

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).

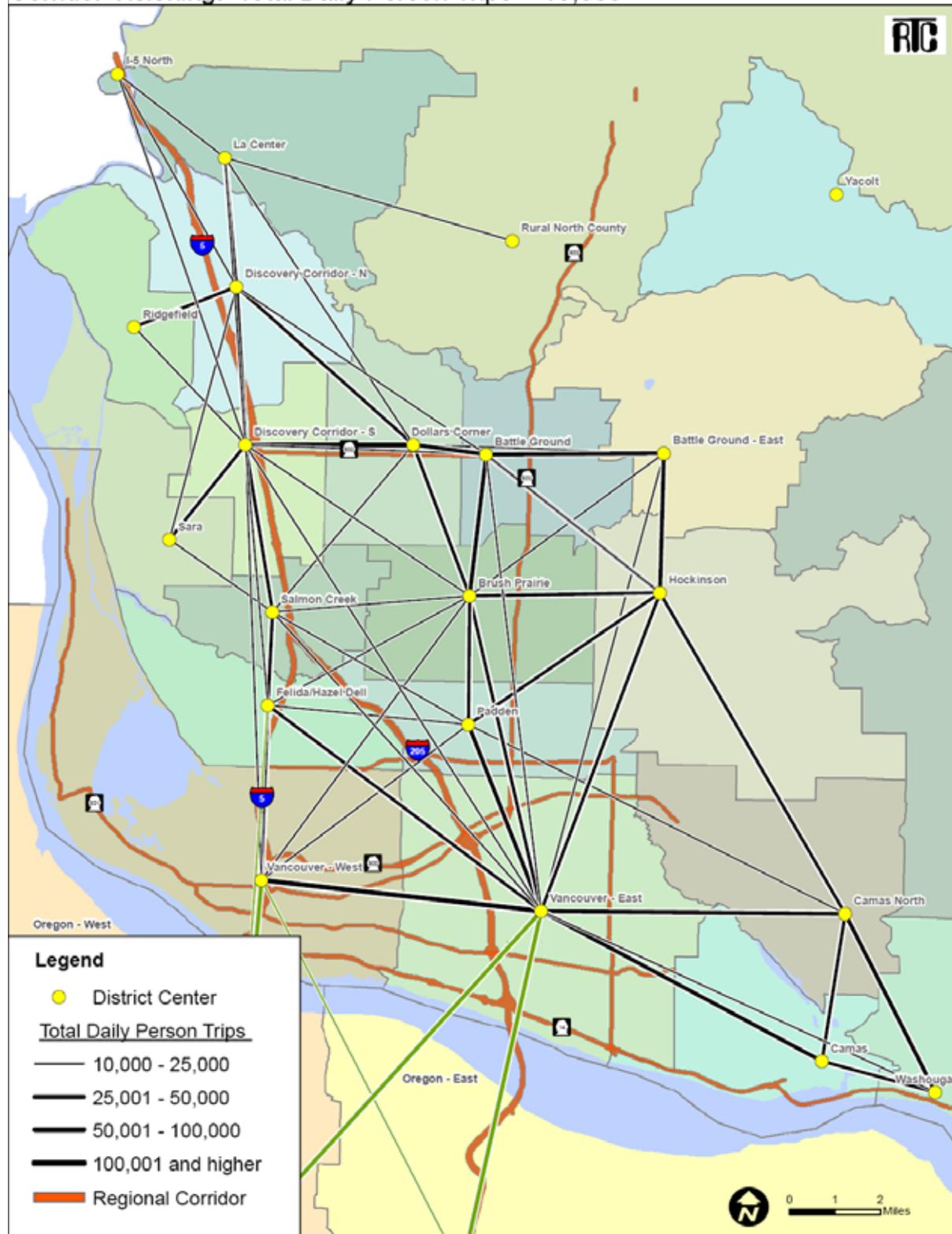
Table B-3: Cross-River Travel Volume Summaries

