 to MP 10.73 Urban Corridors (King)	41 48	Improvement	This project will construct a new elevated transit connection in the median with a new access over the westbound lanes into the Eastgate Park and Ride lot. Other minor work will be performed as needed. There may also be some park and ride lot expansion as part of the project. King County/Metro is developing a separate project to expand the park and ride lot capacity by constructing a parking structure. The two projects are being coordinated.									
			Preliminary Engineering	Aug-00 - Aug-06	2,734	0	0	0	0	0	0	2,734
			Construction	Feb-05 - Jun-11	23,987	0	0	0	0	0	0	23,987
			I-90/Eastgate Transit Access/142nd Place SE (Total)		**26,721**	**0**	**0**	**0**	**0**	**0**	**0**	**26,721**
090		**109060D**	**I-90/East Fork Issaquah Creek - Fish Passage**	Issaquah								
MP 18.70 to MP 18.71 Northwest (King)	05	Improvement	Remove the existing fish passage barrier and replace it with a wider fish passable structure.									
			Preliminary Engineering	Sep-08 - Mar-11	476	0	0	0	0	0	0	476
			Construction	Dec-10 - Jun-13	561	1,811	0	0	0	0	0	2,372
			I-90/East Fork Issaquah Creek - Fish Passage (Total)		**1,037**	**1,811**	**0**	**0**	**0**	**0**	**0**	**2,848**
090		**109061D**	**I-90/Sunset I/C Modifications - Modify Facility to Full Access I/C**	Issaquah								
MP 18.06 to MP 18.07 Northwest (King)	05	Improvement	Modify the interchange at Sunset to a full access interchange and upgrade the interchange at Front St. by adding a collector distributor ramp and improving off and on ramps.									
			Preliminary Engineering	Mar-08 - -	2,768	0	0	0	0	0	0	2,768
			Right of Way	- - -	10,931	0	0	0	0	0	0	10,931
			Construction	Apr-10 - Mar-11	83,111	0	0	0	0	0	0	83,111
			I-90/Sunset I/C Modifications - Modify Facility to Full Access I/C (Total)		**96,810**	**0**	**0**	**0**	**0**	**0**	**0**	**96,810**
090		**109061S**	**I-90/Issaquah to North Bend - Route Development Study**	Bellevue to No. Bend								
MP 8.79 to MP 33.29 Northwest (King)	05 41 48	Improvement	Study to investigate new access points to I-90 as this is a fast growing area. Improving existing interchanges will be considered.									
			Preliminary Engineering	Nov-05 - Dec-10	2,002	0	0	0	0	0	0	2,002
			I-90/Issaquah to North Bend - Route Development Study (Total)		**2,002**	**0**	**0**	**0**	**0**	**0**	**0**	**2,002**

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Exhibit D.1: CIPP List for 2011 (continued)

Sorted by: State Route, Milepost, Project Number

Expenditure Plan (Dollars In Thousands)

State Route Mileposts Region (County)	Leg Dist	Project-Number Program	Project Title & Description	Location & Schedule	Prior Cost	2011 - 2013	2013 - 2015	2015 - 2017	2017 - 2019	2019 - 2021	Future	Total Cost
090		**109064A**	**I-90/Highpoint to Preston - New Trail**	East of Issaquah								
MP 20.28 to MP 22.97 Northwest (King)	05	Improvement	This project will construct a 12-foot wide graveled surface Class 1 Bike Path to complete the missing link of The Mountain to Sounds Greenway trail system between High Point and Preston. Due to the trails proximity to I-90, six retaining walls will be constructed.									
			Preliminary Engineering	Nov-99 - Dec-02	1,084	0	0	0	0	0	0	1,084
			I-90/Highpoint to Preston - New Trail (Total)		**1,084**	**0**	**0**	**0**	**0**	**0**	**0**	**1,084**
090		**109066B**	**I-90/E. Fork Issaquah Crk Br Vic to Raging River Br Vic - Safety**	W. of Preston								
MP 21.45 to MP 23.40 Northwest (King)	05	Improvement	I-90 in eastern King Co. has a high frequency of crossover accidents. Installing cable barrier and guardrail in the median will reduce the risk of crossover collisions.									
			Preliminary Engineering	Jul-07 - Dec-08	87	0	0	0	0	0	0	87
			Construction	Nov-08 - Mar-10	315	0	0	0	0	0	0	315
			I-90/E. Fork Issaquah Crk Br Vic to Raging River Br Vic - Safety (Total)		**402**	**0**	**0**	**0**	**0**	**0**	**0**	**402**
090		**109066S**	**I-90/Mt Baker Tunnel & Mercer Island LID - Power Distribution**	Mercer Island								
MP 3.57 to MP 6.56 Northwest (King)	41	Preservation	This project will replace the Seimens breaker system in the I-90 Mount Baker Tunnels with newer technology which is more dependable and accurate. The electronic trip units operate the main power distribution circuit breakers for all of the tunnel and lid operations.									
			Preliminary Engineering	Nov-05 - Oct-06	68	0	0	0	0	0	0	68
			Construction	Nov-06 - Sep-09	622	0	0	0	0	0	0	622
			I-90/Mt Baker Tunnel & Mercer Island LID - Power Distribution (Total)		**690**	**0**	**0**	**0**	**0**	**0**	**0**	**690**
090		**109067S**	**I-90/Mt Baker Tunnel & Mercer Island Lid - PLC Replacement**	Mercer Island								
MP 3.57 to MP 6.56 Northwest (King)	37 41	Preservation	This project will replace the existing Programmable Logic Controllers (PLC) system in the Mount Baker Tunnel and the Mercer Island Tunnel on I-90 from MP 3.57 to MP 6.56. The existing PLC system in the Mount Baker and Mercer Island tunnels are no longer manufactured. Obtaining technical support, parts and training is becoming more difficult and this support may be unavailable in the near future.									
			Preliminary Engineering	Jan-06 - May-10	152	0	0	0	0	0	0	152
			Construction	Mar-10 - Jun-11	1,750	0	0	0	0	0	0	1,750
			I-90/Mt Baker Tunnel & Mercer Island Lid - PLC Replacement (Total)		**1,902**	**0**	**0**	**0**	**0**	**0**	**0**	**1,902**

Exhibit D.1: CIPP List for 2011 (continued)

Sorted by: State Route, Milepost, Project Number

Expenditure Plan (Dollars In Thousands)

State Route Mileposts Region (County)	Leg Dist	Project-Number Program	Project Title & Description	Location & Schedule	Prior Cost	2011 - 2013	2013 - 2015	2015 - 2017	2017 - 2019	2019 - 2021	Future	Total Cost
090		**109070C**	**I-90/EB Ramps to SR 18 - Add Signal and Turn Lanes**	West of North Bend								
MP 25.67 to MP 25.68 Northwest (King)	05	Improvement	This project consists of two stages. The first stage installs a signal and restripes the existing ramp to provide a 400-foot right turn pocket. The second stage will widen the ramp and shoulders to provide a second left turn lane to meet safety standards. In addition, SR 18 and approximately 1,000 feet of the county road extension beyond the westbound ramp intersection will be widened to provide a northbound receiving lane for the second left turn lane, with an area for the lanes to merge back into a single lane. The project also modifies the existing signals at the ramp terminals. Stage 1 will start construction in 2003. Stage 2 will start construction in 2007.									
			Preliminary Engineering	Mar-02 - Dec-03	1,058	0	0	0	0	0	0	1,058
			Construction	Sep-03 - Jul-09	3,779	0	0	0	0	0	0	3,779
			I-90/EB Ramps to SR 18 - Add Signal and Turn Lanes (Total)		**4,837**	**0**	**0**	**0**	**0**	**0**	**0**	**4,837**
090		**109079A**	**I-90/EB Ramps to SR 202 - Construct Roundabout**	North Bend								
MP 30.35 to MP 30.75 Northwest (King)	05	Improvement	This project will provide a two-lane roundabout at the intersection of the eastbound off ramp and on ramp terminals and SR 202.									
			Preliminary Engineering	Feb-05 - Jul-07	403	0	0	0	0	0	0	403
			Construction	Feb-07 - Apr-11	1,444	0	0	0	0	0	0	1,444
			I-90/EB Ramps to SR 202 - Construct Roundabout (Total)		**1,847**	**0**	**0**	**0**	**0**	**0**	**0**	**1,847**

Exhibit D.1: CIPP List for 2011 (continued)

Appendix E:

Intersection Locations and Operations for 2030 No Action and Action Alternatives

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Intersection Locations & Operations for 2030 No Action Alternative

The following map shows level-of-service during the AM and PM peak periods at key intersections along the corridor under the No Action Alternative. The level-of-service is provided for information only.

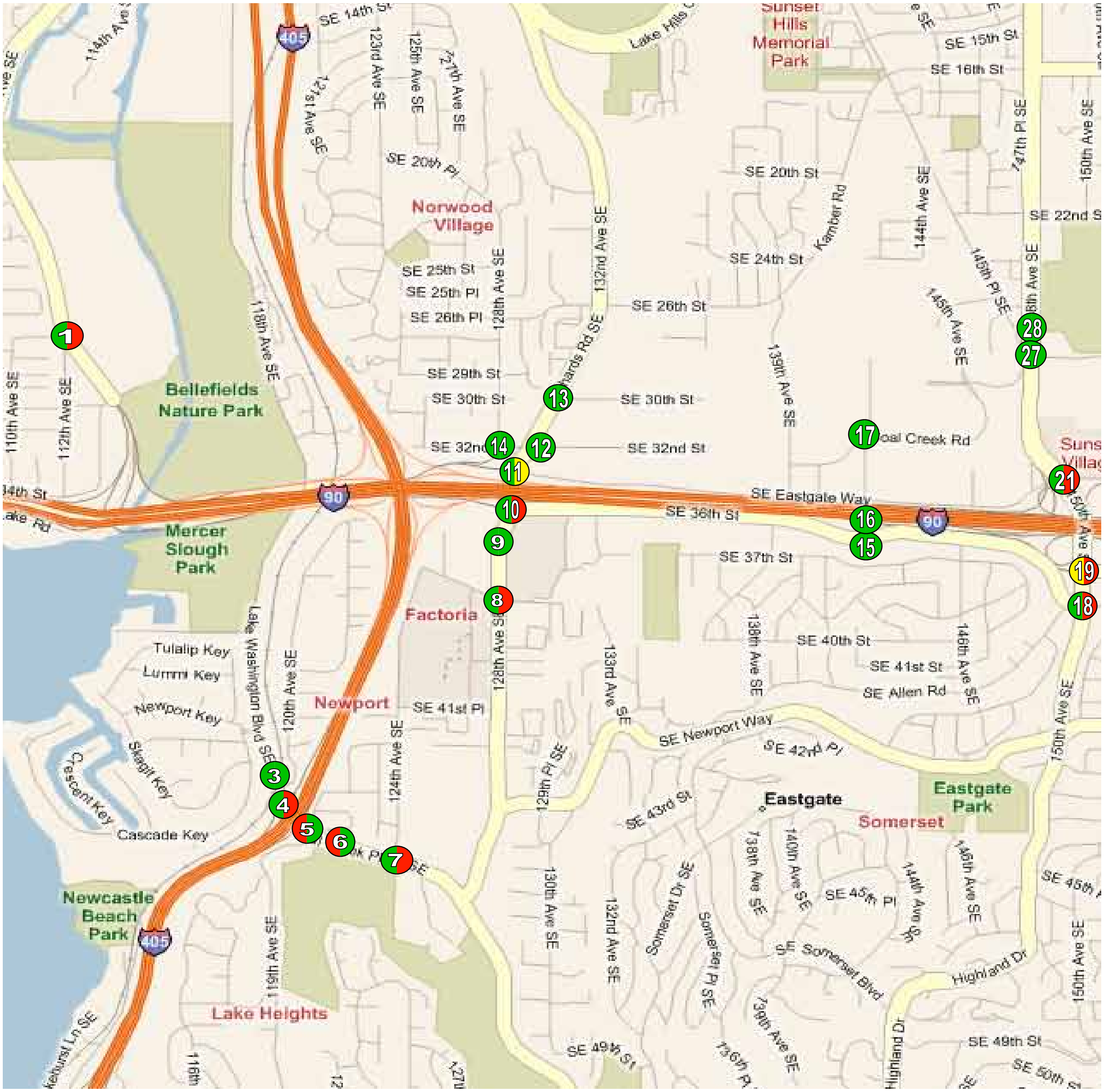
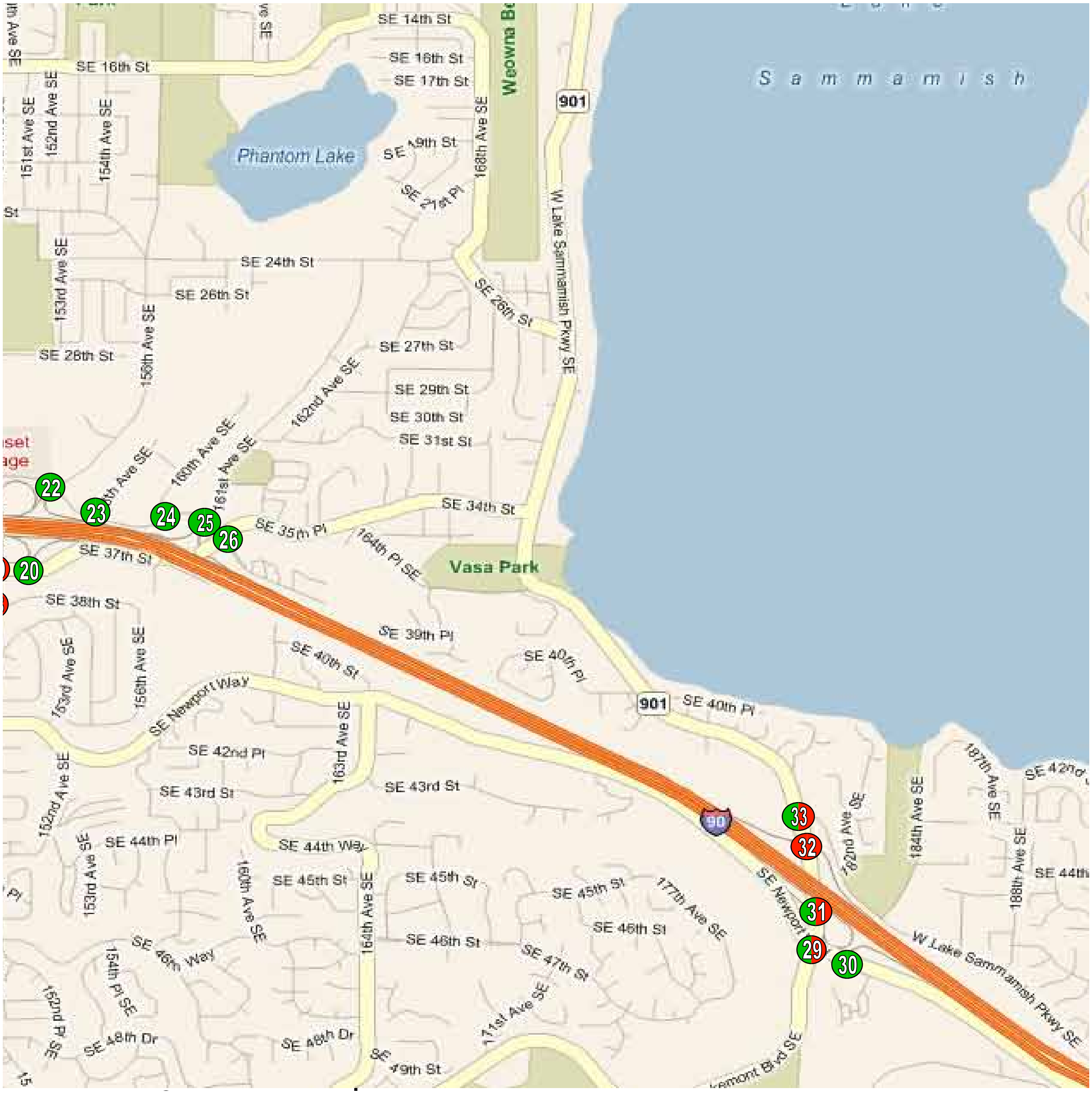
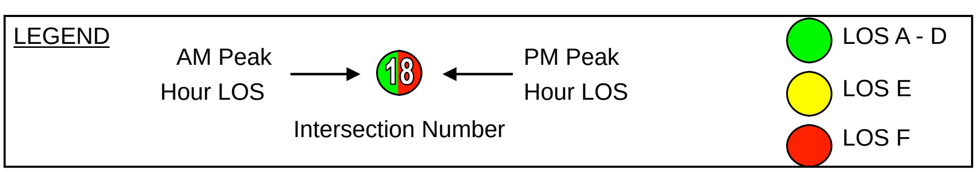


