APPENDIX B

TRAVEL FORECASTING

Appendix B: Travel Forecasting Summary

Summary

The Visioning Study land use database was input into the Regional Travel Demand Model for analysis. The Visioning Study land use was initially modeled using the 2030 Metropolitan Transportation Plan transportation network. After the initial set of corridors was developed, the model was run again with new corridors, and a separate set of runs was made with new crossings of the Columbia River. Individual corridors and river crossings were tested with each run in order to analyze and evaluate the impacts of new corridors and river crossings on travel demand.

A multi-step process was used to summarize travel demand. The first step was to summarize trip distribution using a set of approximately 23 districts. Maps were then produced which showed, in band-width form (the wider the band, the higher the demand), two-way trips between districts of 10,000 or more trips per day, which was the "cut-off" point under one of the corridor screening criteria. This is shown in Figure B-1.

Higher-demand travel pairs were then analyzed as to whether existing corridors could serve that demand, or whether new corridors would be needed, either subregional in nature or regional. Those links that followed existing regional corridors were eliminated, another screening criteria, as the Visioning Study is focused on identifying potential *new* regional corridors. The traffic assignment component of the model was run whereby the trips were assigned to the 2030 MTP network, and summarized. Volume-to-capacity or v/c ratio (the ratio of the model's traffic volume for each direction on a link to the link's theoretical vehicle capacity) plots were developed to assist in identifying, refining and evaluating the candidate corridors (see Figure B-2). The resultant daily travel volume projections (called "2050" at this point in the study) are shown in Figure B-3.

The travel demand model trip assignment process was then applied to each of the new corridors identified through the screening process, and resulting travel volumes were plotted for analysis. Results of the modeling, in the form of daily travel volume projections, are shown for each of the corridor options for selected locations along the corridor in Figures B-4 through B-7.

Trip summaries for selected regional corridors are shown in Tables B-1 and B-2 and in Figure B-8. They compare the Vision Study trip summaries for I-5, I-205, SR 500, and the West and East Corridor options to existing conditions, and to the adopted Growth Management Plan (2024). The increase in trip length and percent of regional trips using SR 500 in the Vision scenario reflects the outward land use growth to the north and east in Clark County in that scenario, and that SR 500 is one of the few routes that carry northward and eastward regional trips. The results also indicate that the candidate new corridors are carrying an almost-even split of regional and subregional trips.

Table B-1: Average Trip Length Summary and Comparison

	All Clark	I-5	SR 500	West	East
Today	6.27	17.33	9.52	-	-
GMA 2024	5.69	17.23	9.61	-	-
Vision	5.53	17.59	11.56	8.55	9.08

Table B-2: Percent Regional Trips (> 8 miles in Length)

	All Clark	I-5	SR 500	West	East
Today	28%	73%	46%	-	-
GMA 2024	24%	73%	47%	-	-
Vision	23%	75%	58%	43%	47%

A similar process was undertaken to model new crossings of the Columbia River. Results are shown in Table B-3 below and in Figure B-9. Trips were summarized via select link analysis into "trip capture areas" (see Figures B-10 and B-11): for more detail on this and other analysis of the new River crossings, see Appendix E. The West crossing had a reduction impact on I-5 but little impact to I-205; the East crossing reduced traffic on I-205 but had little effect on I-5. The modeling indicated that providing a new river crossing would increase cross-river demand (latent demand) by 3% (west crossing) and 10% (east crossing).

Table B-3: Cross-River Travel Volume Summaries

Scenario	I-5	I-205	East	West	Total	Change from Base
Base	269	217			486	
West Crossing	246	215		42	503	3%
East Crossing	273	183	78		534	10%

Detailed district-level trip summaries are shown in Figure B-11; detailed river crossing model run plots are shown in Figure B-12.

Figure B-1: Visioning Study Trip Distribution by District

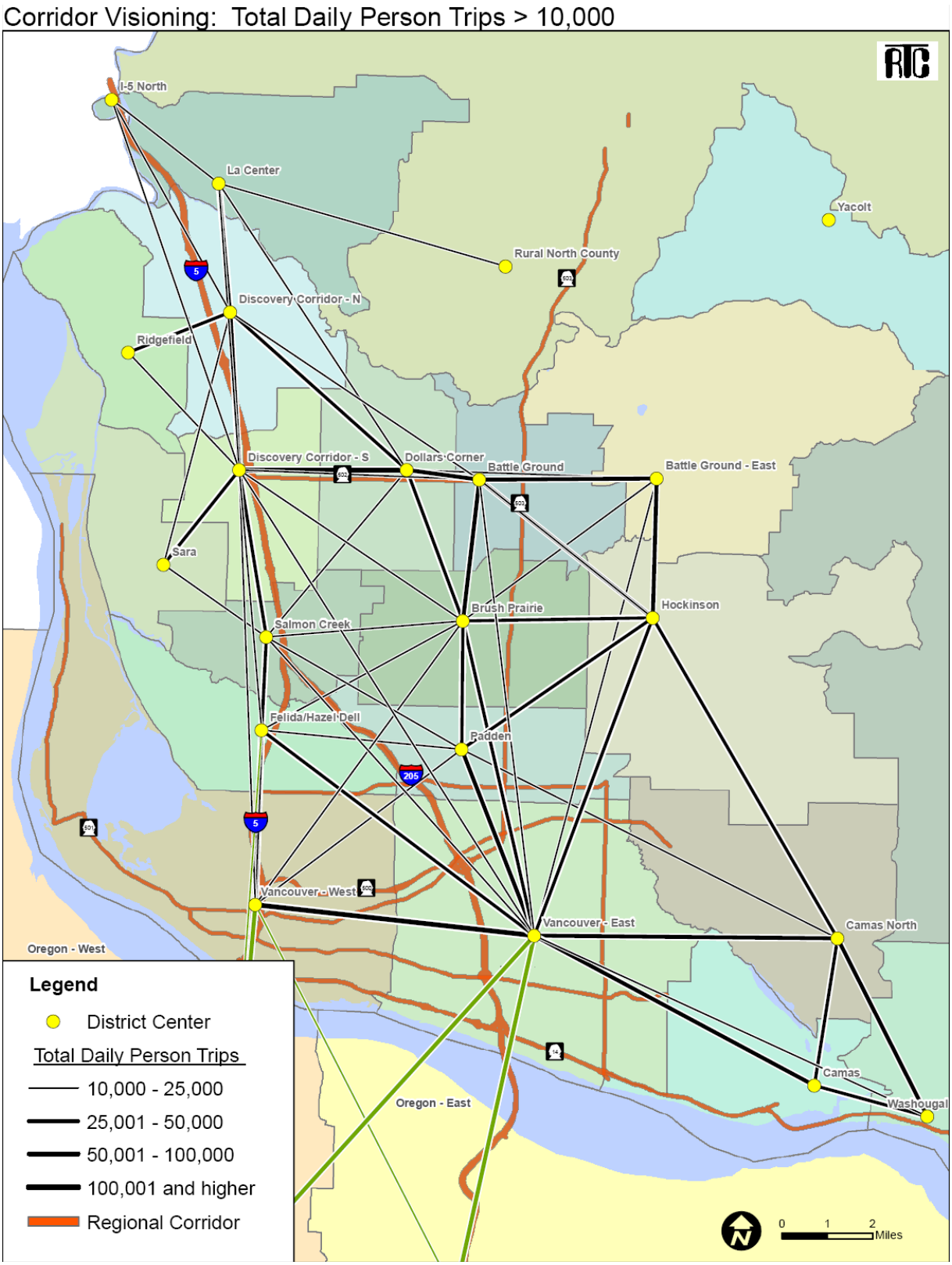


Figure B-2: Visioning Study Volume-Capacity Ratios
(Creek and River Crossings Circled)

