

520 Tolling Implementation Committee
Evaluation Results for All Scenarios

November 10, 2008

520-Only Scenarios: 2010		Scenario 1: Toll 520 in 2016, when project is complete		Scenario 2: Toll 520 in 2010, when construction begins		Scenario 5: Flat rate toll on 520 (in 2016)		Scenario 6: Maximize funding by tolling only 520 (starting 2010)		Scenario 7: Toll 520 in 2010; increase rate in 2016		
Estimated Bridge Funding		\$835 M		\$853 M		\$654 M		\$1,519 M		\$1,189M		
Toll Rates (Shown in 2007 dollars)*												
Morning (5 – 9 AM)				\$2.15		\$1.70		\$3.05		\$2.60		
Mid-day (9 AM – 3 PM)				\$1.05				\$2.65		\$2.10		
Afternoon (3 – 7 PM)				\$2.95				\$3.80		\$3.25		
Evenings (7 – 10 PM)				\$1.30				\$2.10		\$2.60		
Nights (10 PM – 5 AM)												
Weekends				\$0.75 to \$1.50				\$0.80 - \$1.60		\$0.80 - \$1.60		
Segment												
Average Toll Paid				\$1.70		\$1.70		\$2.36		\$2.16		
Route	Baseline		Scenario 1		Scenario 2		Scenario 5		Scenario 6		Scenario 7	
	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak
2010 Vehicle Volume (Does not include transit riders)												
520 Midspan	44,640	73,590			37,990	60,350	40,240	53,650	35,590	54,910	37,170	54,430
I-90 Midspan	63,540	86,730			65,230	90,350	65,340	92,670	66,370	94,520	65,280	92,880
SR 522 at 61st	20,210	29,790			20,560	29,870	20,290	30,500	21,000	31,370	20,560	30,360
I-405 at SR 167	55,990	101,770			57,150	104,850	56,740	104,630	57,020	106,030	56,730	104,730
Total Change	184,380	291,880			180,930	285,420	182,610	281,450	179,980	286,830	179,740	282,400
2010 Vehicle Volume Changes (Compared with the 2010 Baseline volumes - excludes transit riders)												
520 Midspan					-6,650	-13,240	-4,400	-19,940	-9,050	-18,680	-7,470	-19,160
I-90 Midspan					1,690	3,620	1,800	5,940	2,830	7,790	1,740	6,150
SR 522 at 61st					350	80	80	710	790	1,580	350	570
I-405 at SR 167					1,160	3,080	750	2,860	1,030	4,260	740	2,960
Total Change					-3,450	-6,460	-1,770	-10,430	-4,400	-5,050	-4,640	-9,480
Percent Change in Vehicle Volume (Compared with the 2010 Baseline Condition - excludes transit riders)												
520 Midspan					-15%	-18%	-10%	-27%	-20%	-25%	-17%	-26%
I-90 Midspan					3%	4%	3%	7%	4%	9%	3%	7%
SR 522 at 61st					2%	0%	0%	2%	4%	5%	2%	2%
I-405 at SR 167					2%	3%	1%	3%	2%	4%	1%	3%
Total Change					-2%	-2%	-1%	-4%	-2%	-2%	-3%	-3%
2010 Person Volumes (Includes transit riders)												
520 Midspan	56,300	90,850			50,400	75,500	52,620	67,950	48,140	69,160	49,750	68,600
I-90 Midspan	84,990	109,950			87,310	114,910	87,210	117,710	88,290	119,790	87,260	118,260
SR 522 at 61st	24,950	37,130			25,490	37,340	25,200	37,980	25,790	38,860	25,460	37,850
I-405 at SR 167	76,170	136,930			78,190	141,100	77,680	141,120	77,490	141,470	77,490	141,230
Total Change	242,410	374,860			341,390	368,850	242,710	364,760	239,710	369,280	239,960	365,940
2010 Person Volume Changes (Compared with the 2010 Baseline Person volumes - includes transit riders)												