Exhibit E.1: Level-of-Service at Key Intersections for the No Action Alternative

Exhibit E.1: (continued)





Intersection Locations & Operations for 2030 Action Alternative

The following map shows level-of-service during the AM and PM peak periods at key intersections along the corridor. The intersection level-of-service information is provided for informational purposes only.

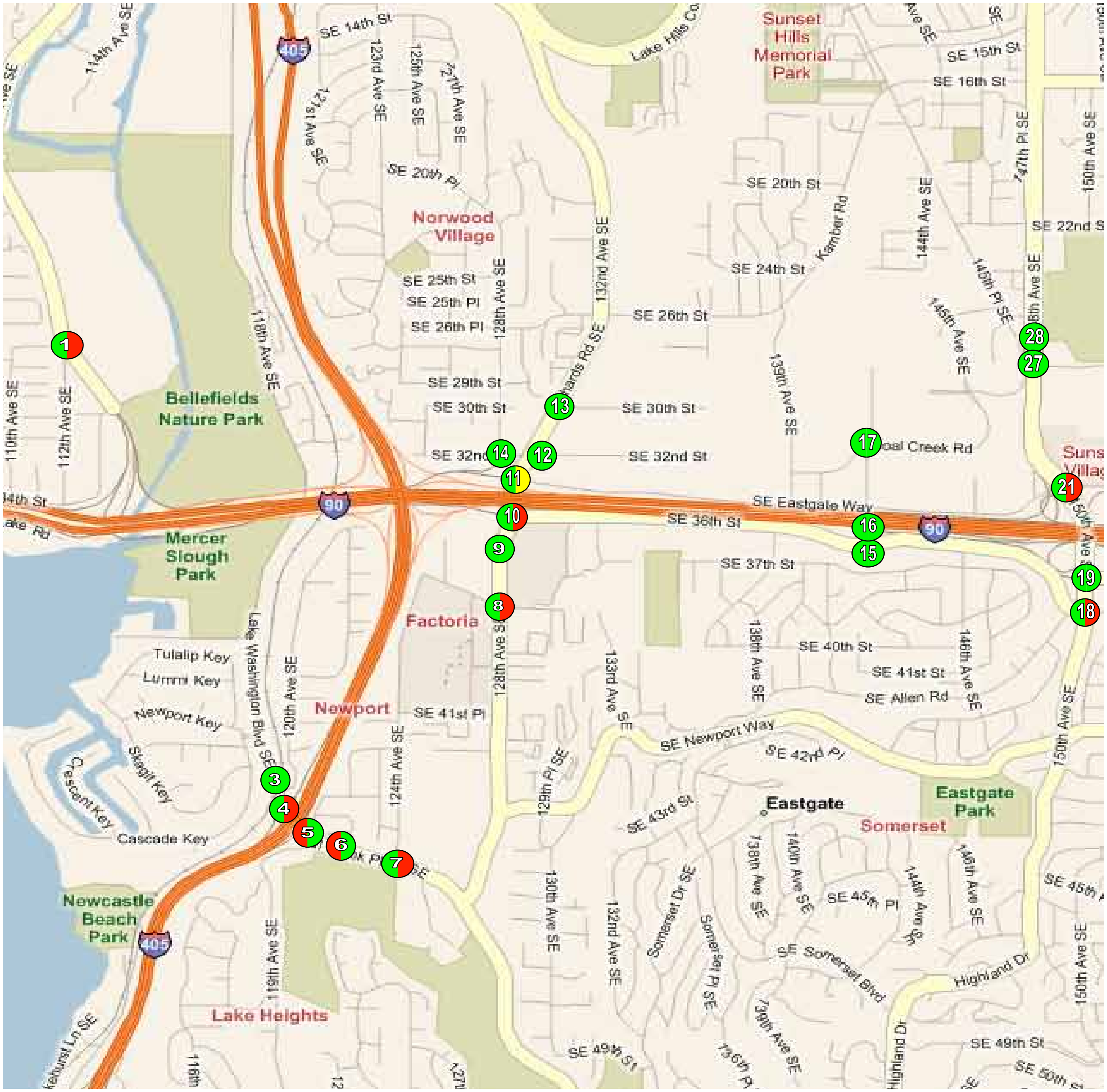
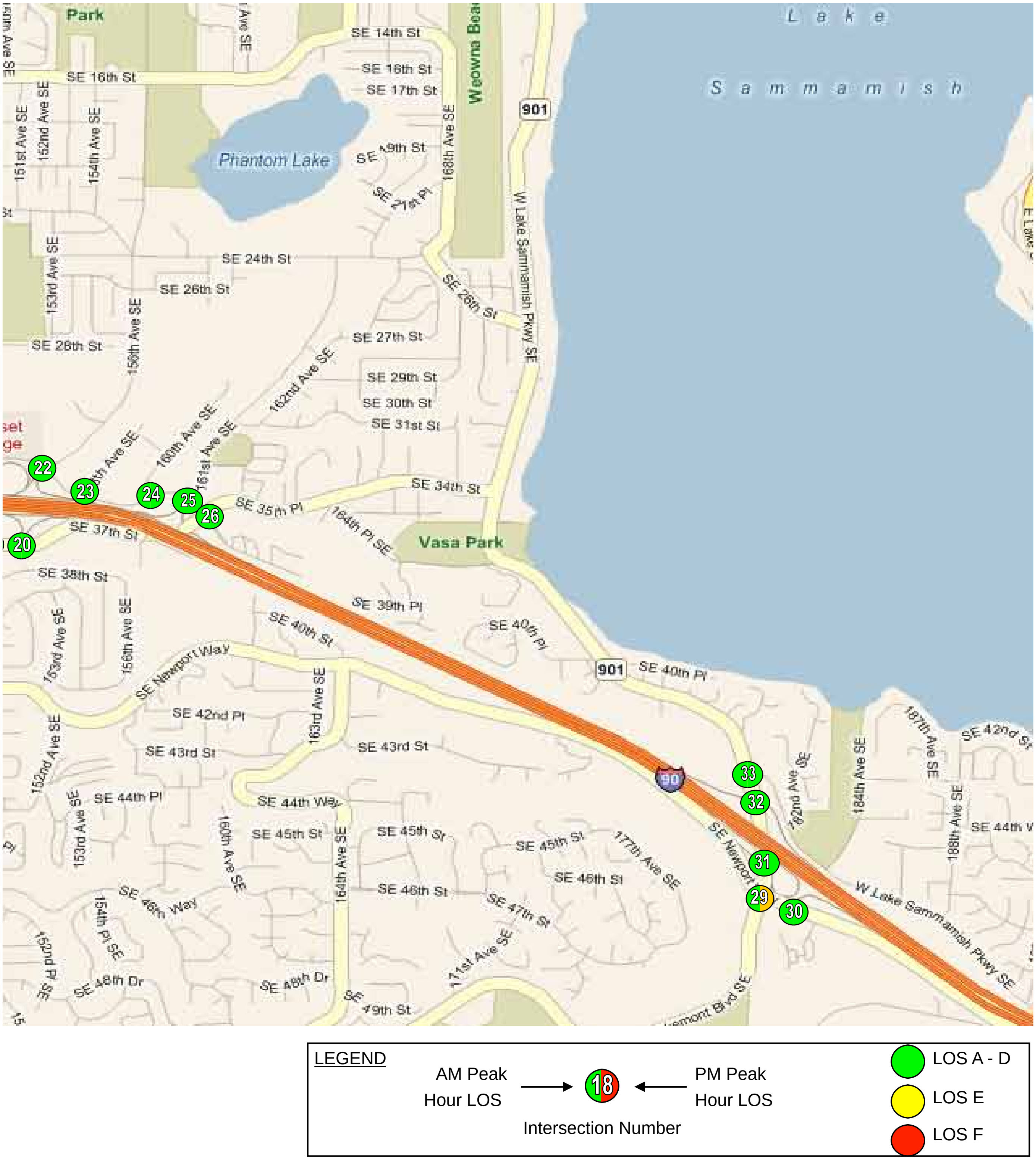


Exhibit E.2: Level-of-Service at Key Intersections for the Action Alternative

Exhibit E.2 (continued)



Appendix F:

Screening Criteria Scoring Matrix

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Exhibit F.1: Screening Criteria Scoring for Improvements

Screening Criteria Scoring for Improvements

	Criteria														
	Operations					Transit/HOV Operations		Freight Operations	Constructability			Environmental Factors			
	Corridor Travel Time	Throughput Capacity	Safety	Consistency with Local Planning	Benefit/ Cost Ratio	Speed and Reliability	Occupancy Throughput	Speed and Reliability	Construction Impacts to Users	Impacts to Landslide Hazards	Impacts to Other Seismic Hazards	Wetland Impacts	Stream/ Riparian Impacts	Section 4(f) and 6(f) impacts	Visual Quality Impacts
Improvement 1-1 *Convert I-90 WB & EB HOV to HOT Lane* ***Note: Analysis only done for 2030.***	By 2030, the HOT lanes show up to a 2-minute average reduction in travel time from Bellevue (Bellevue Way) to Issaquah (Sunset I/C) compared to the No Action Alternative and up to a 7-minute reduction in the maximum travel time.	The HOT lane showed an average increase in throughput of 18% in the westbound direction during the AM peak hour and 16% in the east-bound direction during the PM peak hour.	Increased separation between the HOT lane and GP lane, and the restrictions on access and egress to/from the HOT lane should improve safety along the corridor.	The cities of Bellevue and Issaquah were involved in the Corridor Working Group throughout the Corridor Study and did not objected to this improvement.	B/C = 2.24	Per WSDOT HOV Policy, the lane will be managed to operate at 45 mph or higher, so it assures a reliable speed through the corridor for HOV/transit vehicles.	Increases the efficiency of existing pavement. Between Issaquah and Bellevue, there is an increase in person throughput on the corridor of between 200 and 700 in the AM peak, and between 800 and 1,400 in the PM peak. At the high end, this represents an approx. 7% increase in throughput.	Because freight travels in general purpose lanes, the speed and reliability of freight mirrors the travel time evaluations for general purpose traffic. There is also a small increase in truck traffic on the corridor in the Bellevue/Issaquah section of I-90 when comparing the No Action to Action scenarios.	Minimal construction impacts to convert the existing HOV lane to HOT lane.	No landslide hazard impacts as all the work is within the existing pavement footprint.	No impact to the existing seismic hazards due to the change of operational strategy for the preferential lane.	No wetland impacts are anticipated. Electronic signs for HOT lanes will be placed outside of any wetlands.	No stream/ riparian impacts as all of the work is within the existing pavement footprint.	No Section 4(f) and 6(f) impacts because all of the work is within the existing pavement footprint.	More vehicles will use the existing roadway section. Additional sign struc-tures are required.
Improvement 3-1 *Westbound Auxiliary Lane – Rebuild Inside Shoulder and Restripe Roadway with 4' Inside Shoulder*	In the short-term (2015), the WB aux lane has the most benefit, showing a 3-minute average reduction in travel time from Issaquah (Sunset I/C) to Bellevue (Bellevue Way) compared to the No Action Alternative. However, by 2030 the average travel time for the same section is no different with or without the aux lane.	The aux lane provides an increase of 4% throughput in AM peak hour.	The WSDOT Benefit/Cost Worksheet shows this improvement contributes towards 31% of the benefit calculation by reducing occurrence or severity of collisions.	The cities of Bellevue and Issaquah were involved in the Corridor Working Group throughout the Corridor Study and did not objected to this improvement.	B/C = 1.49	With the auxiliary lane, the existing HOV lane becomes an add lane, as opposed to a converted lane, which ultimately improves the speed at the beginning of the HOV lane in Issaquah.	Between Issaquah and Bellevue, there is an increase in person throughput on the corridor with the improvement of 200 to 700 in the AM peak and between 800 and 1,400 in the PM peak. At the high end, this is an approx. 7% increase in throughput.	Because freight travels in general purpose lanes, the speed and reliability of freight mirrors the travel time evaluations for general purpose traffic. There is also a small increase in truck traffic on the corridor in the Bellevue/Issaquah section of I-90 when comparing the No Action to Action scenarios.	There will be construction impacts due to rebuilding inside shoulder and restriping roadway, but overall impacts are reduced compared to full design standards.	No landslide hazard impacts as all of the work is within existing pavement footprint.	Additional vehicle loading on existing bridge structures will need to be evaluated.	No wetland impacts as all of the work is within the existing pavement footprint.	No stream/ riparian impacts as all of the work is within the existing pavement footprint.	No Section 4(f) and 6(f) impacts because all of the work is within the existing pavement footprint.	More vehicles will be occupying the roadway cross-section