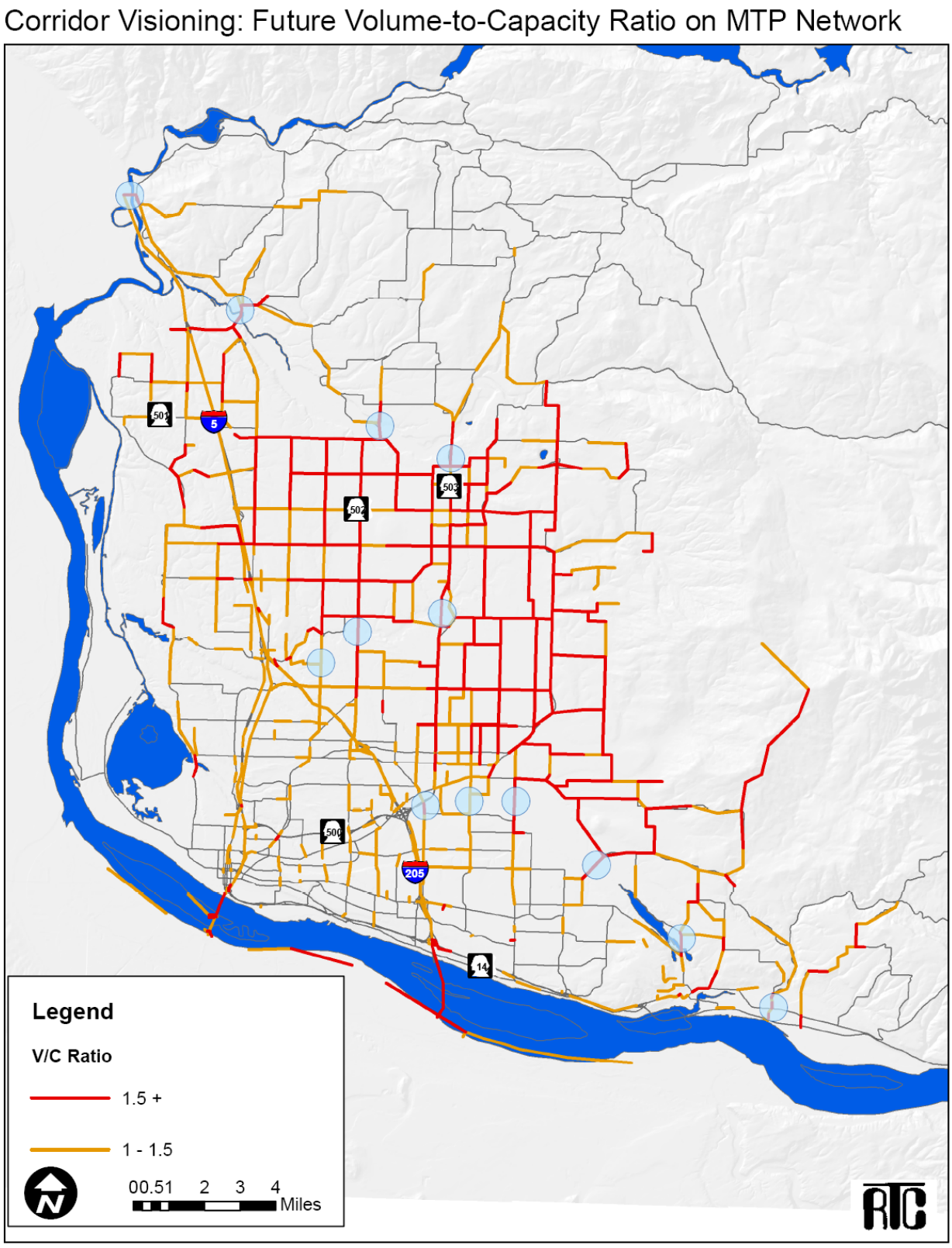


Figure B-3: Visioning Study Daily Volume Projections (2030 MTP Network)