520 Midspan					-5,900	-15,350	-3,680	-22,900	-8,160	-21,690	-6,550	-22,250
I-90 Midspan					2,320	4,960	2,220	7,760	3,300	9,840	2,270	8,310
SR 522 at 61st					540	210	250	850	840	1,730	510	720
I-405 at SR 167					2,020	4,170	1,510	4,190	1,320	4,540	1,320	4,300
Total Change					-1,020	-6,010	300	-10,100	-2,700	-5,580	-2,450	-8,920
Percentage Change in Person Volume (Compared with the 2010 Baseline Condition - includes transit riders)												
520 Midspan					-10%	-17%	-7%	-25%	-14%	-24%	-12%	-24%
I-90 Midspan					3%	5%	3%	7%	4%	9%	3%	8%
SR 522 at 61st					2%	1%	1%	2%	3%	5%	2%	2%
I-405 at SR 167					3%	3%	2%	3%	2%	3%	2%	3%
Total Change					0%	-2%	0%	-3%	-1%	-1%	-1%	-2%
Type of Diversion	Scenario 1		Scenario 2		Scenario 5		Scenario 6		Scenario 7			
	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak		
Person Changes by Type of Change (Compared with the 2010 Baseline Condition for each Route)												
Shift to Transit					1,470	480	1,110	510	1,850	680	1,630	650
Shift to I-90					2,320	4,960	2,220	7,760	3,300	9,840	2,270	8,310
Shift to SR 522					540	210	250	850	840	1,730	510	720
Shift to I-405					2,020	4,170	1,510	4,190	1,320	4,540	1,320	4,300
Changes Destination					-1,020	-6,010	-300	-10,100	-2,700	-5,580	-2,450	-8,920
Total					-7,370	-15,830	-4,790	-23,410	-10,010	-22,370	-8,180	-22,900
Shift Time of Day					4,460		12,980		6,520		8,940	
Percentage of Total Person Changes by Type of Change												
Shift to Transit					20%	3%	21%	2%	18%	3%	20%	3%
Shift to I-90					31%	31%	41%	33%	33%	44%	28%	36%
Shift to SR 522					7%	1%	5%	4%	8%	8%	6%	3%
Shift to I-405					27%	26%	28%	18%	13%	20%	16%	19%
Changes Destination					14%	38%	6%	43%	27%	25%	30%	39%
Total					100%	100%	100%	100%	100%	100%	100%	100%
Percentage of Person Changes by Type of Change (Compared with the 2010 Baseline Persons on SR 520)												
Shift to Transit					3%	1%	2%	1%	3%	1%	3%	1%
Shift to I-90					4%	5%	4%	9%	6%	11%	4%	9%
Shift to SR 522					1%	0%	0%	1%	1%	2%	1%	1%
Shift to I-405					4%	5%	3%	5%	2%	5%	2%	5%
Changes Destination					2%	7%	1%	11%	5%	6%	4%	10%
Total					13%	17%	10%	26%	18%	25%	15%	25%
Shift Time of Day					4%		11%		6%		8%	
Speeds	Baseline		Scenario 1		Scenario 2		Scenario 5		Scenario 6		Scenario 7	
	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak
Average Peak Direction Corridor Travel Speeds from I-5 to I-405 (Except I-405 which is from I-90 to I-5 in Tukwila)												
520 GP Lanes	22	35			35	48	29	51	38	54	36	54
I-90 GP lanes	32	52			31	50	31	49	29	47	31	48
SR 522 GP Lanes	17	31			16	29	16	29	16	28	16	29
I-405 GP Lanes	23	32			23	31	23	32	22	31	23	32
Change in Average Peak Direction Corridor Travel Speeds from I-5 to I-405 (except I-405 which is from I-90 to I-5 in Tukwila)												
520 GP Lanes					14	13	7	17	16	19	15	19
I-90 GP lanes					-1	-2	-1	-3	-2	-5	-1	-4
SR 522 GP Lanes					-1	-2	-1	-2	-1	-3	-1	-2
I-405 GP Lanes					0	0	0	0	0	-1	0	1