Page 1 of 10

Legend for Criteria
Green = Positive
Yellow = Neutral
Red = Negative

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Exhibit F.1: Screening Criteria Scoring for Improvements (continued)

	Criteria															
	Operations					Transit/HOV Operations		Freight Operations	Constructability			Environmental Factors				
	Corridor Travel Time	Throughput Capacity	Safety	Consistency with Local Planning	Benefit/ Cost Ratio	Speed and Reliability	Occupancy Throughput	Speed and Reliability	Construction Impacts to Users	Impacts to Landslide Hazards	Impacts to Other Seismic Hazards	Wetland Impacts	Stream/ Riparian Impacts	Section 4(f) and 6(f) impacts	Visual Quality Impacts	
Improvement 3-2 *Westbound Auxiliary Lane, Bellevue to Issaquah – Rebuild Outside Shoulder with Time of Day Restrictions and Variable Message Signs for a 16' Outside Hard Shoulder*	In the short-term (2015), the WB aux lane has the most benefit, showing a 3-minute average reduction in travel time from Issaquah (Sunset I/C) to Bellevue (Bellevue Way) compared to the No Action Alternative. However, by 2030 the average travel time for the same section is no different with or without the aux lane.	The aux lane provides an increase of 4% throughput in AM peak hour in 2015.	The WSDOT Benefit/Cost Worksheet shows this improvement contributes towards 31% of the benefit calculation by reducing occurrence or severity of collisions. This alter-native does not allow any shoulder usage during peak hours for disabled vehicles, which could affect safety on the corridor.	The cities of Bellevue and Issaquah were involved in the Corridor Working Group throughout the Corridor Study and did not objected to this improvement.	B/C = 1.26	With the auxiliary lane, the existing HOV lane becomes an add lane, as opposed to a converted lane, which ultimately improves the speed at the beginning of the HOV lane in Issaquah.	Between Issaquah and Bellevue, there is an increase in person throughput on the corridor with the improvement of 200 to 700 in the AM peak and between 800 and 1,400 in the PM peak. At the high end, this is an approx. 7% increase in throughput.	Because freight travels in general purpose lanes, the speed and reliability of freight mirrors the travel time evaluations for general purpose traffic. There is also a small increase in truck traffic on the corridor in the Bellevue/Issaquah section of I-90 when comparing the No Action to Action scenarios.	There will be construction impacts due to rebuilding the outside shoulder and restriping the roadway, but overall impacts are reduced compared to full design standards.	No landslide hazard impacts as all of the work is within the existing pavement footprint.	Additional vehicle loading on existing bridge structures will need to be evaluated.	No wetland impacts as all of the work is within the existing pavement footprint.	No stream/ riparian impacts as all of the work is within the existing pavement footprint.	No Section 4(f) and 6(f) impacts. All work is within the existing pavement footprint.	More vehicles will occupy the roadway cross-section	
Improvement 3-3 *Build Westbound Auxiliary Lane – add 12' pavement to achieve Full Standards*	In 2015 the WB aux lane reduces travel time between the Sunset Interchange in Issaquah and Bellevue Way by 3 minutes compared to the No Action Alternative.	The Auxiliary Lane provides an increase of 4% throughput in AM peak hour based on 2015 Analysis.	The WSDOT Benefit/Cost Worksheet shows this improvement contributes towards 31% of the benefit calculation by reducing occurrence or severity of collisions.	The cities of Bellevue and Issaquah were involved in the Corridor Working Group throughout the Corridor Study and did not objected to this improvement	B/C = 0.23	The Auxiliary lane becomes an Add Lane for the existing HOV lane as opposed to a converted lane. Providing an Add Lane improves speed and reliability.	Between Issaquah and Bellevue, there is an increase in person throughput on the corridor with the improvement of 200 to 700 in the AM peak and between 800 and 1,400 in the PM peak. At the high end, this is an approx. 7% increase in throughput.	Because freight travels in general purpose lanes, the speed and reliability of freight mirrors the travel time evaluations for general purpose traffic. There is also a small increase in truck traffic on the corridor in the Bellevue/Issaquah section of I-90 when comparing the No Action to Action scenarios.	Greater con-struction impacts due to rebuilding the shoulders, adding pavement, bridge widening, drainage, and retaining walls to achieve full design standards.	Landslide hazard areas identified on both sides of I-90 between MP 12.7 and MP 13.9.	Seismic hazard areas identified on north side of I-90 between MP 13.2 and MP 14.4. The bridge widen-ing may trigger seismic up-grades of the existing bridges	Center median may contain low class wetlands. Potential wetland impacts likely are unavoidable.	Seven water crossings were identi-fied between MP 11.6 and MP 17.0. The widen-ed bridge structures over creeks will create shading impacts.	No Section 4(f) and 6(f) impacts as the proposed widening will be in the median.	Widened roadway section, retaining walls, and larger bridge structures will increase visual impacts.	

Page 2 of 10

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Exhibit F.1: Screening Criteria Scoring for Improvements (continued)

	Criteria															
	Operations					Transit/HOV Operations		Freight Operations	Constructability			Environmental Factors				
	Corridor Travel Time	Throughput Capacity	Safety	Consistency with Local Planning	Benefit/ Cost Ratio	Speed and Reliability	Occupancy Throughput	Speed and Reliability	Construction Impacts to Users	Impacts to Landslide Hazards	Impacts to Other Seismic Hazards	Wetland Impacts	Stream/ Riparian Impacts	Section 4(f) and 6(f) impacts	Visual Quality Impacts	
Improvement 4-1 *Eastbound Auxiliary Lane, Eastgate to Lakemont – Rebuild Inside Shoulder and Restripe Roadway with 4' Inside Shoulder*	Eliminates the sudden merge of a full lane of traffic and subsequent backup on the mainline from the Eastgate on-ramp to the Factoria Interchange in the pm peak. In the short-term (2015), the EB aux lane has the most benefit, showing a 5-minute average reduction in travel time from Bellevue (Bellevue Way) to Issaquah (Sunset I/C) compared to the No Action Alternative. By 2030, the average and maximum travel time savings for the section are 2 and 4 minutes, respectively, with the aux lane in the p.m. peak hour.	The aux lane showed a small increase in throughput averaging 5% during the PM peak hour when the improvement would have the most benefit. The 5% increase is likely within the error of forecasting modeling; therefore, the assigned rating is neutral.	The WSDOT Benefit/Cost Worksheet shows this improvement contributes towards 15% of the benefit calculation by reducing occurrence or severity of collisions.	The city of Bellevue has expressed support for the EB Auxiliary Lane because this project improves mainline operations and reduces queues on the on-ramps which frequently spill back on to city streets.	B/C = 1.45	No noticeable difference in the speed of the HOV facilities with the additional eastbound auxiliary lane.	Between 200 and 700 in the AM peak and between 800 and 1,400 in the PM peak. At the high end, this is an approx. 7% increase in throughput.	Freight benefits mirror the travel time evaluations of general purpose traffic because freight travels in the general purpose lanes. There is also a small increase in truck traffic on the corridor in the Bellevue/Issaquah section of I-90 when comparing the No Action to Action scenarios.	Construction impacts due to rebuilding the inside shoulder and restriping the roadway, but overall impacts are reduced compared to full design standards.	No landslide hazard impacts as all of the work is within the existing pavement footprint.	Additional vehicle loading on existing bridge structures will need to be evaluated.	No wetland impacts as all of the work is within the existing pavement footprint.	No stream/ riparian impacts as all of the work is within the existing pavement footprint.	No Section 4(f) and 6(f) impacts because all of the works is within the existing pavement footprint.	More vehicles will be occupying roadway cross-section.	

Page 3 of 10

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Exhibit F.1: Screening Criteria Scoring for Improvements (continued)

	Criteria														
	Operations					Transit/HOV Operations		Freight Operations	Constructability			Environmental Factors			
	Corridor Travel Time	Throughput Capacity	Safety	Consistency with Local Planning	Benefit/ Cost Ratio	Speed and Reliability	Occupancy Throughput	Speed and Reliability	Construction Impacts to Users	Impacts to Landslide Hazards	Impacts to Other Seismic Hazards	Wetland Impacts	Stream/ Riparian Impacts	Section 4(f) and 6(f) impacts	Visual Quality Impacts
Improvement 4-2 *Eastbound Auxiliary Lane, Eastgate to Lakemont Build Auxiliary Lane – add 12' Pavement to achieve Full Standards*	Eliminates the sudden merge of a full lane during the p.m. peak of traffic which causes backup on the mainline from the Eastgate on-ramp to the Factoria I/C. In the short-term (2015), the EB aux lane has the most benefit, showing a 5-minute average reduction in travel time from Bellevue (Bellevue Way) to Issaquah (Sunset I/C) compared to the No Action Alternative.	The aux lane showed an increase in throughput averaging 5% during the PM peak hour when the improvement would have the most benefit.	The WSDOT Benefit/Cost Worksheet shows this improvement contributes towards 15% of the benefit calculation by reducing occurrence or severity of collisions.	The city of Bellevue has expressed support for and the EB Auxiliary Lane because this project improves mainline operations and reduces queues on the on-ramps which frequently spills back on to city streets.	B/C = 0.85	There is no noticeable difference in the speed of the HOV facilities with the additional eastbound auxiliary lane.	Between 200 and 700 in the AM peak and between 800 and 1,400 in the PM peak. At the high end, this is an approx. 7% increase in throughput.	Freight benefits mirror the travel time evaluations of general purpose traffic because freight travels in the general purpose lanes. There is also a small increase in truck traffic on the corridor in the Bellevue/Issaquah section of I-90 when comparing the No Action to Action scenarios.	Greater con-struction impacts due to rebuilding the shoulders, adding pavement, bridge widening, drainage, and retaining walls to achieve full design standards.	Landslide hazard areas identified on both sides of I-90 between MP 12.7 and MP 13.9.	Seismic hazard areas identified on north side of I-90 between MP 13.2 and MP 14.4. The bridge widen-ing may trigger seismic up-grades of the existing bridges	Center median may include low class wetlands. Potential wetland impacts likely are unavoidable.	Seven water crossings were identi-fied between MP 11.6 and MP 17.0. The widen-ed bridge structures over creeks will create shading impacts.	No Section 4(f) and 6(f) impacts as the proposed widening will be in center median.	Widened roadway section, retaining walls, and larger bridge structures will increase visual impacts.
Improvement 5 *Eastgate Rechannelization*	One of the intersections near the I/C will improve from of LOS from E to D with a reduction in delay of approx. 40 sec/vehicle in the AM peak hour. The LOS improves from F to D in the PM peak hour, with a 79 sec/vehicle average reduction in delay.	Throughput can be expected to be improved with the reductions in delay.	The WSDOT Benefit/Cost Worksheet shows this improvement contributes towards 17% of the benefit calculation by reducing occurrence or severity of collisions.	The city of Bellevue has several local street improve-ments in their TFP that have been included in this analysis along with the WSDOT improvement.	B/C = 6.46	Speed and reliability of transit will improve because of the decreased delay and improved throughput.	No change in transit occupancy is expected with this improve-ment.	Because freight travels in general purpose lanes, the speed and reliability of freight mirrors the travel time evaluations for general purpose traffic. There is also a small increase in truck traffic on the corridor in the Bellevue/Issaquah section of I-90 when comparing the No Action to Action scenarios.	Construction impacts will be minimal and will be limited to the south side of the Eastgate I/C.	No landslide hazard impacts as all of the work is within the existing pavement footprint.	Not affected by seismic hazard.	No wetland impacts because all of the work is within the existing pavement footprint.	No stream/ riparian impacts as all of the work is within the existing pavement footprint.	No Section 4(f) and 6(f) impacts because all of the work is within the existing pavement footprint.	More vehicles will be using the roadway cross-section

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Exhibit F.1: Screening Criteria Scoring for Improvements (continued)

	Criteria														
	Operations					Transit/HOV Operations		Freight Operations	Constructability			Environmental Factors			
	Corridor Travel Time	Throughput Capacity	Safety	Consistency with Local Planning	Benefit/ Cost Ratio	Speed and Reliability	Occupancy Throughput	Speed and Reliability	Construction Impacts to Users	Impacts to Landslide Hazards	Impacts to Other Seismic Hazards	Wetland Impacts	Stream/ Riparian Impacts	Section 4(f) and 6(f) impacts	Visual Quality Impacts
Improvement 6 *Widen Existing WLSP Roundabout to Multilane to add Capacity*	There is a significant reduction in delay at the existing RAB because of re-routing of left-turn vehicles at the ramp terminal.	There is an improvement in delay and v/c at the existing RAB. This improvement allows re-routing of left-turn vehicles at the ramp terminal to the widened RAB as U-turns.	The WSDOT Benefit/Cost Worksheet shows this improvement contributes approx. 10% of the benefit calculation due to the reduction in occurrence or severity of collisions.	The city of Bellevue had no plans in the TFP to improve this intersection.	B/C=13.70	N/A - No Transit	N/A - No Transit	N/A – No Freight	Construction impacts will be limited to the area around the RAB. Measurable impacts to the I-90 mainline are not anticipated.	No landslide hazard impacts were identified.	Existing RAB is within an identified seismic hazard area.	No wetland impacts were identified.	No stream/ riparian impacts as all of the work is within the existing pavement footprint.	No Section 4(f) and 6(f) impacts were identified.	More vehicles will be occupying roundabout.