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

Corridor Visioning: Total Daily Person Trips > 10,000



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

Corridor Visioning: Future Volume-to-Capacity Ratio on MTP Network

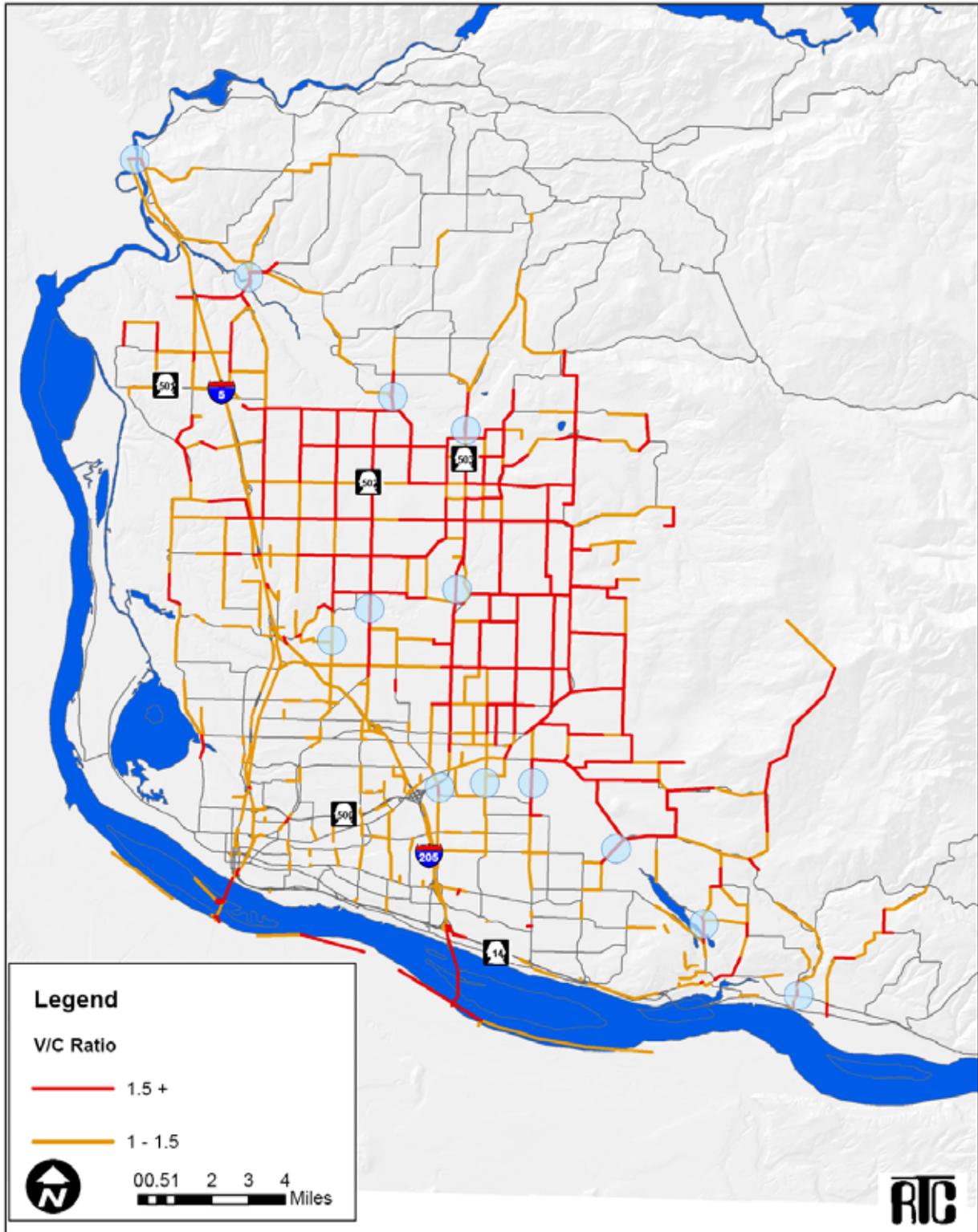


Figure B-3: Visioning Study Daily Volume Projections (2030 MTP Network)