* These are example toll rates for planning purposes. Actual toll rates will depend on a final finance plan and determined by the State Transportation Commission with approval by the State Legislature.

520 Tolling Implementation Committee
Evaluation Results for All Scenarios

November 10, 2008

520-Only Scenarios: 2016		Scenario 1: Toll 520 in 2016, when project is complete		Scenario 2: Toll 520 in 2010, when construction begins		Scenario 5: Flat rate toll on 520 (in 2016)		Scenario 6: Maximize funding by tolling only 520 (starting 2010)		Scenario 7: Toll 520 in 2010; increase rate in 2016		
Estimated Bridge Funding		\$835 M		\$853 M		\$654 M		\$1,519 M		\$1,189 M		
"Reasonableness" of Toll Rates* (Toll Rates are shown in 2007 dollars)												
Morning (5 – 9 AM)		\$3.05		\$2.15		\$1.70		\$4.25		\$3.05		
Mid-day (9 AM – 3 PM)		\$2.10		\$1.05				\$2.75		\$2.10		
Afternoon (3 – 7 PM)		\$3.80		\$2.95				\$5.35		\$3.80		
Evenings (7 – 10 PM)		\$1.95		\$1.30				\$2.10		\$1.50		
Nights (10 PM – 5 AM)		\$0.90		N/A				\$0.95		\$0.75		
Weekends		\$0.85 to \$1.60		\$0.80 to \$1.60				\$0.80 - \$1.60		\$0.80 - \$1.60		
Segment		\$0.40 to \$0.80										
Average Toll Paid		\$2.28		\$1.64		\$1.70		\$2.92		\$2.28		
Estimated Daily Travel Changes												
Route	Baseline		Scenario 1		Scenario 2		Scenario 5		Scenario 6		Scenario 7	
	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak
2016 Vehicle Volume (Does not include transit riders)												
520 Midspan	51,430	82,380	41,660	62,560	43,840	68,030	46,530	60,830	34,320	54,860	41,060	61,680
I-90 Midspan	62,877	87,633	64,519	91,881	65,353	90,178	64,661	92,882	67,980	95,480	64,580	91,750
SR 522 at 61st	20,370	30,360	21,820	32,170	20,810	31,490	20,670	32,250	21,730	33,630	21,000	32,050
I-405 at SR 167	67,970	118,540	70,140	122,970	69,210	122,920	69,240	123,390	68,970	120,490	69,040	124,020
Total Change	202,647	318,913	198,139	309,581	199,213	312,618	201,101	309,352	193,000	304,460	195,680	309,500
2016 Vehicle Volume Changes (Compared with the 2016 Baseline volumes - excludes transit riders)												
520 Midspan			-9,770	-19,820	-7,590	-14,350	-4,900	-21,550	-17,110	-27,520	-10,370	-20,700
I-90 Midspan			1,642	4,248	2,476	2,545	1,783	5,249	5,103	7,847	1,702	4,117
SR 522 at 61st			1,450	1,810	440	1,130	300	1,890	1,360	3,270	630	1,690
I-405 at SR 167			2,170	4,430	1,240	4,380	1,270	4,850	1,000	1,950	1,070	5,480
Total Change			-4,508	-9,332	-3,434	-6,295	-1,547	-9,561	-9,647	-14,453	-6,968	-9,413
Percent Change in Vehicle Volume (Compared with the 2016 Baseline Condition - excludes transit riders)												
520 Midspan			-19%	-24%	-15%	-17%	-10%	-26%	-33%	-33%	-20%	-25%
I-90 Midspan			3%	5%	4%	3%	3%	6%	8%	9%	3%	5%
SR 522 at 61st			7%	6%	2%	4%	1%	6%	7%	11%	3%	6%
I-405 at SR 167			3%	4%	2%	4%	2%	4%	1%	2%	2%	5%
Total Change			-2%	-3%	-2%	-2%	-1%	-3%	-5%	-5%	-3%	-3%
2016 Person Volumes (Includes transit riders)												
520 Midspan	68,870	102,270	59,150	80,280	61,110	86,040	63,780	78,380	47,170	68,140	58,310	79,110
I-90 Midspan	90,179	115,608	92,020	120,220	93,370	118,480	92,610	121,340	98,456	126,999	92,220	120,020
SR 522 at 61st	24,700	36,740	26,270	39,190	25,580	38,690	25,440	39,430	26,770	41,460	25,750	39,170
I-405 at SR 167	92,620	158,960	95,310	164,190	94,360	164,570	94,600	164,850	94,110	161,360	94,060	165,300