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Exhibit F.1: Screening Criteria Scoring for Improvements (continued)

	Criteria															
	Operations					Transit/HOV Operations		Freight Operations	Constructability			Environmental Factors				
	Corridor Travel Time	Throughput Capacity	Safety	Consistency with Local Planning	Benefit/ Cost Ratio	Speed and Reliability	Occupancy Throughput	Speed and Reliability	Construction Impacts to Users	Impacts to Landslide Hazards	Impacts to Other Seismic Hazards	Wetland Impacts	Stream/ Riparian Impacts	Section 4(f) and 6(f) impacts	Visual Quality Impacts	
Improvement 7 *Provide additional off-ramp to existing eastbound Lakemont Off-ramp*	The addition of an off-ramp on the existing ramp alternative improves operations at two intersections but also shows worse conditions at another. Lakemont at EB ramps shows delay decreases from 82 sec. to 23 sec. and v/c is cut in half from 1.0 to 0.5. Newport at Lakemont sees delays diminish from 107 sec. to 72 sec. and v/c decreases from 1.20 to 1.06. Newport at EB ramps sees delays grow from 1 sec. to 39 sec. and v/c increases from 0.61 to 0.92.	Vehicles destined for EB Newport Way avoid traveling through two of the three I/S they previously had to travel through, while also reducing the volume of exiting vehicles at the EB off-ramp terminal by approx. half, resulting in an increase in throughput capacity of the corridor south of I-90.	The WSDOT Benefit/Cost Worksheet shows this improvement contributes towards 17% of the benefit calculation by reducing occurrence or severity of collisions.	Through the Eastgate planning study underway in 2010, the Bellevue Transportation Commission recommended that the city to include this I/C in the study area and to consider improving the operations on the south side of I-90.	B/C = 6.05	N/A – No Transit	N/A – No Transit	N/A – No Freight	The new slip ramp can be constructed with minimal construction impacts.	No landslide hazard impacts were identified.	No impacts to seismic hazards were identified.	No wetland impacts were identified.	No stream/ riparian impacts were identified.	No Section 4(f) and 6(f) impacts were identified.	The pro- posed slip ramp will result in additional pavement/ roadway.	

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Exhibit F.1: Screening Criteria Scoring for Improvements (continued)

	Criteria														
	Operations					Transit/HOV Operations		Freight Operations	Constructability			Environmental Factors			
	Corridor Travel Time	Throughput Capacity	Safety	Consistency with Local Planning	Benefit/ Cost Ratio	Speed and Reliability	Occupancy Throughput	Speed and Reliability	Construction Impacts to Users	Impacts to Landslide Hazards	Impacts to Other Seismic Hazards	Wetland Impacts	Stream/ Riparian Impacts	Section 4(f) and 6(f) impacts	Visual Quality Impacts
Improvement 8-1 *Overcrossing @ approximately 11^{th} Avenue NW without a Direct Access Ramp (DAR)*	The overcrossing alternative will improve operations in 2030 compared to the No Build scenario. The WB ramps show v/c diminished from 14.1 to 0.76 with a small increase in delay from 17 to 18 sec. while the EB ramps show a decrease in delay from 88 sec. to 28 sec. while v/c grows from 0.24 to 0.84.	Comparing traffic volumes across a screenline at Front Street, 4^{th} Ave., $11^{th}/12^{th}$ Ave., and SR 900, there are approx. 900 more vehicles during the PM peak hour that are served across I-90 if the $11^{th}/12^{th}$ Avenue overcrossing is constructed, than without it.	The WSDOT Benefit/Cost Worksheet shows this improvement contributes approx. 10% of the benefit calculation due to the reduction in occurrence or severity of collisions.	The city of Issaquah has been working on the Central Issaquah Subarea Plan since 2008. In October 2010 the Task Force recommended the inclusion of the $11^{th}/12^{th}$ Ave. overcrossing to the City Council.	B/C = 1.62	Transit uses the SR 900 I/C. This overcrossing will create significant improvements in delay and throughput. Therefore, the speed and reliability of transit will also improve.	No change in transit occupancy is expected with this improvement.	Because freight travels in general purpose lanes, the speed and reliability of freight mirrors the travel time evaluations for general purpose traffic.	Construction impacts to I-90 mainline are minimal to measurable with construction of only the new undercrossing.	No landslide hazard impacts were identified.	No impacts to seismic hazards were identified.	No wetland impacts were identified.	No stream/ riparian impacts were identified.	No Section 4(f) and 6(f) impacts were identified.	The proposed project will add structures/ramps within the existing ROW.
Improvement 8-2 *Overcrossing with Direct Access Ramp (DAR) at approximately $11^{th}/12^{th}$ Avenue NW*	The overcrossing alternative will improve operations in 2030 compared to the No Build scenario. The WB ramps show v/c decreases from 14.1 to 0.76. The EB ramps show a reduction in delay from 88 sec. to 28 sec. while v/c grows from 0.24 to 0.84. Although this alternative includes a DAR the results do not differ from the alternative without the DAR.	Approx. 900 more vehicles during the PM peak hour are served across I-90 if the $11^{th}/12^{th}$ Ave. overcrossing is constructed, than without it - comparing traffic volumes across a screenline at Front Street, 4^{th} Ave., $11^{th}/12^{th}$ Avenue, and SR 900.	The WSDOT Benefit/Cost Worksheet shows this improvement contributes approx. 10% of the benefit calculation due to the reduction in occurrence or severity of collisions.	The city of Issaquah has been working on the Central Issaquah Subarea Plan since 2008. In October 2010 the Task Force recommended to City Council that the $11^{th}/12^{th}$ Ave. overcrossing be included. The Task Force and the city do not want the DAR ramps to preclude future light rail to the city.	B/C = 2.36	Transit uses the SR 900 I/C. Improvements in delay and throughput would be significant. The DAR will allow transit to access the HOV/HOT lanes directly, as opposed to weaving across four lanes of freeway lanes. Therefore, the speed and reliability of transit will also improve.	A small change in transit occupancy could be expected with this improvement.	Because freight travels in general purpose lanes, the speed and reliability of freight mirrors the travel time evaluations for general purpose traffic. There is also a small increase in truck traffic on the corridor in the Bellevue/Issaquah section of I-90 when comparing the No Action to Action scenarios.	Construction impacts to the I-90 mainline can be significant if direct access ramps and new overcrossing are constructed.	No landslide hazard impacts were identified.	No impacts to seismic hazards were identified.	The center median may include low class wetlands. Potential wetland impacts are likely unavoidable.	No stream/ riparian impacts were identified.	No Section 4(f) and 6(f) impacts were identified.	The proposed project will add structures/ramps within the existing ROW.

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Exhibit F.1: Screening Criteria Scoring for Improvements (continued)

	Criteria														
	Operations					Transit/HOV Operations		Freight Operations	Constructability			Environmental Factors			
	Corridor Travel Time	Throughput Capacity	Safety	Consistency with Local Planning	Benefit/ Cost Ratio	Speed and Reliability	Occupancy Throughput	Speed and Reliability	Construction Impacts to Users	Impacts to Landslide Hazards	Impacts to Other Seismic Hazards	Wetland Impacts	Stream/ Riparian Impacts	Section 4(f) and 6(f) impacts	Visual Quality Impacts
Improvement 9-1 *Tight Urban Diamond Interchange (TUDI) at Front Street*	In 2030, the TUDI Build alternative improves the EB ramps, where delay decreases from 87 sec. in No Build to 33 sec. and v/c decreases from 1.24 to 0.86. The WB ramps operate almost the same as in No Build, with delay growing from 16 sec. to 18 sec. and v/c increasing from 0.84 to 0.85.	Throughput can be expected to be improved because of reductions in delay.	The WSDOT Benefit/Cost Worksheet shows this improvement contributes towards 48% of the benefit calculation by reducing occurrence or severity of collisions.	The city of Issaquah has been working on the Central Issaquah Subarea Plan since 2008. In October 2010 the Task Force recommended the inclusion of an improved I/C at Front Street to the City Council.	B/C = 1.10	Speed and reliability of transit will improve because of improve-ments in delay and throughput.	No change in transit occupancy is expected with this improve-ment.	Because freight travels in general purpose lanes, the speed and reliability of freight mirrors the travel time evaluations for general purpose traffic.	Construction impacts to the I-90 mainline and the I/C area will be significant.	No landslide hazard impacts were identified.	Seismic hazard area identified on north side of I/C may likely be impacted.	No wetland impacts were identified.	No stream/ riparian impacts were identified.	No Section 4(f) and 6(f) impacts were identified.	The new I/C will not differ measurably from the existing I/C.
Improvement 9-2 *Single Point Urban Interchange (SPUI) at Front Street*	The No Build conditions results in the WB ramps with 14.1 sec. of delay and v/c of 0.76 while the EB ramps operate with 58 sec. of delay and v/c of 1.12. In 2030, the SPUI Build alternative consolidates the I/C to a single I/S operating with 34 sec. of delay and v/c of 0.87.	Throughput is expected to improve because of the reductions in delay.	The WSDOT Benefit/Cost Worksheet shows this improvement contributes towards 48% of the benefit calculation by reducing occurrence or severity of collisions.	The city of Issaquah has been working on the Central Issaquah Subarea Plan since 2008. In October 2010 the Task Force recommended the inclusion of an improved I/C at Front Street to the City Council.	B/C = 0.74	With improve-ments in delay and throughput, the speed and reliability of transit will improve.	No change in transit occupancy is expected with this improve-ment.	Because freight travels in general purpose lanes, the speed and reliability of freight mirrors the travel time evaluations for general purpose traffic.	Construction impacts to the I-90 mainline and the I/C area will be significant and measurable when constructing a new interchange within the existing I/C footprint.	No landslide hazard impacts were identified.	Seismic hazard area identified on north side of I/C may likely be impacted.	No wetland impacts were identified.	No stream/ riparian impacts were identified.	No Section 4(f) and 6(f) impacts were identified.	The new I/C will not differ measurably from the existing I/C.

Page 8 of 10

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Exhibit F.1: Screening Criteria Scoring for Improvements (continued)

	Criteria														
	Operations					Transit/HOV Operations		Freight Operations	Constructability			Environmental Factors			
	Corridor Travel Time	Throughput Capacity	Safety	Consistency with Local Planning	Benefit/ Cost Ratio	Speed and Reliability	Occupancy Throughput	Speed and Reliability	Construction Impacts to Users	Impacts to Landslide Hazards	Impacts to Other Seismic Hazards	Wetland Impacts	Stream/ Riparian Impacts	Section 4(f) and 6(f) impacts	Visual Quality Impacts
Improvement 10 *Preston-Fall City Ramp Traffic Control*	The 2030 Build alternative shows improvement in operations compared to the No Build. Delay decreases from 47 sec. to 2 sec. while v/c rises from 0.66 to 0.80 at the WB ramps. Delay decreases from 357 sec. to 149 sec. and v/c reduces from 1.74 to 1.50 at the EB ramps.	Throughput can be expected to improve because of reductions in delay.	The WSDOT Benefit/Cost Worksheet shows this improvement contributes approx. 10% of the benefit calculation due to the reduction in occurrence or severity of collisions.	There were no local plans to improve this I/C, but the local jurisdictions involved in the Corridor Working Group have not objected to this improvement.	B/C = 3.40	Speed and reliability of transit will improve because of improve-ments in delay and throughput.	No change in transit occupancy is expected with this improve-ment.	Note: RAB will need to be designed to accommodate freight trucks that use this inter-change area, which has a small industrial park.	Construction impacts will be limited to the I/C area and are not anticipated to impact the I-90 mainline.	No landslide hazard impacts were identified.	A seismic hazard area identified on the north side of the I/C may likely be impacted. No structures are proposed with the traffic control project.	No wetland impacts were identified.	No stream/ riparian impacts were identified.	No Section 4(f) and 6(f) impacts were identified.	Visual quality will not differ from the existing signal.
Improvement 11 *ATM at I-90/SR 18 I/C*	Current and 2015 analysis shows that traffic backs up on the ramps at this I/C and queuing regularly occurs on I-90. ATM should improve travel time because drivers will be aware of speed differences between vehicles on the ramp and on the mainline.	Throughput can be improved because of traveler information about upcoming traffic conditions.	The ATM warns drivers of the speed differential between the ramps and the mainline, which will potentially reduce the chance of collisions.	There were no local plans to improve this I/C, but the local jurisdictions involved in the Corridor Working Group have not objected to this improvement.	B/C = 1.40	Speed and reliability of transit will improve because of improve-ments in delay and throughput.	No change in transit occupancy is expected with this improve-ment.	Because freight travels in general purpose lanes, the speed and reliability of freight mirrors the travel time evaluations for general purpose traffic.	Construction impacts will be minimal for the ATM improve-ments and are not anticipated to impact the I-90 mainline or the I/C measurably.	No landslide hazard impacts were identified.	No seismic hazard impacts were identified.	No wetland impacts were identified.	No stream/ riparian impacts were identified.	No Section 4(f) and 6(f) impacts were identified.	Added electronic signs may impact visual quality.