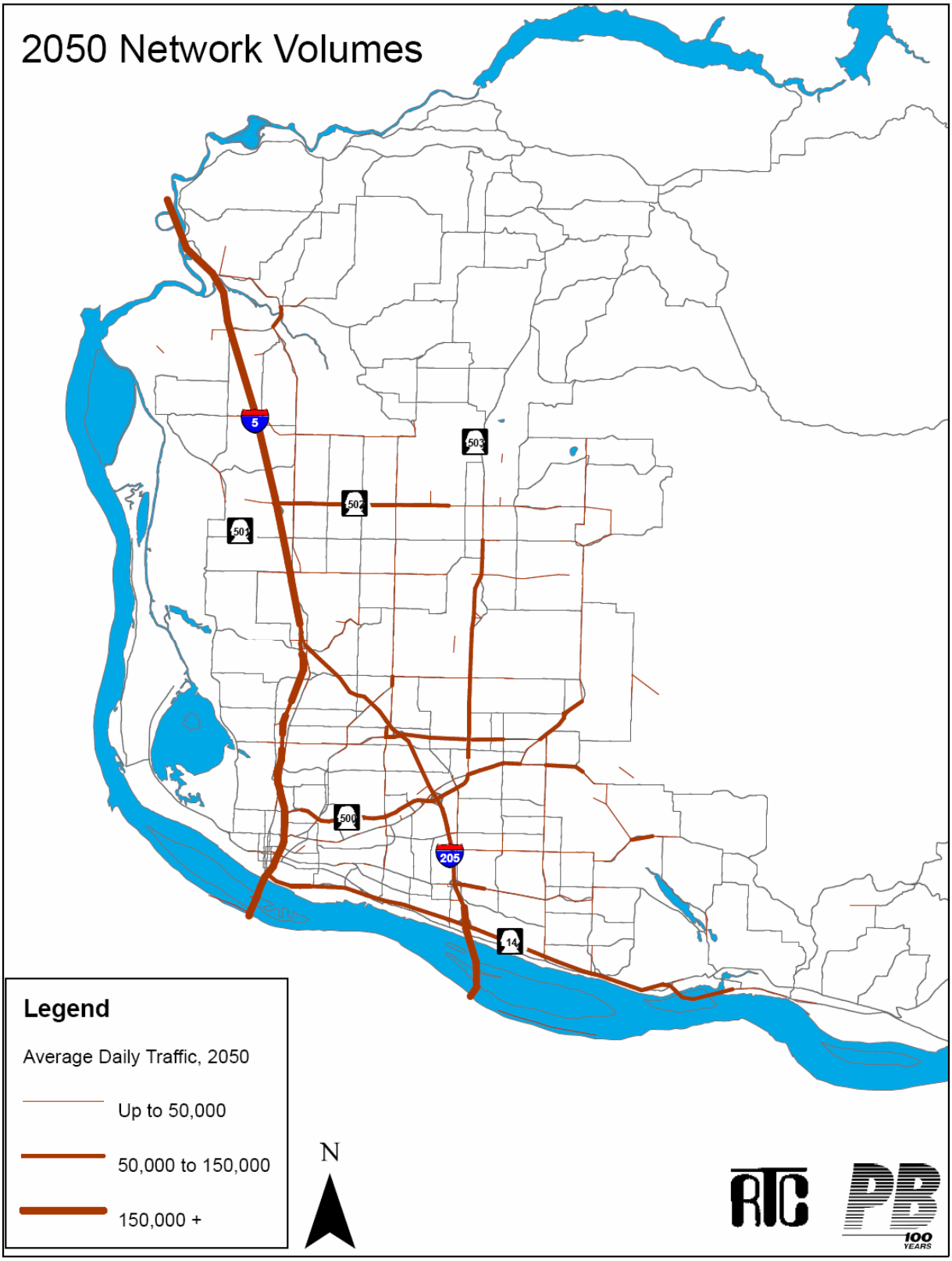


Figure B-4: Visioning Study Daily Volume Projections – Option West 1

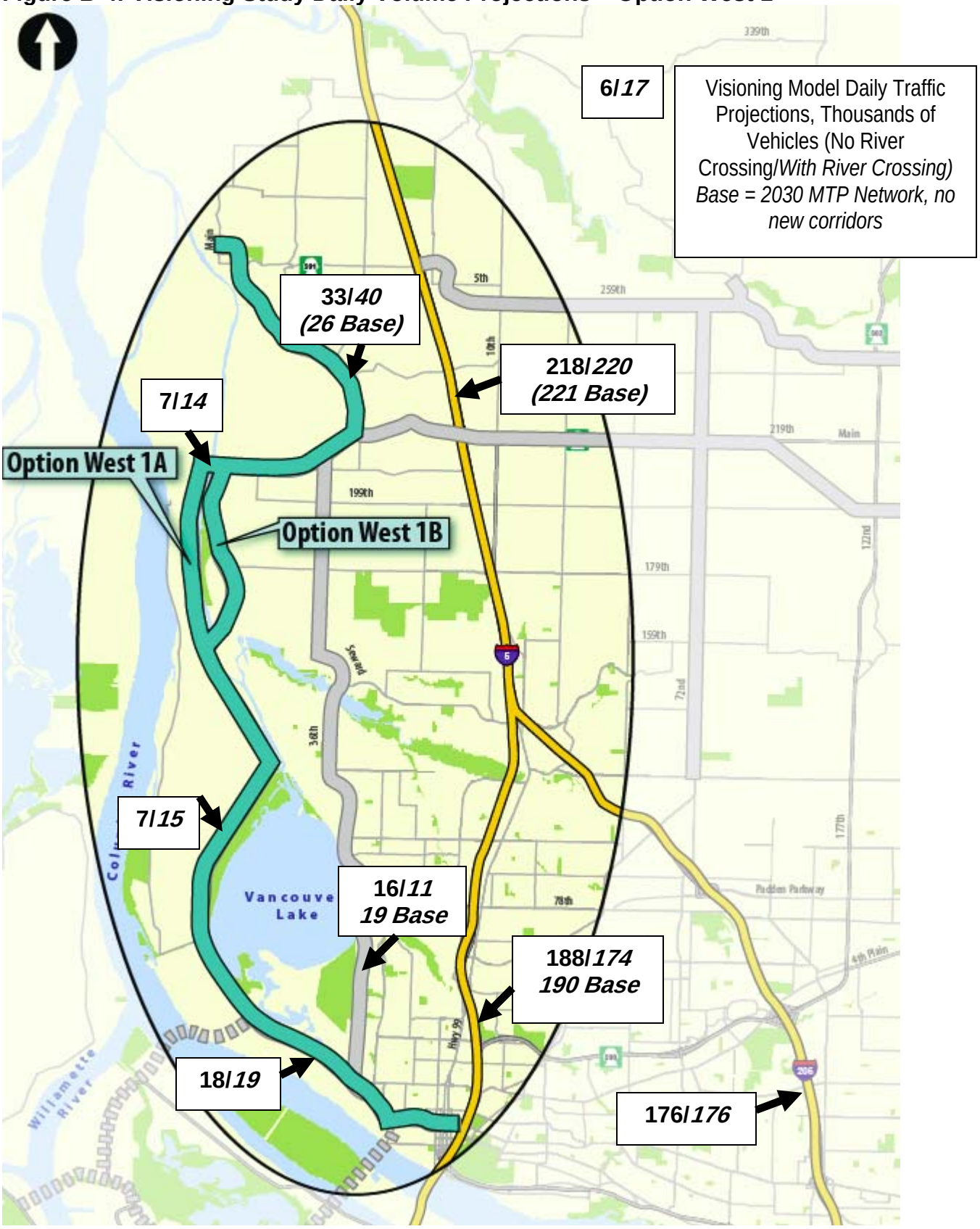