Total Change	276,369	413,578	272,750	403,880	274,420	407,780	276,430	404,000	266,506	397,959	270,340	403,600
2016 Person Volume Changes (Compared with the 2016 Baseline Person volumes - includes transit riders)												
520 Midspan			-9,720	-21,990	-7,760	-16,230	-5,090	-23,890	-21,700	-34,130	-10,560	-23,160
I-90 Midspan			1,841	4,612	3,191	2,872	2,431	5,732	8,277	11,391	2,041	4,412
SR 522 at 61st			1,570	2,450	880	1,950	740	2,690	2,070	4,720	1,050	2,430
I-405 at SR 167			2,690	5,230	1,740	5,610	1,980	5,890	1,490	2,400	1,440	6,340
Total Change			-3,619	-9,698	-1,949	-5,798	61	-9,578	-9,863	-15,619	-6,029	-9,978
Percentage Change in Person Volume (Compared with the 2016 Baseline Condition - includes transit riders)												
520 Midspan			-14%	-22%	-11%	-16%	-7%	-23%	-32%	-33%	-15%	-23%
I-90 Midspan			2%	4%	4%	2%	3%	5%	9%	10%	2%	4%
SR 522 at 61st			6%	7%	4%	5%	3%	7%	8%	13%	4%	7%
I-405 at SR 167			3%	3%	2%	4%	2%	4%	2%	2%	2%	4%
Total Change			-1%	-2%	-1%	-1%	0%	-2%	-4%	-4%	-2%	-2%
Person Changes by Type of Change (Compared with the 2016 Baseline Condition for each Route)												
Shift to Transit			630	400	560	290	430	320	520	400	540	370
Shift to I-90			1,841	4,612	3,191	2,872	2,431	5,732	8,277	11,391	2,041	4,412
Shift to SR 522			1,570	2,450	880	1,950	740	2,690	2,070	4,720	1,050	2,430
Shift to I-405			2,690	5,230	1,740	5,610	1,980	5,890	1,490	2,400	1,440	6,340
Change Destination			-3,619	-9,698	-1,949	-5,798	61	-9,578	-9,863	-15,619	-6,029	-9,978
Total			-10,350	-22,390	-8,320	-16,520	-5,520	-24,210	-22,220	-34,530	-11,100	-23,530
Shift Time of Day			7,060		4,180		13,140		4,930		6,970	
Percentage of Total Person Changes by Type of Change												
Shift to Transit			6%	2%	7%	2%	8%	1%	2%	1%	5%	2%
Shift to I-90			18%	21%	38%	17%	44%	24%	37%	33%	18%	19%
Shift to SR 522			15%	11%	11%	12%	13%	11%	9%	14%	9%	10%
Shift to I-405			26%	23%	21%	34%	35%	24%	7%	7%	13%	27%
Change Destination			35%	43%	23%	35%	0%	40%	44%	45%	54%	42%
Total			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Percentage of Person Changes by Type of Change (Compared with the 2016 Baseline Persons on SR 520)												
Shift to Transit			1%	0%	1%	0%	1%	0%	1%	0%	1%	0%
Shift to I-90			3%	5%	5%	3%	4%	6%	12%	11%	3%	4%
Shift to SR 522			2%	2%	1%	2%	1%	3%	3%	5%	2%	2%
Shift to I-405			4%	5%	3%	5%	3%	6%	2%	2%	2%	6%
Change Destination			5%	9%	3%	6%	0%	9%	14%	15%	9%	10%
Total			15%	22%	12%	16%	8%	24%	32%	34%	16%	23%
Shift Time of Day			5%		3%		9%		4%		5%	
Speeds												
Speeds	Baseline		Scenario 1		Scenario 2		Scenario 5		Scenario 6		Scenario 7	
	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak	Peak	Off Peak
Average Peak Direction Corridor Travel Speeds from I-5 to I-405 (except I-405 which is from I-90 to I-5 in Tukwila)												
520 GP Lanes	21	37	33	57	33	51	28	54	47	59	36	56
I-90 GP lanes	26	53	26	49	26	51	26	50	25	47	26	49
SR 522 GP Lanes	15	30	14	27	14	28	14	28	14	27	14	27
I-405 GP Lanes	25	36	24	36	25	36	25	36	25	36	25	36
Change in Average Peak Direction Corridor Travel Speeds from I-5 to I-405 (except I-405 which is from I-90 to I-5 in Tukwila)												
520 GP Lanes			13	20	12	14	7	16	26	21	16	19
I-90 GP lanes			0	-4	0	-1	0	-2	-1	-6	0	-3
SR 522 GP Lanes			-1	-3	-1	-2	-1	-2	-1	-3	-1	-2
I-405 GP Lanes			-1	0	0	0	0	0	0	0	0	-1

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