Page 9 of 10

Legend for Criteria
Green = Positive
Yellow = Neutral
Red = Negative

Note: Improvement 2 – ATM with Variable Speed Zone and Lane Control from Eastgate to Sunset does not appear on this table because a B/C A was not performed for it.

Exhibit F.1: Screening Criteria Scoring for Improvements (continued)

	Criteria															
	Operations					Transit/HOV Operations		Freight Operations	Constructability			Environmental Factors				
	Corridor Travel Time	Throughput Capacity	Safety	Consistency with Local Planning	Benefit/ Cost Ratio	Speed and Reliability	Occupancy Throughput	Speed and Reliability	Construction Impacts to Users	Impacts to Landslide Hazards	Impacts to Other Seismic Hazards	Wetland Impacts	Stream/ Riparian Impacts	Section 4(f) and 6(f) impacts	Visual Quality Impacts	
Improvement 12-1 *436th Avenue SE Signals*	In the 2030 signalized Build alternative, delay and v/c decrease at both ramp terminals compared to No Build conditions. At the EB ramps, delay is lowered from 84 sec. to 10 sec. with v/c diminishing from 0.61 to 0.39. Delay on the WB ramps decreases from 450 sec. to 15 sec. with v/c lowering from 1.92 to 1.72.	Throughput can be expected to improve because of reductions in delay.	The WSDOT Benefit/Cost Worksheet shows this improvement contributes less than 10% of the benefit calculation due to the reduction in occurrence or severity of collisions.	There were no local plans to improve this I/C, but the city of North Bend did not object to this improvement.	B/C=77.21	N/A – No Transit	N/A – No Transit	Because freight travels in general purpose lanes, the speed and reliability of freight mirrors the travel time evaluations for general purpose traffic.	Construction impacts will be limited to the I/C area and are not anticipated to impact the I-90 mainline.	No landslide hazard impacts were identified.	A seismic hazard area was identified on both sides of the I/C, but no structures are proposed with the signal-ization project.	No wetland impacts were identified.	No stream/ riparian impacts were identified.	No Section 4(f) and 6(f) impacts were identified.	Visual quality will not differ from the existing signal.	
Improvement 12-2 *436th Avenue SE Roundabouts (RAB) or Signals*	In the 2030 RAB Build alternative, delay is significantly decreased at both the ramp terminals compared to No Build conditions. Delay is lowered at the WB ramps from 84 sec. to 5 sec. while v/c remains unchanged at 0.61. The EB ramps see delay reduce from 450 sec. to 8 sec. with v/c decreased from 1.92 to 0.62.	Throughput can be expected to improve because of reductions in delay.	The WSDOT Benefit/Cost Worksheet shows this improvement contributes less than 10% of the benefit calculation due to the reduction in occurrence or severity of collisions.	There were no local plans to improve this I/C, but the local jurisdictions involved in the Corridor Working Group have not objected to this improvement.	B/C=10.45	N/A – No Transit	N/A – No Transit	Because freight travels in general purpose lanes, the speed and reliability of freight mirrors the travel time evaluations for general purpose traffic.	Construction impacts will be limited to the I/C area and are not anticipated to impact the I-90 mainline.	No landslide hazard impacts were identified.	A seismic hazard area was identified on both sides of the I/C, but no structures are proposed with the RAB project.	No wetland impacts were identified.	No stream/ riparian impacts were identified.	No Section 4(f) and 6(f) impacts were identified.	Proposed RAB will offer landscaping opportunities	

Legend for Criteria
Green = Positive
Yellow = Neutral
Red = Negative

Note: Improvement 2 – ATM with Variable Speed Zone and Lane Control from Eastgate to Sunset does not appear on this table because a B/C A was not performed for it.

Appendix G:

Improvements Considered and Eliminated

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Mainline Improvements Considered and Eliminated

Improvement 1-2: Convert Existing HOV Lane to a HOT Lane plus Westbound and Eastbound Auxiliary Lanes (Shoulder Rebuild)

This improvement is a combination of converting the HOV Lanes to HOT lanes and adding eastbound and westbound auxiliary lanes. We combined these improvements because of the opportunity it provided to add capacity and reduce congestion in both directions. Constructing the auxiliary lanes and HOT lanes in phases provides for a phased financial approach, as well.

Description
This improvement is not being advanced because of its cost. and opportunity to phase project. It was determined that this package of improvements could be evaluated as individual projects.

This improvement would add a westbound auxiliary lane between SR 900 and the Eastgate Interchange by restriping the existing pavement. It would also provide a new eastbound auxiliary lane (see a typical cross-section in Exhibit G.1) by rebuilding the existing 10-foot inside shoulder with full depth pavement so that it can accommodate traffic loads as well as converting the existing HOV lane to a high occupancy toll (HOT) lane.

Recommend Advancing: NO

Reasons for Not Advancing
This improvement package is not recommended because of its cost. It was determined that this package of improvements could be evaluated as individual projects.

Planning Level Cost Estimate: $42 million (2009 $).

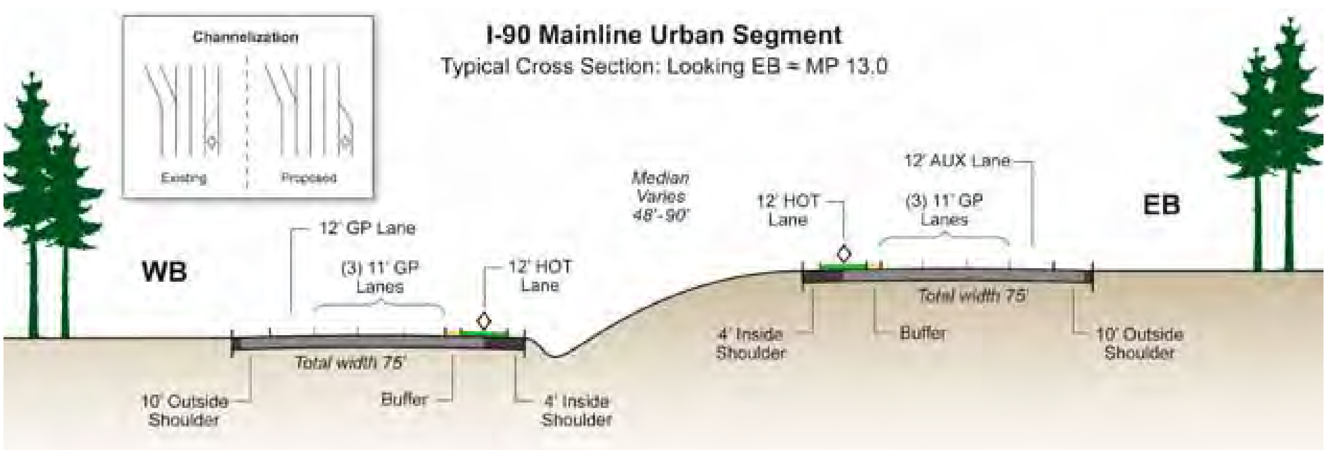

Exhibit G.1: Convert Existing HOV Lane to a HOT Lane, add WB and EB Aux Lanes (Bellevue to Issaquah)

Improvement 1-3: Convert Existing Eastbound HOV Lane to a HOT Lane plus Eastbound Auxiliary Lane (Shoulder Rebuild)

Description
This improvement would add a new eastbound auxiliary lane (see a typical cross-section in Exhibit G.2) by rebuilding the existing 10-foot inside shoulder with full depth pavement so that it can accommodate traffic loads as well as convert the existing HOV lane to a high occupancy toll (HOT) lane.

Recommend Advancing: NO

Reasons for Not Advancing
We did not advance this improvement because of its cost. It was determined that this package of improvements could be evaluated as individual projects.

Planning Level Cost Estimate: $27 million (2009 $).

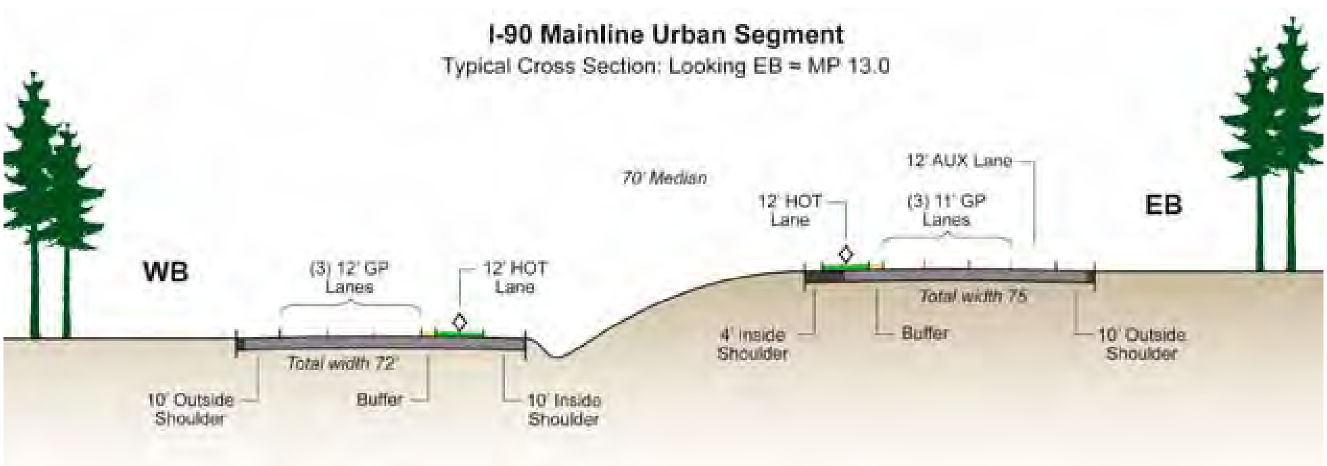

Exhibit G.2: Convert Existing Eastbound HOV Lane to a HOT Lane and add Eastbound Auxilary Lane (Bellevue to Issaquah)

Improvement 1-4: Convert Existing HOV Lane to a HOT Lane plus Eastbound Auxiliary Lane (Full Standards)

Description

This improvement would convert the existing HOV lane to a high occupancy toll (HOT) lane and add an eastbound auxiliary lane by rebuilding the existing shoulder with full depth pavement so that it can accommodate traffic loads and by adding new pavement it can accommodate standard 12-foot-wide lanes and 10- and 13-foot-wide shoulders. Active Traffic Management technology would allow the 16-foot outside pavement width to transition between a general-purpose lane (during the morning peak) and a full standard (plus) shoulder during the remaining 21 hours a day (see a typical cross-section in Exhibit G.3).

Recommend Advancing: NO

Reasons for Not Advancing

This improvement is not being advanced because of its cost, low benefit/cost ratio and opportunity to phase project. It was determined that this package of improvements could be evaluated as individual projects.

Planning Level Cost Estimate: $36 million (2009 $).

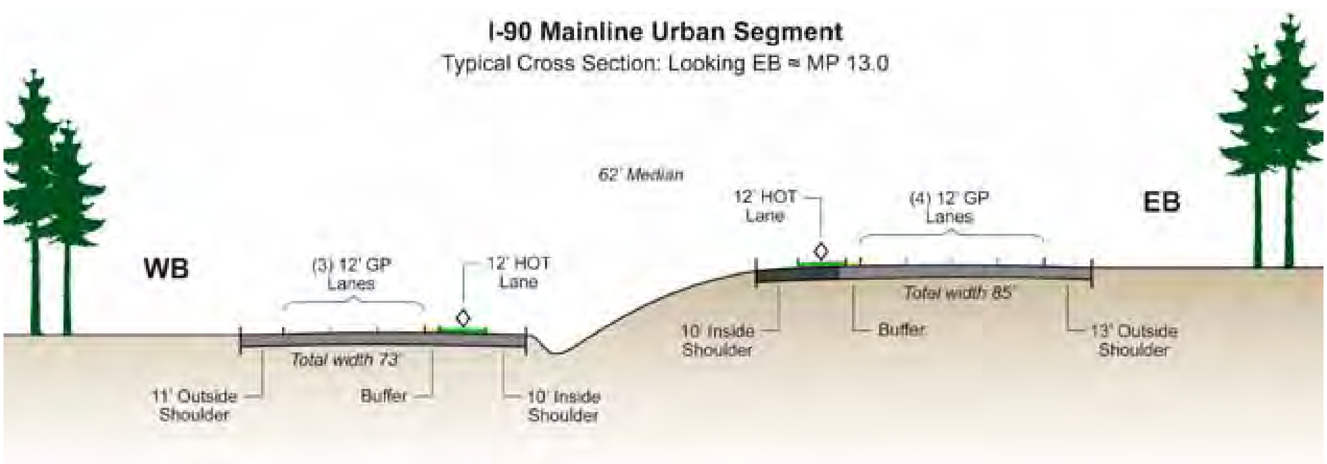

Exhibit G.3: Convert Existing HOV Lane to a HOT Lane and add Eastbound Auxilary Lane (Bellevue to Issaquah)

Improvement 1-5: Convert Existing HOV Lane to a HOT Lane plus Westbound and Eastbound Auxiliary Lanes (Full Standards)

Description
This improvement would convert the existing HOV lane to a high occupancy toll (HOT) lane, add a new westbound Auxiliary Lane by rebuilding the existing outside shoulder, restriping the roadway, and installing variable message signs (ATM) over the outside lane. An eastbound auxiliary lane would be added by rebuilding the existing shoulder with full depth pavement so that it can accommodate traffic loads and by adding new pavement to accommodate standard 12-foot-wide lanes and 10- and 13-foot-wide shoulders. Active Traffic Management technology would allow the 16-foot outside pavement width to transition between a general-purpose lane (during the morning peak) and a full standard (plus) shoulder during the remaining 21 hours a day (see a typical cross-section in Exhibit G.4).

Recommend Advancing: NO

Reasons for Not Advancing
We did not advance this improvement due to the extremely high cost for this improvement and low benefit/cost ratio. It was determined that this package of improvements could be evaluated as individual projects.

Planning Level Cost Estimate: $130 million (2009 $).