Figure B-5: Visioning Study Daily Travel Volume Projections – Option West 2

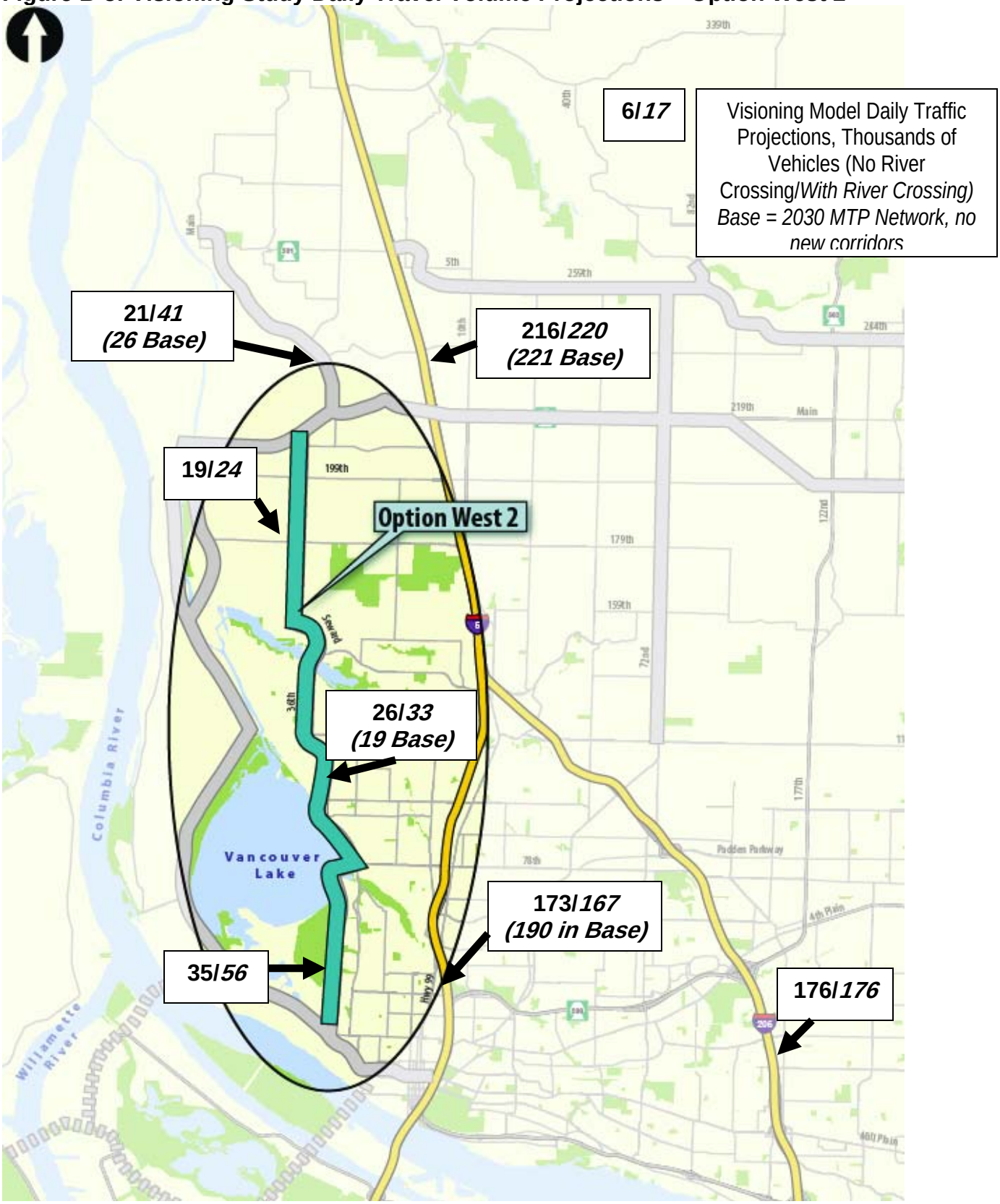
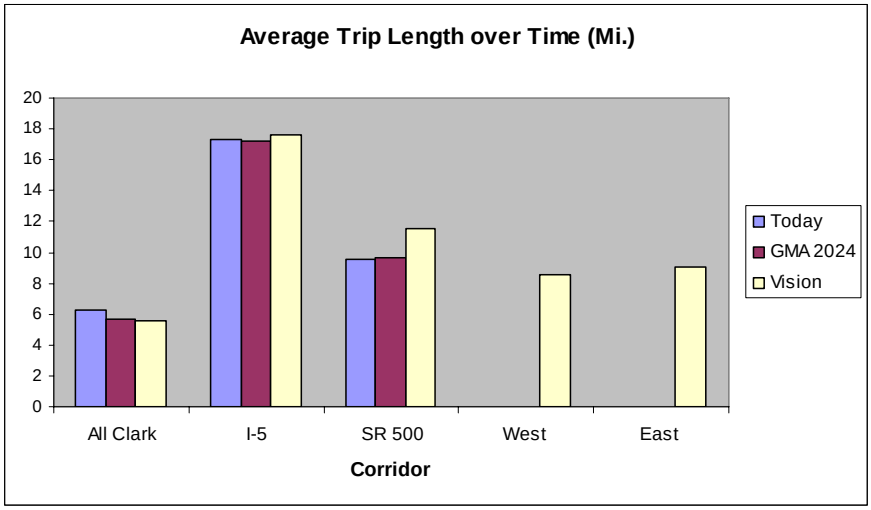
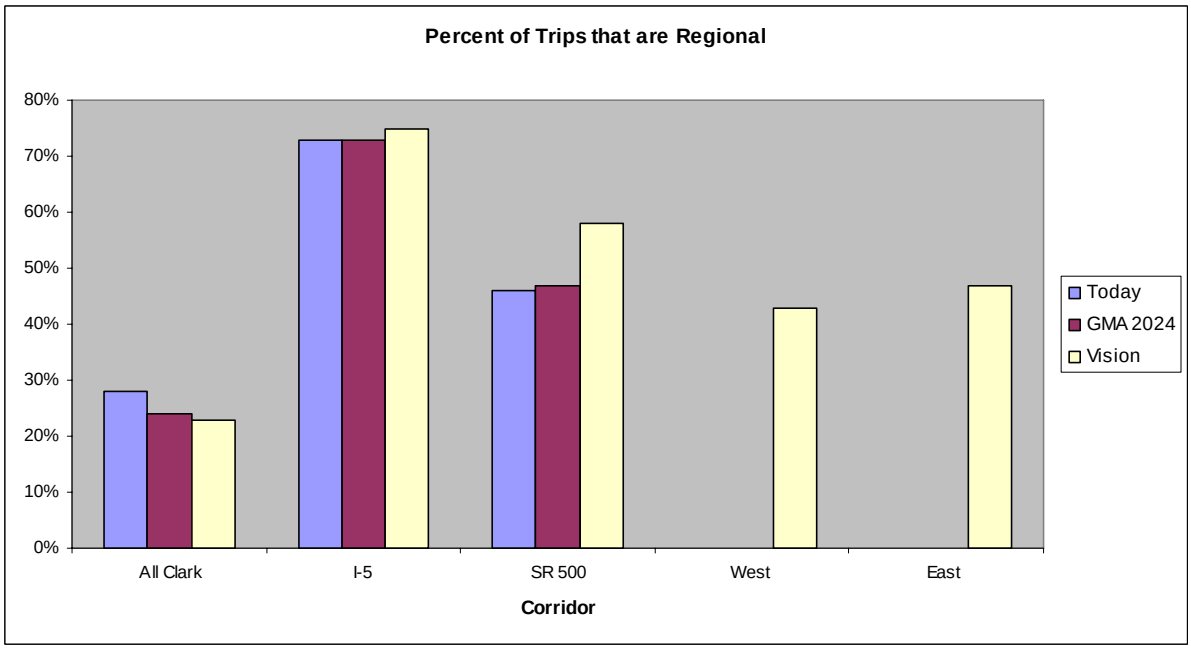