Speed Profiles
The speed profiles previously provided reflected westbound and eastbound traffic conditions for 2030 without improvements and traffic conditions in 2030 with GP and HOT lane improvements and Auxiliary Lanes and HOT lane improvements. The traffic analysis focused on the a.m. peak direction, which is westbound and the p.m. peak direction, which is eastbound. Travel times and vehicle throughput were also reported with the 2030 speed profiles.

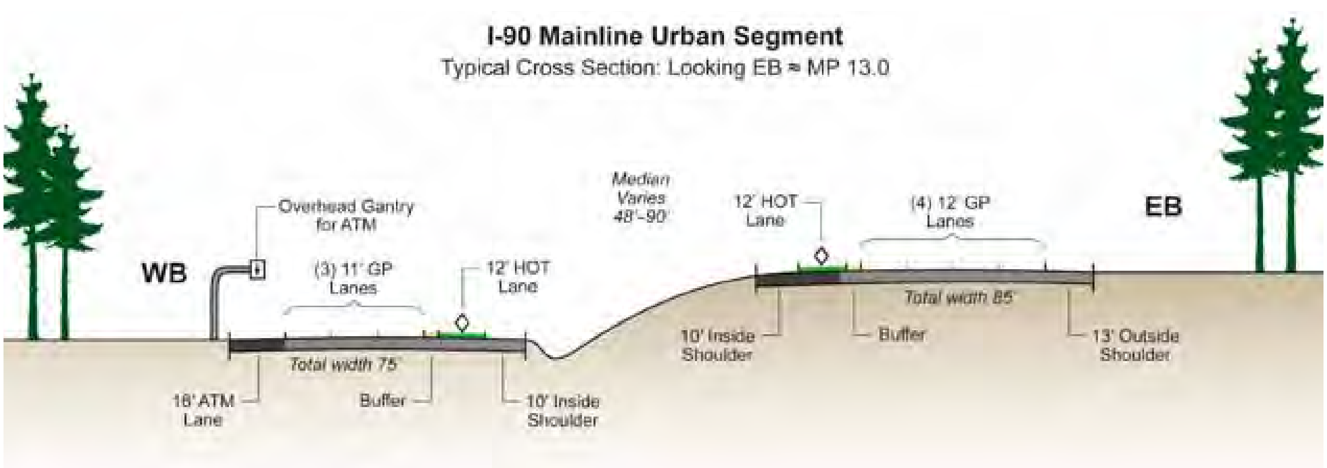

Exhibit G.4: Convert Existing HOV Lane to a HOT Lane, add WB and EB Aux Lanes (Bellevue to Issaquah)

Improvement 3-1: Rebuild Inside Shoulder and Restripe Existing Pavement for Additional Lane

Description
A new westbound auxiliary lane would be created by reallocating the existing 71 feet of pavement and rebuilding the existing 11-foot inside shoulder with a full depth pavement so that it could accommodate traffic. As shown in Exhibit G.5, a typical cross-section of the improvement would consist of:

- 4-foot inside shoulder (deviation required)*
- 12-foot HOV Lane
- 11-foot general purpose (3) (deviation required)*
- 12-foot auxiliary lane
- 10-foot outside shoulder

** Deviations are approved during the scoping or design phase of a project.*

Use of shoulders for traffic will require an approval from FHWA and WSDOT. These deviations require additional analysis and occur during the scoping or design phase of a project.

Recommend Advancing: NO

Reasons for Not Advancing
We are not advancing this improvement for consideration.

Planning Level Cost Estimate: $15 million (2009 $).

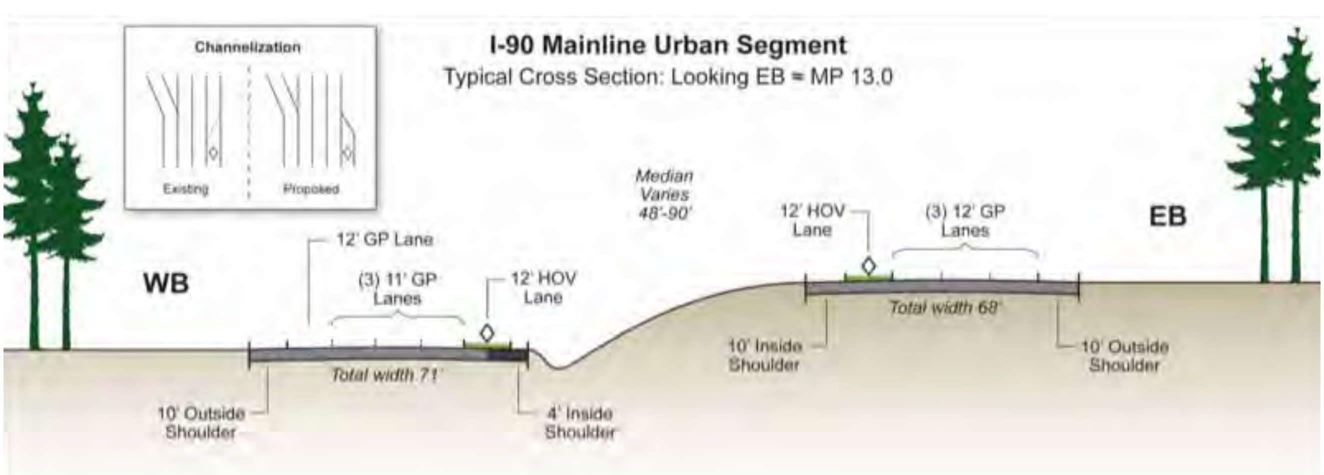

Exhibit G.5: Westbound Auxiliary Lane – Rebuild Inside Shoulder

Improvement 3-3: Westbound Auxiliary Lane Widen Roadway to Full Design Standards

Description
This improvement proposes to add an additional lane to accommodate standard 12-foot-wide lanes and a 10-foot-wide inside shoulder (see a typical cross-section in Exhibit G.6). The existing outside shoulder would not be impacted. The roadway widening would occur to the south and within the median to avoid impacts to West Lake Sammamish Parkway to the north. Using the existing median width for the new auxiliary lane would require some retaining walls and/or slope reconstructions in the median.

Recommend Advancing: NO

Reasons for Not Advancing
This improvement is not being moved forward for the following reasons:

- The conversion of HOV lane to HOT lane has a lower cost
- Impacts to median will limit future use of median for high capacity transit
- Perceived negative impacts to Mountains to Sound Greenway corridor by reducing landscaped center median
- Additional impervious surface would require stormwater retrofitting of entire roadway
- Widening of roadway may also require additional noise mitigation, such as noise walls

Planning Level Cost Estimate: $94 million (2009 $).

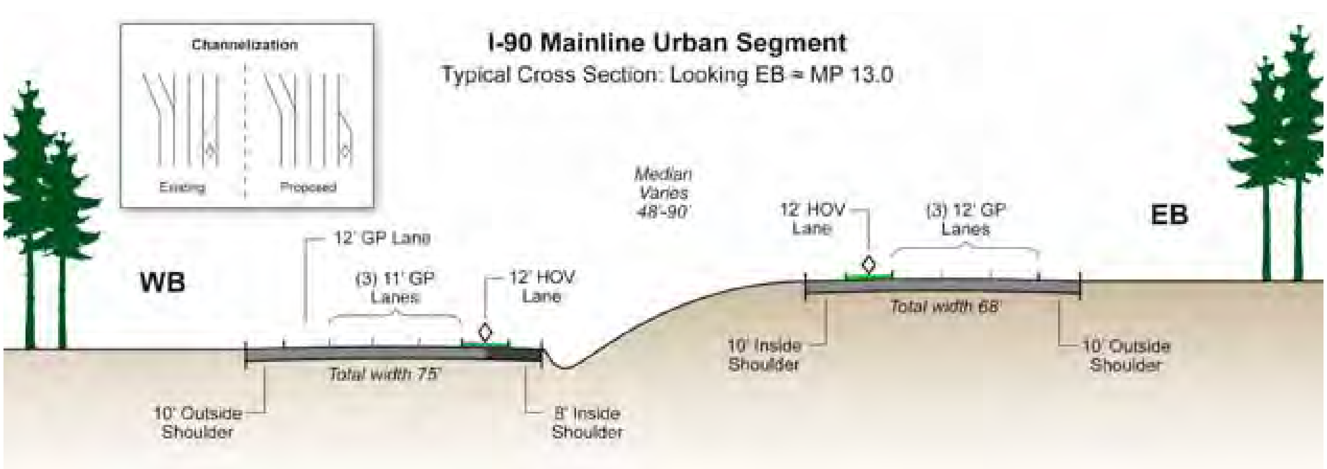

Exhibit G.6: Westbound Auxiliary Lane – Widen Roadway to Full Standards

Improvement 4-1: Eastbound Auxiliary Lane Rebuild Inside Shoulder with Active Traffic Management

A new eastbound auxiliary lane would be provided by reallocating space on the 68 to 71 feet of existing pavement. To add the auxiliary lane, the existing 10-foot inside shoulder would be rebuilt with full-depth pavement so that it can accommodate traffic loads. The three existing general-purpose lanes would be narrowed from 12 feet to 11 feet (see a typical cross-section in Exhibit G.7). The results would include:

- 4-foot inside shoulder (deviation required)*
- 12-foot HOV Lane
- 11-foot general-purpose lanes (3) (deviation required)*
- 12-foot Auxiliary Lane
- 10-foot outside shoulder

** are approved during the scoping or design phase of a project.*

Recommend Advancing: NO

Reasons for Not Advancing
Preliminary scoping efforts indicated that this project could be accomplished without using the existing shoulder.

Planning Level Cost Estimate: $13 million (2009 $).

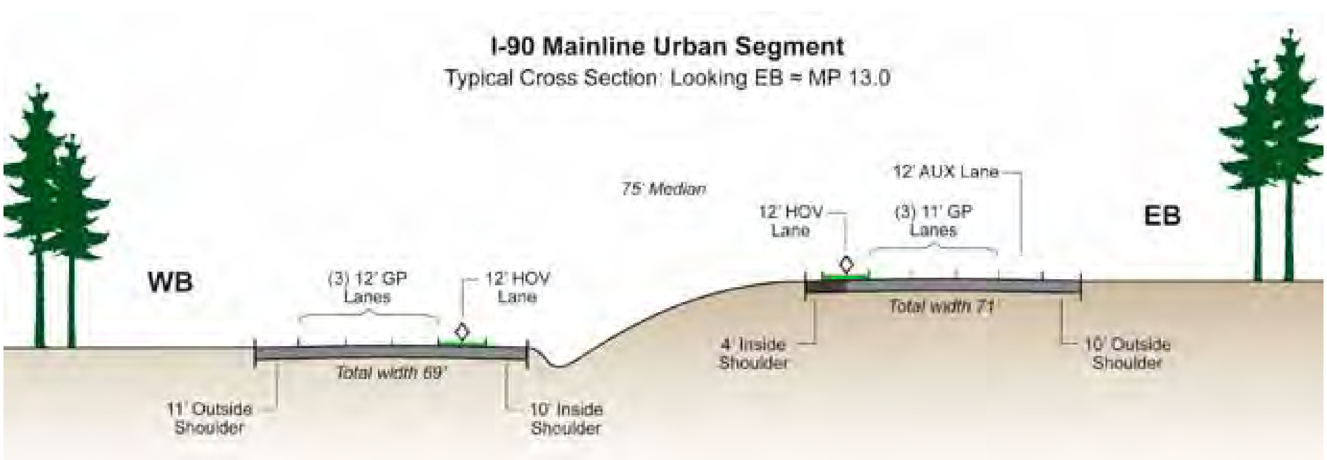

Exhibit G.7: New Eastbound Auxiliary Lane – Rebuild Inside Shoulder with ATM

Improvement 4-2: Eastbound Auxiliary Lane - Full Design Standards

Description
This improvement would add an eastbound auxiliary lane by rebuilding the existing shoulder with full-depth pavement so that it can accommodate traffic loads and adding new pavement to accommodate standard 12-foot-wide lanes and 10-foot-wide shoulders (see a typical cross-section in Exhibit G.8). The widening would occur on the north side of the existing eastbound lanes, within the median, to avoid impacts to the retaining wall supporting SE Newport Way to the south.

These improvements would include:

- 10-foot inside shoulder
- 12-foot HOV lane
- 12-foot general-purpose lanes (4)
- 12-foot outside shoulder

Recommend Advancing: NO

Reasons for Not Advancing
This improvement is not be advanced because preliminary scoping indicated that an eastbound auxiliary lane can be accomplish with a different concept.

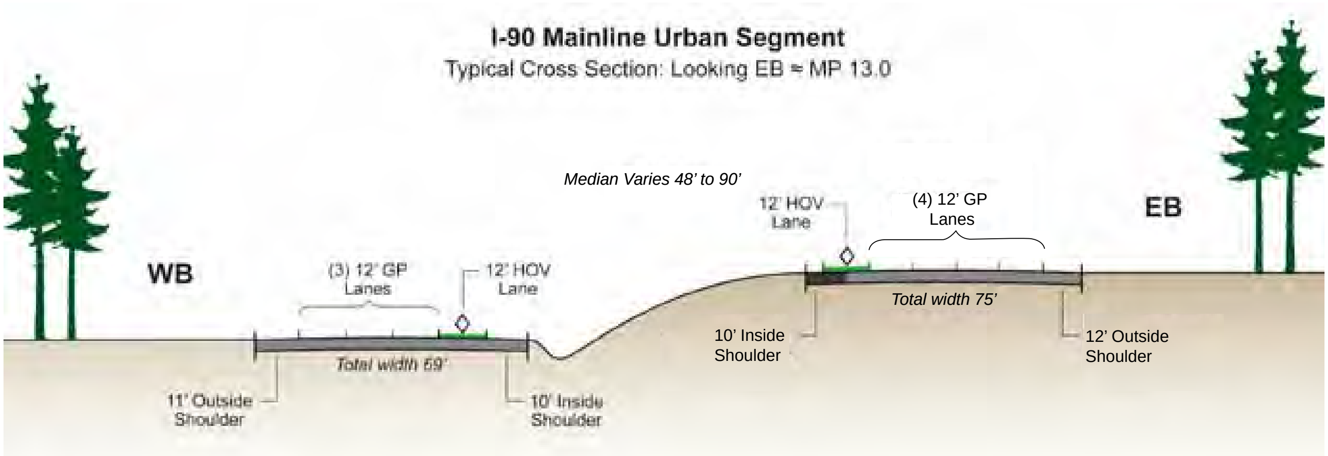

Exhibit G.8: Eastbound Auxiliary Lane – Widen Roadway to Full Standards

Improvement 13-1: SE North Bend Way Standard Off-Ramp

Description
The proposed improvement would involve constructing a new eastbound off-ramp to WSDOT Design Manual standards. By doing this, the off-ramp diverge point moves west approximately 600 feet. The proposed off-ramp configuration is illustrated in Exhibit G.9.

Recommend Advancing: NO

Reasons for Not Advancing
This improvement is not being advanced because of its cost and limited benefits.

This improvement would improve the safety and alignment of this off-ramp at a lower cost than the loop ramp improvement (Improvement 13-2). The eastbound off-ramp terminus at the North Bend Way/Winery Road interchange is expected to operate at LOS F by 2030 in the PM peak hour. The eastbound off-ramp is also sub-standard based on current design standards.

Planning Level Cost Estimate: $20 million (2009 $).

Exhibit G.9: Proposed SE North Bend Way/Winery Road Standard Off-Ramp (North Bend)

Improvement 13-2: SE North Bend Way Loop Ramp

Description

Exit 27 is a half interchange at SE North Bend Way and I-90. The half interchange provides access to and from the west. However, the existing eastbound off-ramp is non-standard. To address this deficiency, the proposed improvement would convert the end of the existing off-ramp to a right-turn-only lane and add a loop ramp to accommodate traffic from eastbound I-90 to northbound SE North Bend Way. An eastbound loop off-ramp was considered at this location, while maintaining the existing eastbound off-ramp for right-turning vehicles only to Winery Road. With this configuration, the ramp terminus improves from LOS F to LOS A, while also improving safety for existing left-turning vehicles that no longer need to turn left. The proposed off-ramp configuration is illustrated in Exhibit G.10.

Recommend Advancing: NO

Reasons for Not Advancing

This improvement was not advanced due to the relatively high cost for this improvement and limited benefits.

Planning Level Cost Estimate: $63 million (2009 $).

Exhibit G.10: Proposed SE North Bend Way Loop Ramp (North Bend)

North Bend Winery Road Interchange Improvements

The Winery Road Interchange at Exit 27 is one of two exits that serves the Snoqualmie Tribe's Casino. This exit is a half interchange that provides access to and from the west. However, the existing eastbound off-ramp is non-standard (the Snoqualmie Tribe has identified an interchange modification for Exit 27 in their 2008 Draft Transportation Plan).

Recommend Advancing: NO

Reasons for Not Advancing

The two improvements reviewed for the North Bend Winery Road interchange were not advanced due to cost and limited benefit. Improvement 13-1, which was a standard off-ramp, and Improvement 13-2, which included a Loop Ramp, follow with the 2030 operations comparisons for this interchange.

Future Conditions at I-90/SE North Bend Way/Winery Road Interchange if no improvements are made

Exhibit G.11 tabulates the LOS and delay results with no action for the I-90/SR 900 Interchange during both peak periods in 2030.

Exhibit G.11: 2030 Intersection Operations Summary (No Action)

Intersection	Control	AM Peak		PM Peak	
		LOS	Delay (in seconds)	LOS	Delay (in seconds)
Improvement 13: I-90/SE North Bend Way/Winery Road Interchange					
Winery Road/I-90 EB Off-Ramp (Loop Ramp)	OWSC	B	11	***F***	***>100***
Winery Road/I-90 WB On-Ramp/ SE North Bend Way	Yield	A	10	A	9

Notes:
OWSC – One-way stop controlled intersection

Comparison of 2030 Operations at I-90/SE North Bend Way/Winery Road Interchange with No Action and Action

Exhibits G.12 and G.13 show the future traffic conditions with and without improvements in terms of Level-of-Service and delay for the AM and PM peak hours. The Loop Ramp improvement would be grade separated so delay would be decreased and LOS would be improved.

Exhibit G.12: 2030 AM Peak Hour Intersection Operations Summary, Action and No Action

Intersection	No Action			Action		
	Control	LOS	Delay (in seconds)	Control	LOS	Delay (in seconds)
Improvement 13: I-90/SE North Bend Way/Winery Road Interchange						
Winery Road/I-90 EB Off-Ramp (Loop Ramp)	OWSC	B	11	OWSC	A	9

Notes:
OWSC – One-way stop controlled intersection

Exhibit G.13: 2030 PM Peak Hour Intersection Operations Summary, Action and No Action

Intersection	No Action			Action		
	Control	LOS	Delay (in seconds)	Control	LOS	Delay (in seconds)
Improvement 13: I-90/SE North Bend Way/Winery Road Interchange						
Winery Road/I-90 EB Off-Ramp (Loop Ramp)	OWSC	***F***	***>100***	OWSC	A	8

Notes:
OWSC – One-way stop controlled intersection

Appendix H:
Speed Profiles

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Speed Profiles

Speed profiles provided below were produced to help show the impact of the options on traffic.

Westbound I-90 No Action, AM Peak Period

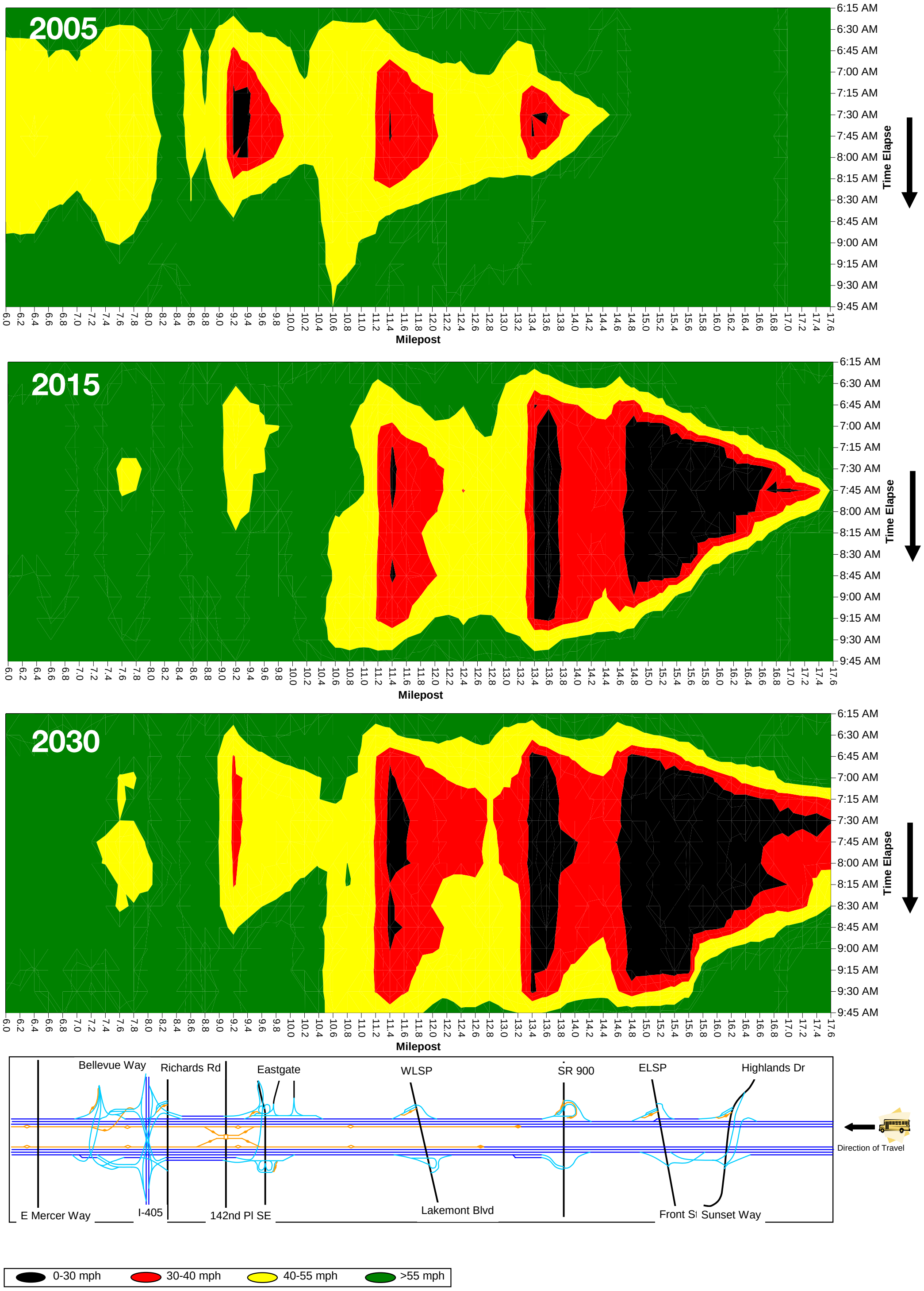


Exhibit H.1: Westbound I-90 No Action, AM Peak Period

How to read Speed Profiles:

Locations are listed beneath the graphic and time of day is listed to the right of the graphic. The colors reflect travel speeds. Areas in green are vehicles traveling at higher than 55 mph; yellow areas at 40 to 55 mph; red areas at 30 to 40 mph, and black areas are vehicles traveling at 30 mph or less.

Eastbound I-90 No Action, PM Peak Period

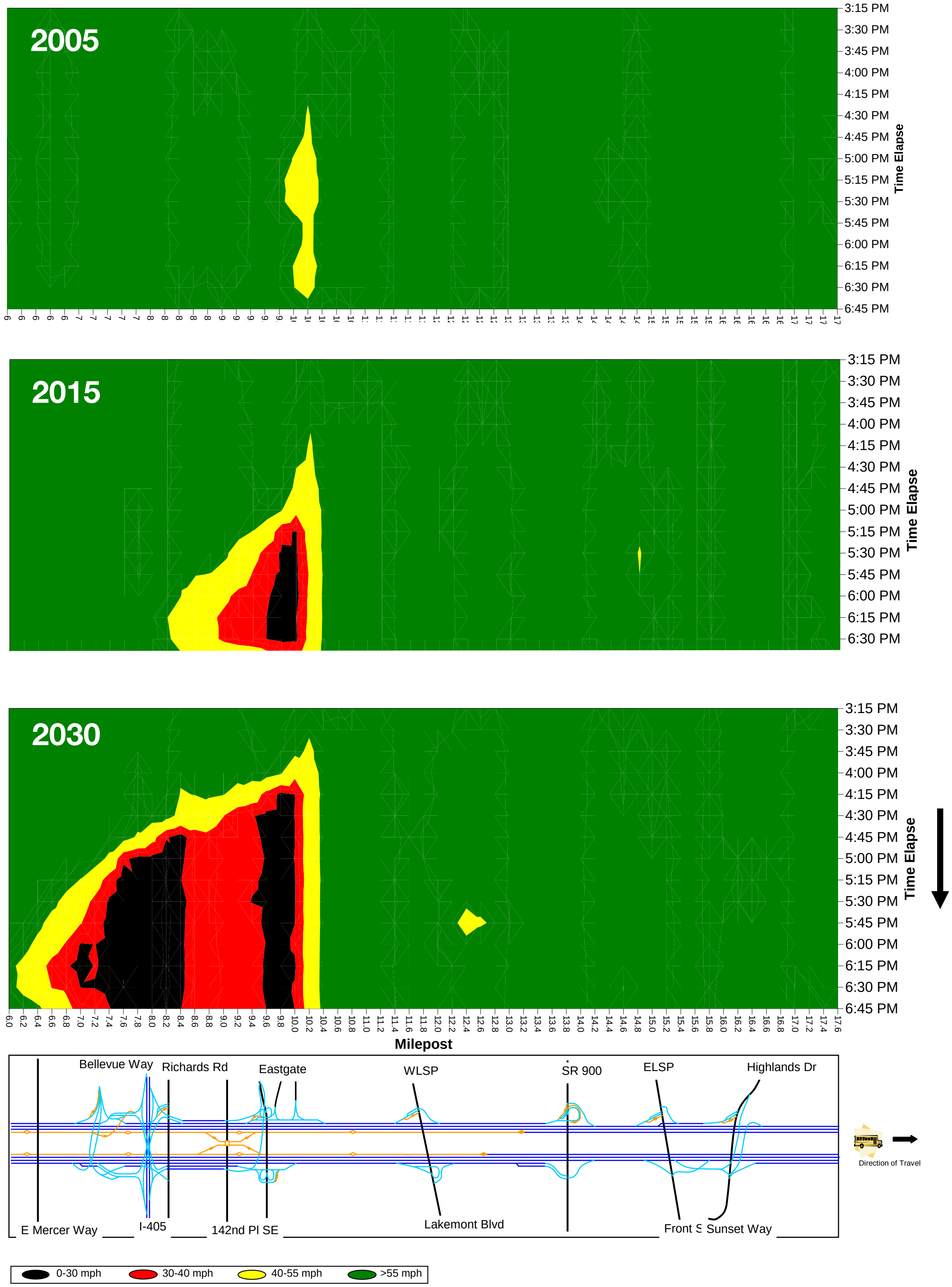
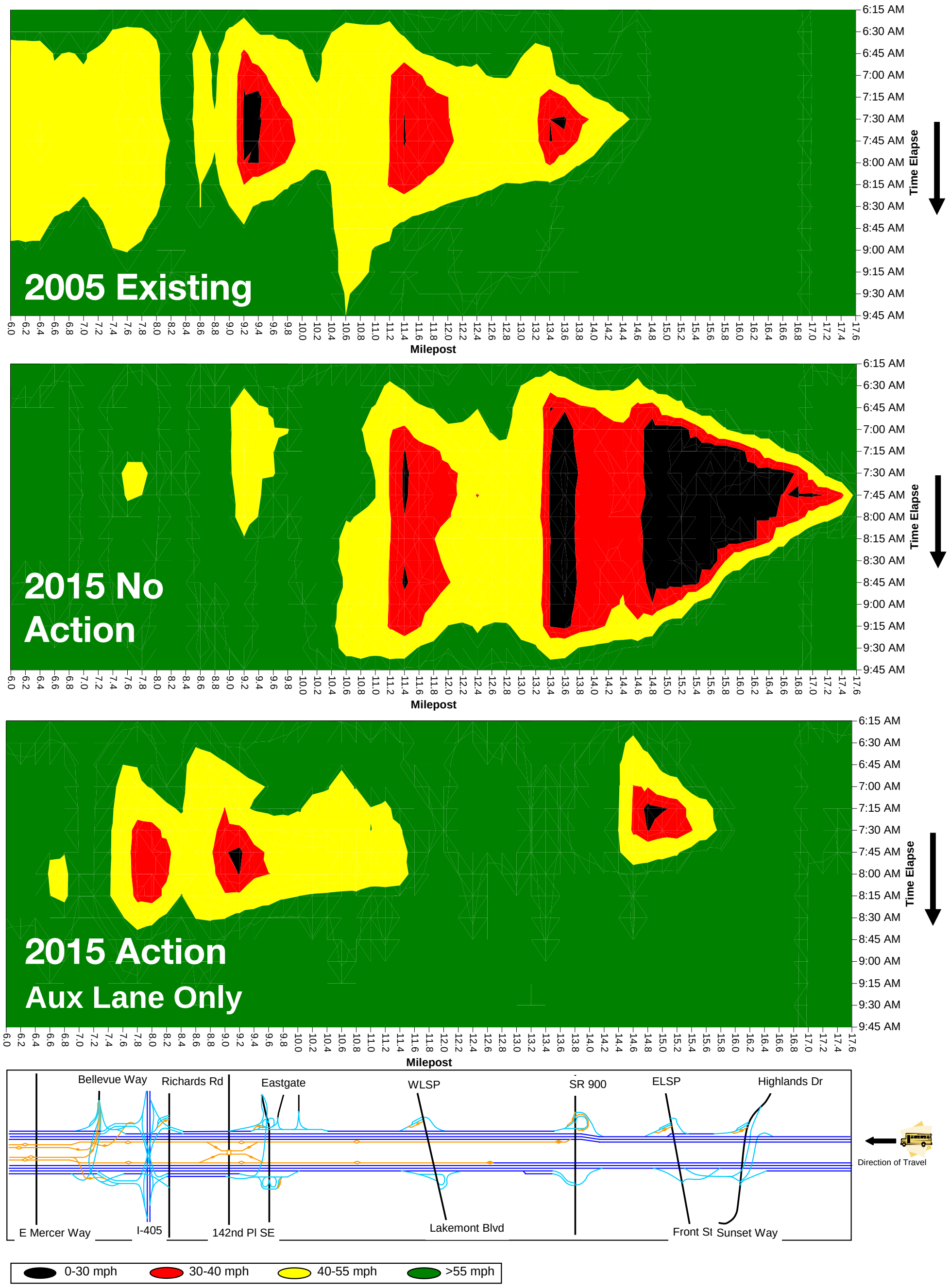