Figure B-6: Visioning Daily Travel Volume Projections – Option East 1 and 3

Figure B-7: Visioning Daily Travel Volume Projections – Option East 1 and 4

Figure B-8: Trip Length Summaries





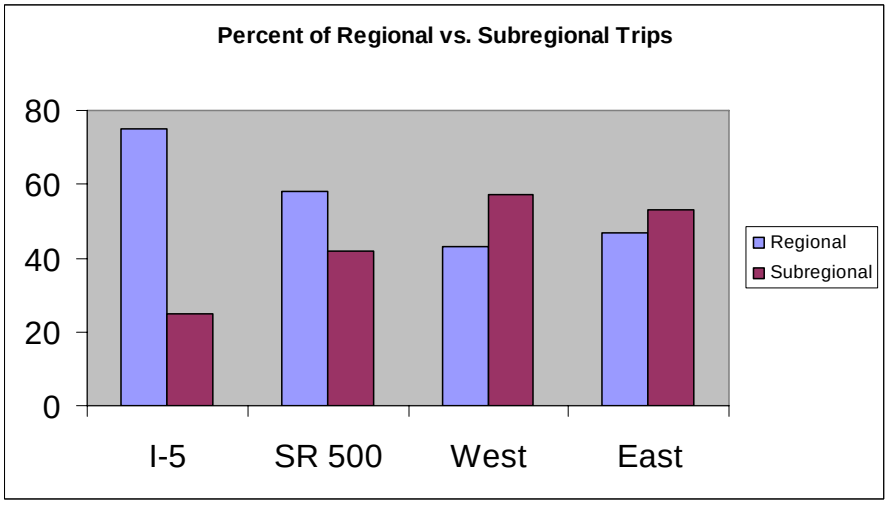


Figure B-9: New River Crossing Travel Volume Projections

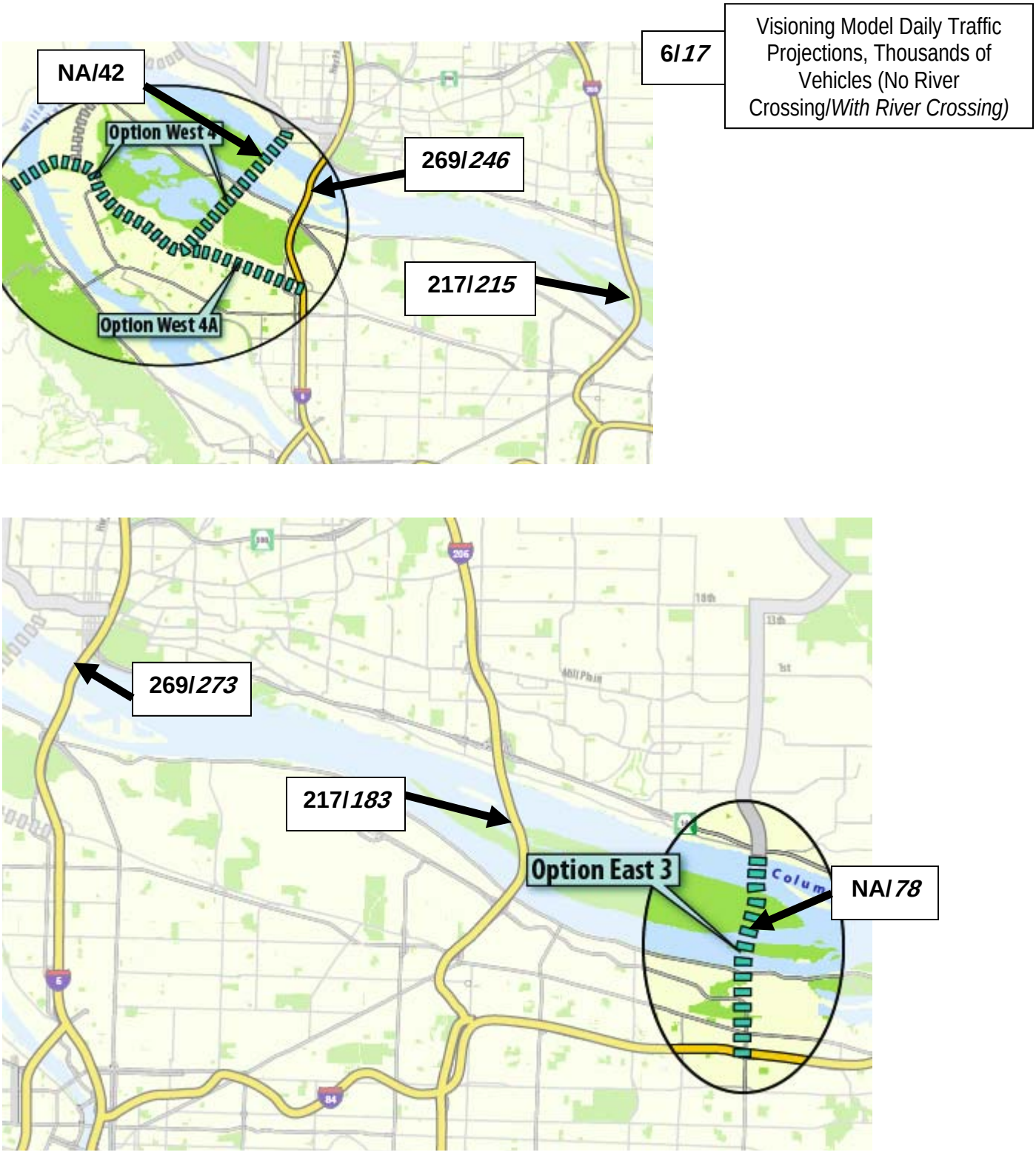
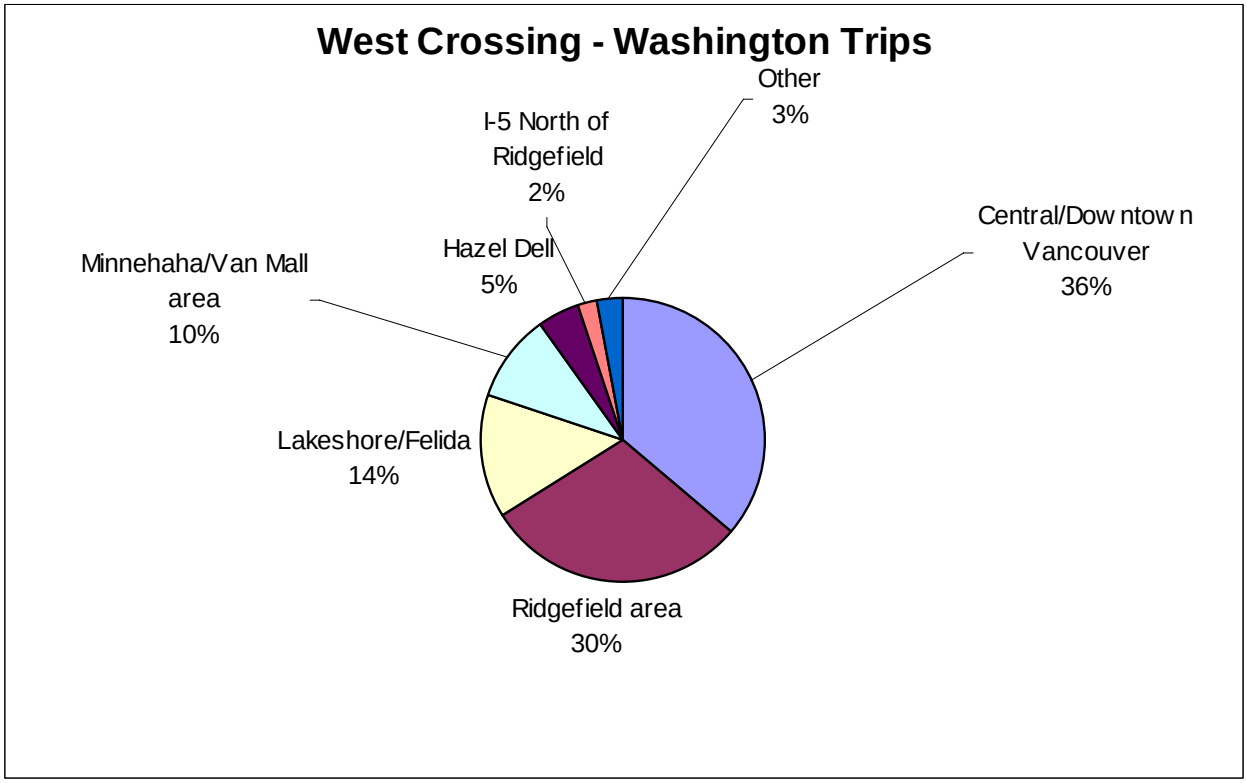


Figure B-10: West New River Crossing Select Link Trip Summary



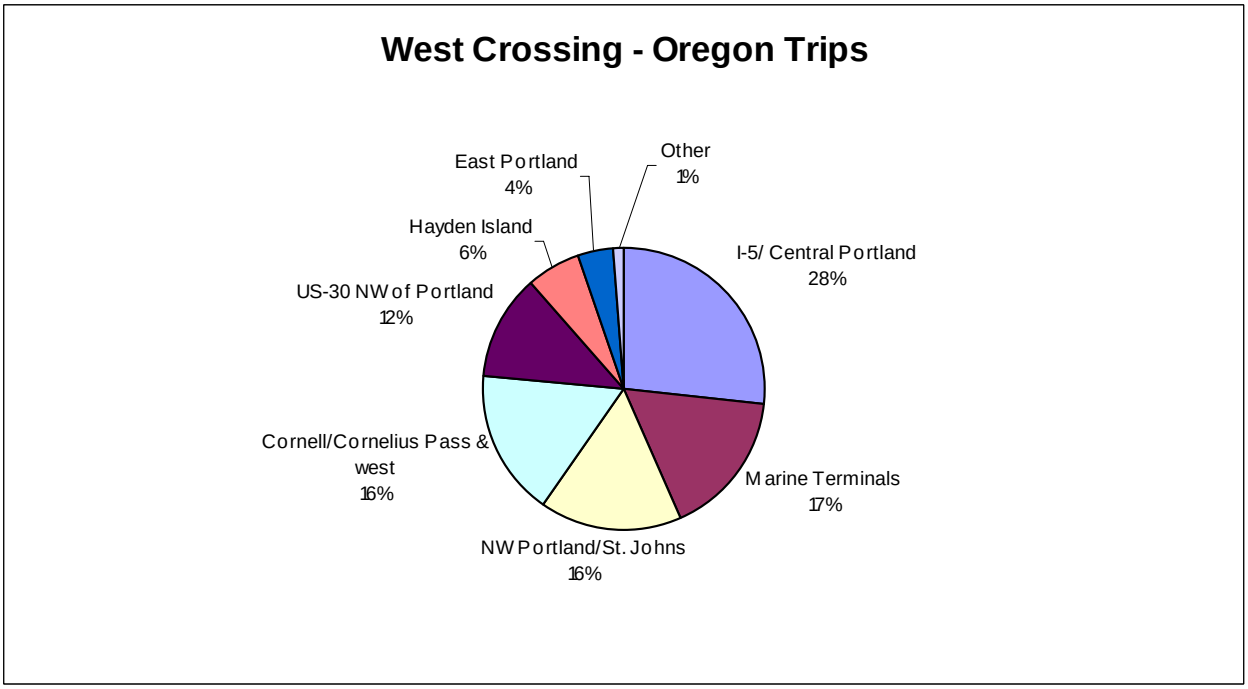
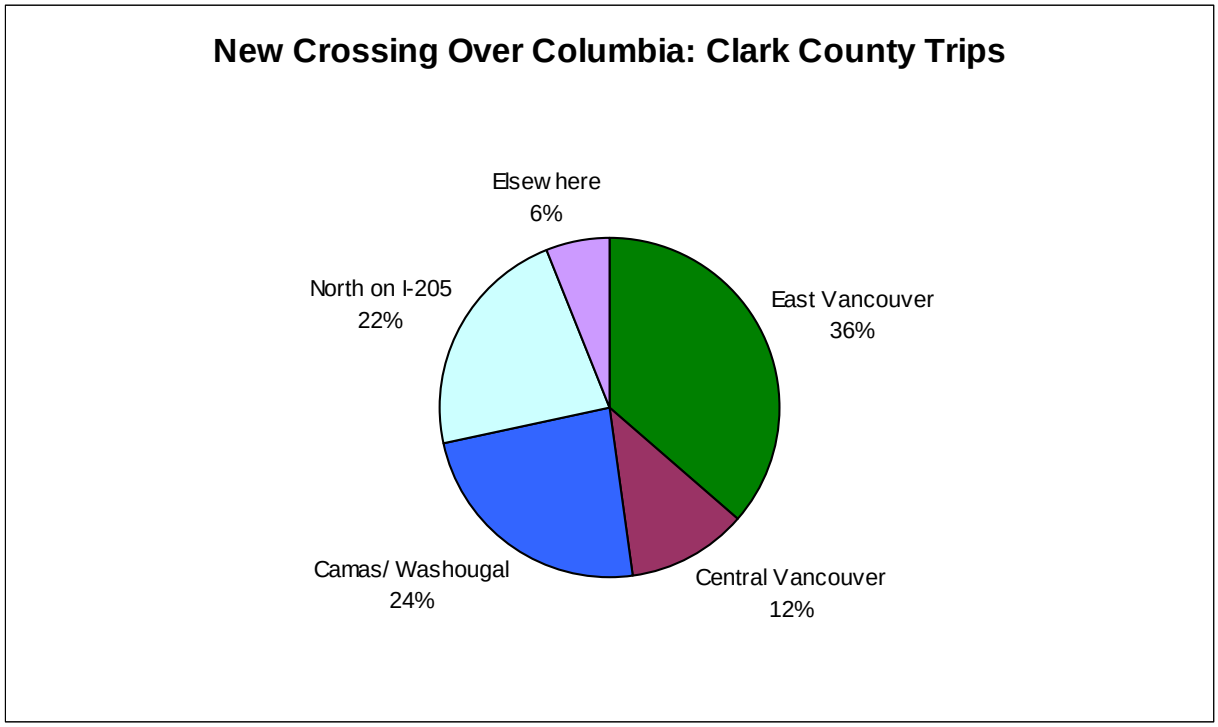


Figure B-11: East New River Crossing Select Link Trip Summary



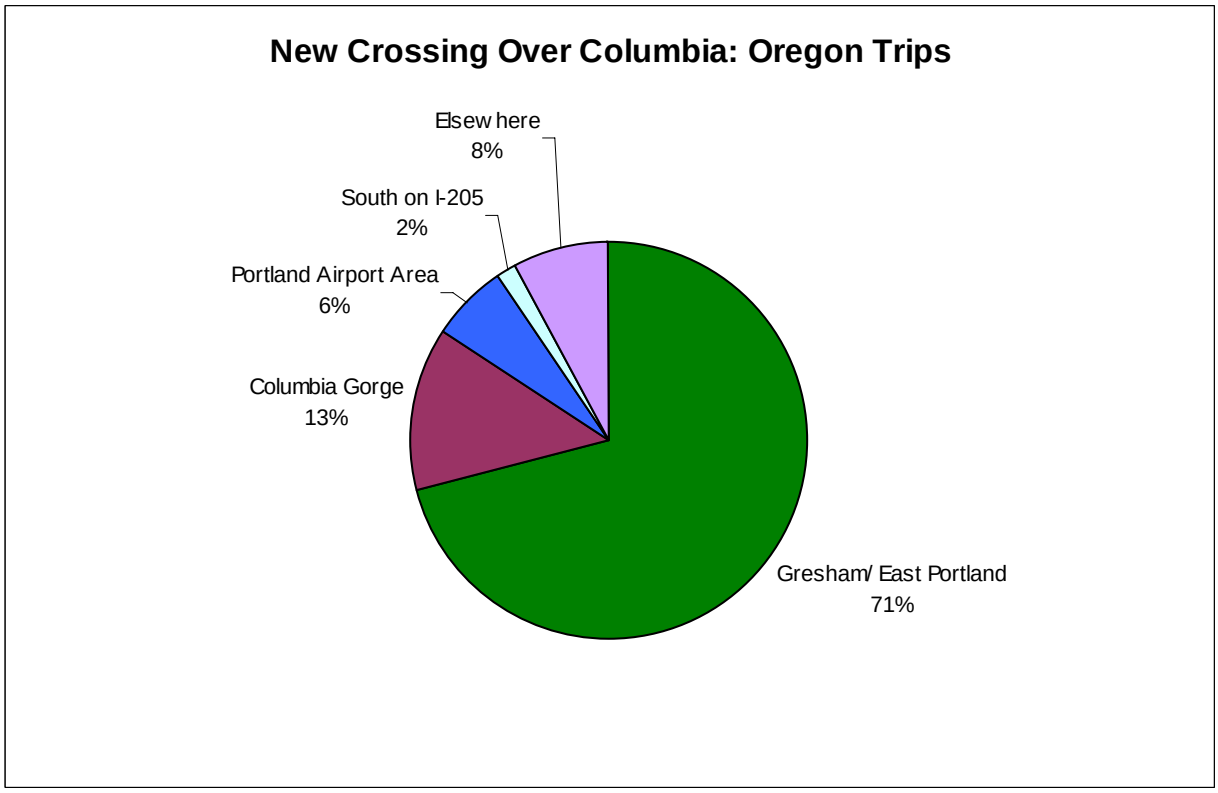


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Figure B-12: Trip Summary by District

Corr	BG	BG_E	LC	DC_N	DC_S	RF	DollCorn	Hockin	SalCrk	Sara	BP	Wash	Cam	Yac	VA_E	VA_W	Fel_HD	Padden	Cam_N	Rur_N	Rur_E	OR_W	OR_E
Battle Ground		84,535	6,081	10,222	19,374	1,693	79,865	20,120	8,971	1,533	57,460	457	784	2,967	10,065	4,828	2,812	7,809	2,642	8,517	628	4,086	3,747
Battle Ground - East	84,535		2,564	4,829	7,549	617	20,060	52,601	7,359	437	23,500	698	1,277	6,564	10,015	3,613	1,376	4,920	5,605	6,056	4,434	3,237	4,158
La Center	6,081	2,564		36,963	10,602	4,462	10,085	469	4,272	652	2,531	48	123	1,106	1,595	1,825	947	583	246	12,721	47	1,905	2,086
Discovery Corridor - N	10,222	4,829	36,963		50,812	48,245	30,309	1,322	8,466	10,628	4,461	261	347	992	5,123	4,861	4,390	1,626	711	5,205	97	3,404	2,174
Discovery Corridor - S	19,374	7,549	10,602	50,812		15,436	66,399	3,105	30,038	31,306	13,903	546	717	736	11,759	11,440	15,238	4,269	1,476	3,024	152	6,518	3,108
Ridgefield	1,693	617	4,462	48,245	15,436		5,372	209	3,759	5,105	1,201	52	122	94	1,892	2,313	1,523	526	226	545	8	1,991	1,207
Dollars Corner	79,865	20,060	10,085	30,309	66,399	5,372		6,298	18,349	6,172	39,959	398	576	1,749	7,842	7,187	6,507	5,583	1,272	8,604	288	5,278	3,156
Hockinson	20,120	52,601	469	1,322	3,105	209	6,298		7,650	318	40,800	1,680	3,502	587	40,218	9,047	3,793	25,391	31,925	643	3,781	6,058	6,249
Salmon Creek	8,971	7,359	4,272	8,466	30,038	3,759	18,349	7,650		11,296	21,299	587	1,107	418	21,378	20,650	34,729	10,683	3,573	1,348	277	8,890	3,712
Sara	1,533	437	652	10,628	31,306	5,105	6,172	318	11,296		2,694	66	215	21	3,829	6,052	6,872	1,106	383	123	5	4,056	1,821
Brush Prairie	57,460	23,500	2,531	4,461	13,903	1,201	39,959	40,800	21,299	2,694		1,001	1,510	1,161	33,783	16,841	18,113	39,574	5,311	2,951	752	7,389	5,656
Washougal	457	698	48	261	546	52	398	1,680	587	66	1,001		33,003	18	22,378	8,523	680	1,143	54,021	21	8,235	7,214	8,803
Camas	784	1,277	123	347	717	122	576	3,502	1,107	215	1,510	33,003		57	68,024	8,900	1,205	2,228	34,926	68	942	6,966	8,475
Yacolt	2,967	6,564	1,106	992	736	94	1,749	587	418	21	1,161	18	57		549	258	92	265	207	8,735	1,519	227	423
Vancouver - East	10,065	10,015	1,595	5,123	11,759	1,892	7,842	40,218	21,378	3,829	33,783	22,378	68,024	549		178,388	33,130	75,787	64,753	1,026	1,559	56,652	61,603
Vancouver - West	4,828	3,613	1,825	4,861	11,440	2,313	7,187	9,047	20,650	6,052	16,841	8,523	8,900	258	178,388		78,959	22,960	9,798	656	677	75,278	20,199
Felida/Hazel Dell	2,812	1,376	947	4,390	15,238	1,523	6,507	3,793	34,729	6,872	18,113	680	1,205	92	33,130	78,959		18,954	2,734	295	90	22,394	5,820
Padden	7,809	4,920	583	1,626	4,269	526	5,583	25,391	10,683	1,106	39,574	1,143	2,228	265	75,787	22,960	18,954		10,934	591	345	7,018	6,103
Camas North	2,642	5,605	246	711	1,476	226	1,272	31,925	3,573	383	5,311	54,021	34,926	207	64,753	9,798	2,734	10,934		215	6,683	5,245	6,265
Rural North County	8,517	6,056	12,721	5,205	3,024	545	8,604	643	1,348	123	2,951	21	68	8,735	1,026	656	295	591	215		179	610	836
Rural East County	628	4,434	47	97	152	8	288	3,781	277	5	752	8,235	942	1,519	1,559	677	90	345	6,683	179		443	602
Oregon - West	4,086	3,237	1,905	3,404	6,518	1,991	5,278	6,058	8,890	4,056	7,389	7,214	6,966	227	56,652	75,278	22,394	7,018	5,245	610	443		1,182,843
Oregon - East	3,747	4,158	2,086	2,174	3,108	1,207	3,156	6,249	3,712	1,821	5,656	8,803	8,475	423	61,603	20,199	5,820	6,103	6,265	836	602	1,182,843	