Exhibit H.2: Eastbound I-90 No Action, PM Peak Period

The speed profiles provided below in Exhibit H.3 reflect westbound traffic conditions for 2005 and 2015 without improvements and traffic conditions in 2015 with the improvements. Travel times and vehicle throughput are reflected in the 2005 and 2015 speed profiles.

Westbound AM Peak 2005 & 2015 6:15 to 9:45 AM



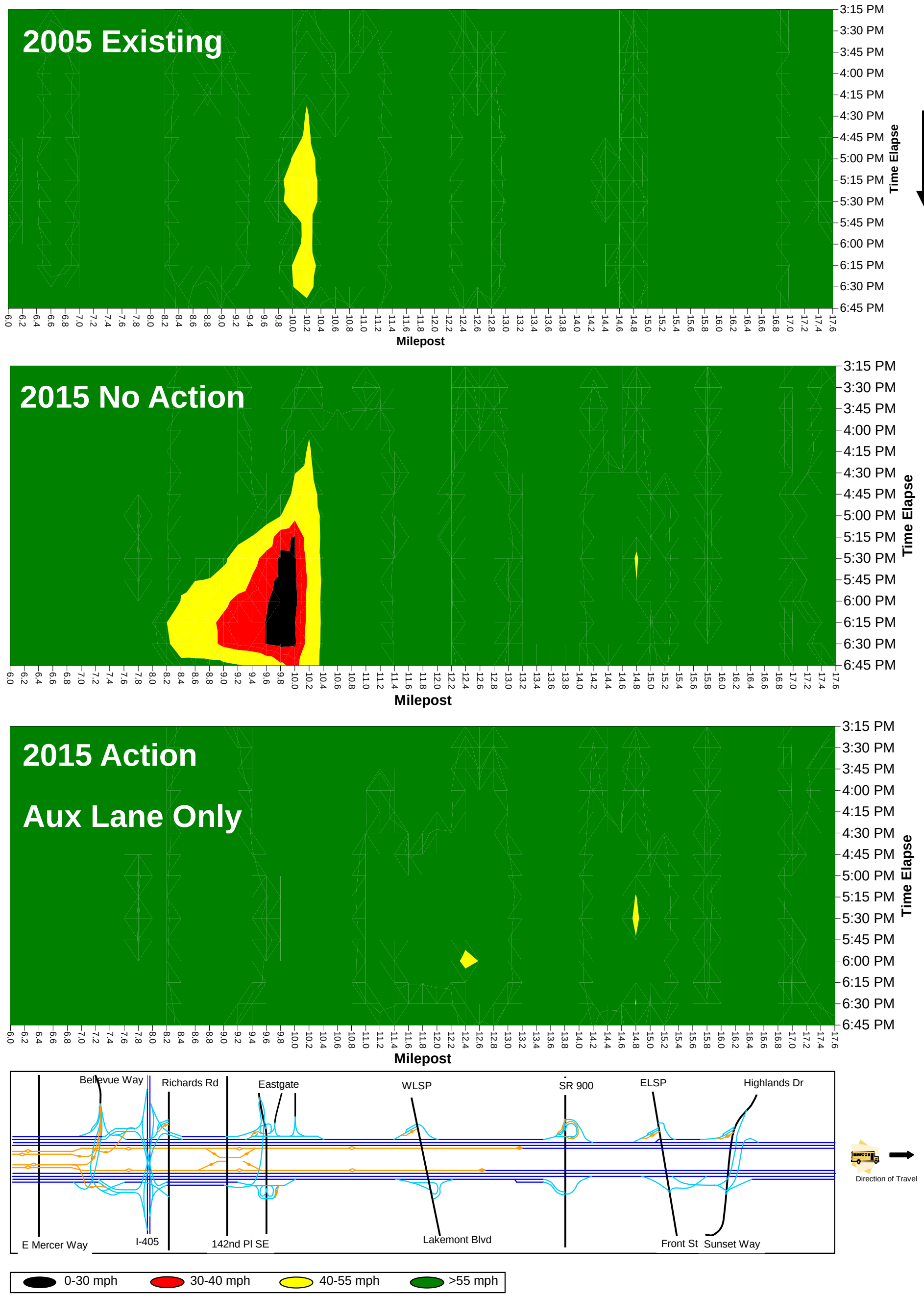
Maxmum Travel Time: ~17 min
Average Travel Time: ~12 min
Throughput: ~17,500 veh/3 hour

Maxmum Travel Time: ~22 min
Average Travel Time: ~16 min
Throughput: ~19,100 veh/3 hour

Maxmum Travel Time: ~14 min
Average Travel Time: ~11 min
Throughput: ~19,200 veh/3 hour

Exhibit H.3: Westbound AM Peak 2005 & 2015

Eastbound PM Peak 2005 & 2015 3:15 to 6:45 PM



2005 Existing

Maxmum Travel Time: ~10 min
Average Travel Time: ~10 min
Throughput: ~19,000 veh/3 hour

2015 No Action

Maxmum Travel Time: ~13 min
Average Travel Time: ~10.5 min
Throughput: ~18,000 veh/3 hour

2015 Action – Aux Lane Only

Maxmum Travel Time: ~10 min
Average Travel Time: ~9.5 min
Throughput: ~18,000 veh/3 hour

Exhibit H.4: Eastbound PM Peak 2005 & 2015

Appendix I:
GHG Emissions

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How the Recommended Projects Address Climate Change

Washington State's transportation system contributes close to half of the state's greenhouse gas (GHG) emissions. WSDOT recognizes that transportation is directly connected to the climate change in two ways:

1. Transportation infrastructure is affected by climate change and,
2. Transportation contributes to climate change by producing greenhouse gases (GHG).

The transportation system needs to be able to adapt to changing climate as well as reduce its contribution to increased greenhouse gas emissions. However, addressing climate change effectively is challenging; GHG emissions from a single project are usually very small and difficult to measure. Therefore, WSDOT believes that transportation GHG emissions are better addressed at a broader region, state or national level where multiple projects can be analyzed in aggregate. At the project level, there are four types of GHG emissions that can be considered: operational, construction, embodied and lifecycle emissions.

GHG Emissions

Operational GHG emissions are released by vehicles using project roadways. The quantity of emissions released depends on the fuel type, vehicle fuel efficiency, speed of the vehicle, distance traveled, and the number of vehicles on a roadway. In general, operational emissions are the largest category of GHG emissions released by the transportation sector: Approximately 72 percent of the transportation sector's emissions are generated from on-road transport, including both passenger and freight travel.

Constructions emissions are released during project construction and primarily come from fuel burned in the equipment used to build a project, such as bulldozers, pavers, and rollers. Construction emissions can also result from increased traffic congestion caused by construction activities.

Embodied emissions are the emissions generated in producing the materials that are used in the construction process and include emissions from sourcing the raw materials from the earth and their conversion into a usable form, including the energy used in processing. 3 Embodied emissions can be thought of as "cradle to site" emissions. For example, the emissions released while mining the coal used to manufacture the steel girders for a bridge would be considered embodied emissions.

Lifecycle emissions include emissions released during material production (embodied) and emissions released throughout a facility's lifetime, including demolition and disposal. Unlike embodied emissions, lifecycle emissions account for the durability of a product. Lifecycle emissions are often referred to as "cradle to grave" emissions.

Exhibit I.1: GHG Emissions

Moving Washington	Project Number	Recommended Project	Operational GHG emissions	Construction Emissions change	Embodied Emissions	Lifecycle emission
	Existing Safety Projects					
Keep Safe	A	Eastgate Interchange Area (signage & guardrail)	No change	Small increase	Small increase	Small increase
	C	I-90 ramps/West Lake Sammamish (new roundabout)	Small increase	Small increase	Small increase	Small increase
	D	Preston-Fall City Interchange (guardrail)	No change	Small increase	Small increase	Small increase
	Existing Preservation Projects					
Maintain	B	Bridge Seismic Retrofit (Bellevue to Issaquah)	No change	Small increase	Small increase	Small increase
	E	I-90/WB SR 18 Bridge Deck Rehab	No change	Small increase	Small increase	Small increase

Exhibit I.1: GHG Emissions (continued)

Moving Washington	Project Number	Recommended Project	Operational GHG emissions	Construction Emissions change	Embodied Emissions	Lifecycle emission
	Improvements					
Operate Efficiently and Manage Demand	1	**Convert the existing westbound and eastbound High Occupancy Vehicle (HOV) Lanes into High Occupancy Toll (HOT) Lanes**	Small increase	Small increase	Small increase	Small increase
Operate Efficiently	2	**Active Traffic Management (ATM)** Variable Speed Zone and Lane Control Eastgate to Sunset	Small decrease*	Small increase	Small increase	Small increase
	5	**Eastgate Interchange Rechannelization (Bellevue)**	Small increase	Small increase	Small increase	Small increase
	7	**Lakemont Off-Ramp Modification**[4] Off ramp on the existing eastbound off-ramp	Small decrease	Small increase	Small increase	Small increase
	9	**Front Street Interchange Reconstruction**[2]	Small increase	Small increase	Small increase	Small increase
	10	**Preston-Fall City Ramp Traffic Control**[3] Signal or Roundabout	Small decrease	Small increase	Small increase	Small increase
	11	**Active Traffic Management** Variable Speed Zone and Lane Control I-90/ SR 18 Interchange	Small decrease	Small increase	Small increase	Small increase
	12	**436th Avenue SE Traffic Control**[3,4] Signals or Roundabouts	Small decrease	Small increase	Small increase	Small increase

* Where a small decrease in operational emissions is indicated in the table, this qualitative evaluation is based on the assumption that fewer vehicles will be idling after construction of the proposed improvement. Fewer idling vehicles equals a decrease in operational GHG emissions.

Exhibit I.1: GHG Emissions (continued)

Moving Washington	Project Number	Recommended Project	Operational GHG emissions	Construction Emissions change	Embodied Emissions	Lifecycle emission
Add Capacity Strategically	3	**I-90/WB W Lake Sammamish Parkway to E Sunset Way** Peak Use Shoulder Lane	Small increase	Small increase	Small increase	Small increase
	4	**I-90/EB Eastgate to W Lake Sammamish Parkway** Peak Use Shoulder Lane	Small increase	Small increase	Small increase	Small increase
	6	**West Lake Sammamish Parkway Round-about[4]** Widen existing	Small decrease*	Small increase	Small increase	Small increase
	8	**8a. 11th/12th Avenue NW Overcrossing w/o Direct Access Ramp[2]** **8b. 11th/12th Avenue NW Overcrossing with Direct Access Ramps[2]**	Small increase	Small increase	Small increase	Small increase

* Where a small decrease in operational emissions is indicated in the table, this qualitative evaluation is based on the assumption that fewer vehicles will be idling after construction of the proposed improvement. Fewer idling vehicles equals a decrease in operational GHG emissions.