Two-Way Trips

i/j	BG	BG - East	LC	DC - North	DC - South	RF	Dollars C	Hockin	Salmon C	Sara	BP	Wash	Cam	Yac	Van - East	Van - West	Felida/HD	Padden	Cam - North	Rural North	Rural East	OR - West	OR - East
Battle Ground		84,535	6,081	10,222	19,374	1,693	79,865	20,120	8,971	1,533	57,460	457	784	2,967	10,065	4,828	2,812	7,809	2,642	8,517	628	4,086	3,747
Battle Ground - East	84,535		2,564	4,829	7,549	617	20,060	52,601	7,359	437	23,500	698	1,277	6,564	10,015	3,613	1,376	4,920	5,605	6,056	4,434	3,237	4,158
La Center	6,081	2,564		36,963	10,602	4,462	10,085	469	4,272	652	2,531	48	123	1,106	1,595	1,825	947	583	246	12,721	47	1,905	2,086
Discovery Corridor - N	10,222	4,829	36,963		50,812	48,245	30,309	1,322	8,466	10,628	4,461	261	347	992	5,123	4,861	4,390	1,626	711	5,205	97	3,404	2,174
Discovery Corridor - S	19,374	7,549	10,602	50,812		15,436	66,399	3,105	30,038	31,306	13,903	546	717	736	11,759	11,440	15,238	4,269	1,476	3,024	152	6,518	3,108
Ridgefield	1,693	617	4,462	48,245	15,436		5,372	209	3,759	5,105	1,201	52	122	94	1,892	2,313	1,523	526	226	545	8	1,991	1,207
Dollars Corner	79,865	20,060	10,085	30,309	66,399	5,372		6,298	18,349	6,172	39,959	398	576	1,749	7,842	7,187	6,507	5,583	1,272	8,604	288	5,278	3,156
Hockinson	20,120	52,601	469	1,322	3,105	209	6,298		7,650	318	40,800	1,680	3,502	587	40,218	9,047	3,793	25,391	31,925	643	3,781	6,058	6,249
Salmon Creek	8,971	7,359	4,272	8,466	30,038	3,759	18,349	7,650		11,296	21,299	587	1,107	418	21,378	20,650	34,729	10,683	3,573	1,348	277	8,890	3,712
Sara	1,533	437	652	10,628	31,306	5,105	6,172	318	11,296		2,694	66	215	21	3,829	6,052	6,872	1,106	383	123	5	4,056	1,821
Brush Prairie	57,460	23,500	2,531	4,461	13,903	1,201	39,959	40,800	21,299	2,694		1,001	1,510	1,161	33,783	16,841	18,113	39,574	5,311	2,951	752	7,389	5,656
Washougal	457	698	48	261	546	52	398	1,680	587	66	1,001		33,003	18	22,378	8,523	680	1,143	54,021	21	8,235	7,214	8,803
Camas	784	1,277	123	347	717	122	576	3,502	1,107	215	1,510	33,003		57	68,024	8,900	1,205	2,228	34,926	68	942	6,966	8,475
Yacolt	2,967	6,564	1,106	992	736	94	1,749	587	418	21	1,161	18	57		549	258	92	265	207	8,735	1,519	227	423
Vancouver - East	10,065	10,015	1,595	5,123	11,759	1,892	7,842	40,218	21,378	3,829	33,783	22,378	68,024	549		178,388	33,130	75,787	64,753	1,026	1,559	56,652	61,603
Vancouver - West	4,828	3,613	1,825	4,861	11,440	2,313	7,187	9,047	20,650	6,052	16,841	8,523	8,900	258	178,388		78,959	22,960	9,798	656	677	75,278	20,199
Felida/Hazel Dell	2,812	1,376	947	4,390	15,238	1,523	6,507	3,793	34,729	6,872	18,113	680	1,205	92	33,130	78,959		18,954	2,734	295	90	22,394	5,820
Padden	7,809	4,920	583	1,626	4,269	526	5,583	25,391	10,683	1,106	39,574	1,143	2,228	265	75,787	22,960	18,954		10,934	591	345	7,018	6,103
Camas North	2,642	5,605	246	711	1,476	226	1,272	31,925	3,573	383	5,311	54,021	34,926	207	64,753	9,798	2,734	10,934		215	6,683	5,245	6,265
Rural North County	8,517	6,056	12,721	5,205	3,024	545	8,604	643	1,348	123	2,951	21	68	8,735	1,026	656	295	591	215		179	610	836
Rural East County	628	4,434	47	97	152	8	288	3,781	277	5	752	8,235	942	1,519	1,559	677	90	345	6,683	179		443	602
Oregon - West	4,086	3,237	1,905	3,404	6,518	1,991	5,278	6,058	8,890	4,056	7,389	7,214	6,966	227	56,652	75,278	22,394	7,018	5,245	610	443		1,182,843
Oregon - East	3,747	4,158	2,086	2,174	3,108	1,207	3,156	6,249	3,712	1,821	5,656	8,803	8,475	423	61,603	20,199	5,820	6,103	6,265	836	602	1,182,843	
External																							
Total Attractions	**27,428**	**112,946**	**26,231**	**65,230**	**106,884**	**74,954**	**236,271**	**158,170**	**117,346**	**74,943**	**269,441**	**85,231**	**96,887**	**27,847**	**499,832**	**414,295**	**260,652**	**248,398**	**249,150**	**62,968**	**31,742**	**1,417,701**	**1,339,047**

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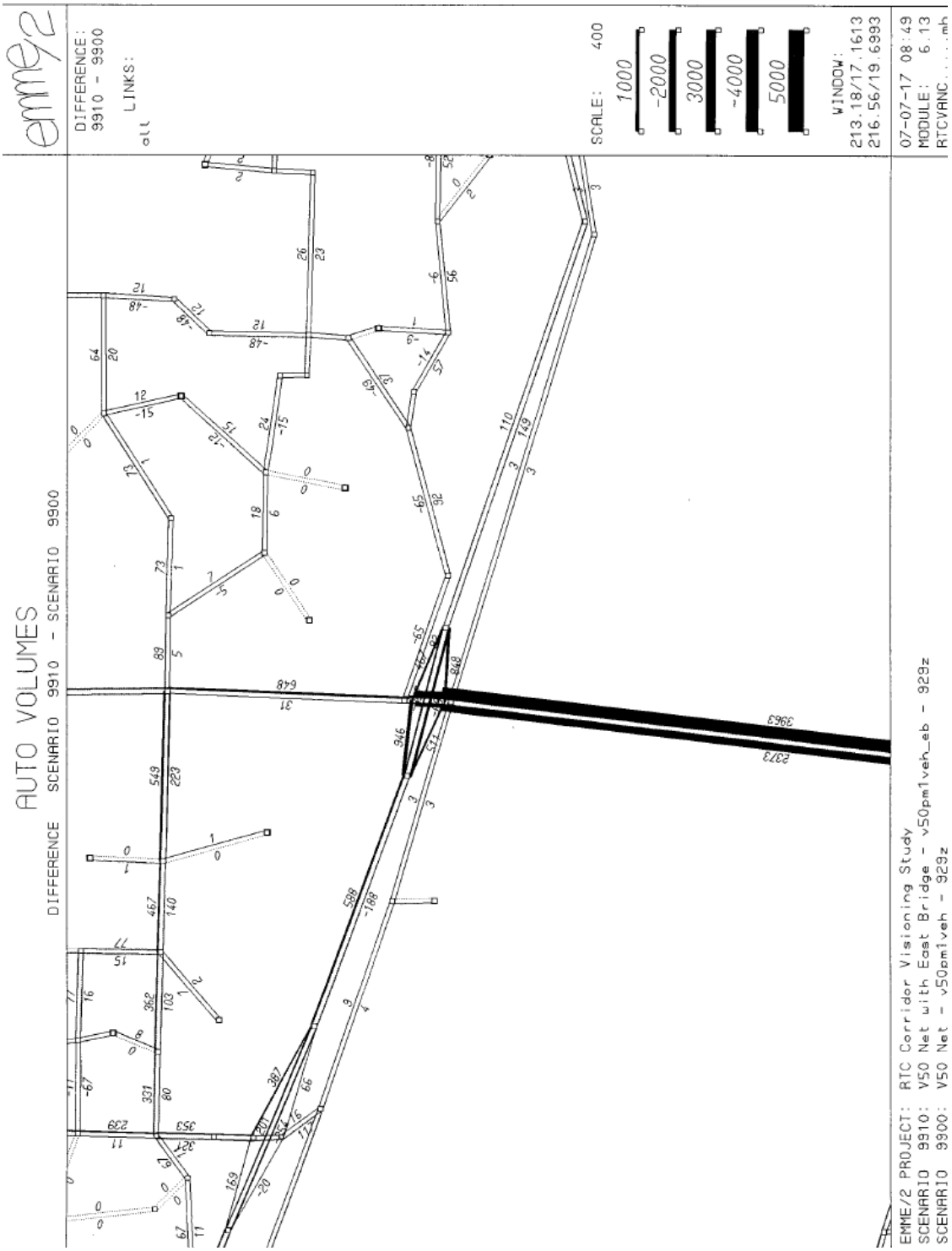
Figure B-13: New River Crossing Travel Model Plots



ADDITIONAL VOLUMES ON AUTO NETWORK
emme/2
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all
THRESHOLD:
LOWER: -******
UPPER: ******
SCALE: 300
1000
2000
3000
4000
5000
WINDOW:
210.71/14.9843
219.15/21.3123
07-07-17 08:50
MODULE: 6.12
RTCVANC....mh
EMME/2 PROJECT: RTC Corridor Visioning Study
SCENARIO 9910: V50 Net with East Bridge - v50pm1veh_eb - 929z

AUTO VOLUMES
emme/2
LINKS:
all
THRESHOLD:
LOWER: -******
UPPER: ******
WINDOW:
210.71/14.9843
219.15/21.3123
07-07-17 08:50
MODULE: 6.12
RTCVANC.....mh
EMME/2 PROJECT: RTC Corridor Visioning Study
SCENARIO 9910: V50 Net with East Bridge - v50pm1veh_eb - 929z

AUTO VOLUMES
DIFFERENCE SCENARIO 9910 - SCENARIO 9900
DIFFERENCE:
9910 - 9900
LINKS:
all
SCALE: 400
1000
-2000
3000
-4000
5000
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EMME/2 PROJECT: RTC Corridor Visioning Study
SCENARIO 9910: V50 Net with East Bridge - v50pm1veh_eb - 929z
SCENARIO 9900: V50 Net - v50pm1veh - 929z

July 19, 2007

Bi-State Coordination Committee Briefing on Transportation Vision Study: A Discussion of Additional Columbia River Crossings.

Purpose and Scope

- Because new transportation corridors take a considerable amount of time to plan for and build, therefore the RTC Board initiated the New Transportation Corridors Visioning Study back in late 2006.
- The purpose of the Study, and its primary focus, is to answer the question "How will we get around within our own community in the longer-term future if Clark County reaches one million in population?" The study is also staged to analyze the potential need for future crossings of the Columbia River.
- The Corridors Visioning Study focuses primarily on where new transportation corridors might be needed to connect places and nodes of growth in Clark County.

Growth Assumptions

- A major challenge for the study was where to locate potential growth beyond the 20-year horizon.
- Current, adopted land use and regional transportation plans include only a 20-year growth forecast.
- The Steering Committee directed us to project demographic trends and policies from the County's Comprehensive Plan up to a point of locating 1 million people and a half million jobs. Expert input from local jurisdictions' land use planners was sought, as was the use of Clark County's GIS information on vacant and available lands. Residential development was largely confined below the 800-foot contour and employment growth below the 400-foot contour. Conservation areas were avoided and some redevelopment of existing urban centers at an average 10% greater density was factored in to arrive at "a" possible future land use allocation.
- Total population and employment assumptions for the Metro area were 3 million people and 2 million jobs. Some placed through increased density and the remainder primarily in urban expansion to the south and east.

Travel Demand Model Assumptions

- Included RTC's MTP and Metro's RTP transportation system plans.
- Included increased I-5 bridge capacity from CRC
- Upgraded rural roads in Clark County urban expansion area to urban arterials.
- Transit was held to MTP and RTP levels.

Analyzing a Set of New Regional Corridors

- Two step process to identify new regional corridors
- First step was a District to District travel analysis
- Second step was to further define a Regional Corridor and apply a set criteria (connects more than one center, ability to improve safety/relief to high accident corridors, congestion relief to existing regional corridors, compatible with planned land use, multi modal benefits, and have political/community support)

- The analysis resulted in the green lines on map (see map)

Proposed Battle Ground to Camas Corridor

- Use map to explain the BG to Camas corridor.

Columbia River Crossing Travel Demand Characteristics (use MTP map)

- In 2005 Average Daily Columbia River Vehicle Crossings - 285,000
- CRC no-build/no-build – 394,000
- Overall Columbia River Crossing Demand (includes CRC highway improvements) – 480,000
- 22,000 I-5 capacity, nearly 18,000 I-205 capacity = 40,000 per hour = 12 hours at capacity – additional crossing capacity needed.
- Overall Columbia River Crossing Demand with additional 192nd Avenue to 181st bridge – 510,000
- Adds about 30,000 ADT to overall demand for cross river travel and relieves I-205 peak demand by about 20% with little impact on I-5 demand.
- Most users are near the bridge, with some flows between I-84 and North I-5 using it as a by-pass of the I-205 bridge.
- What are the additional possible locations east of I-205 and what of west of I-5.