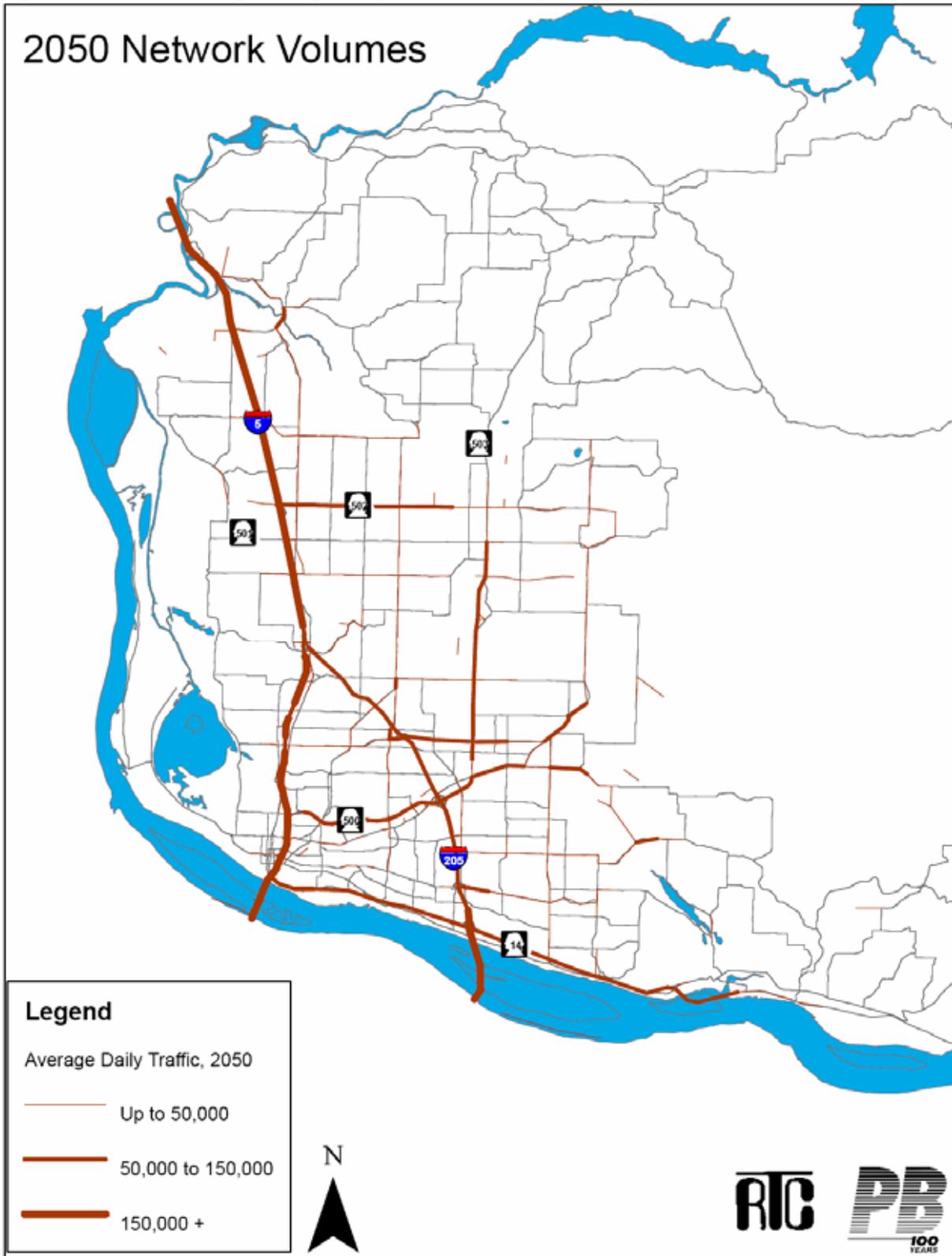


Figure B-4: Visioning Study Daily Volume Projections – Option West 1

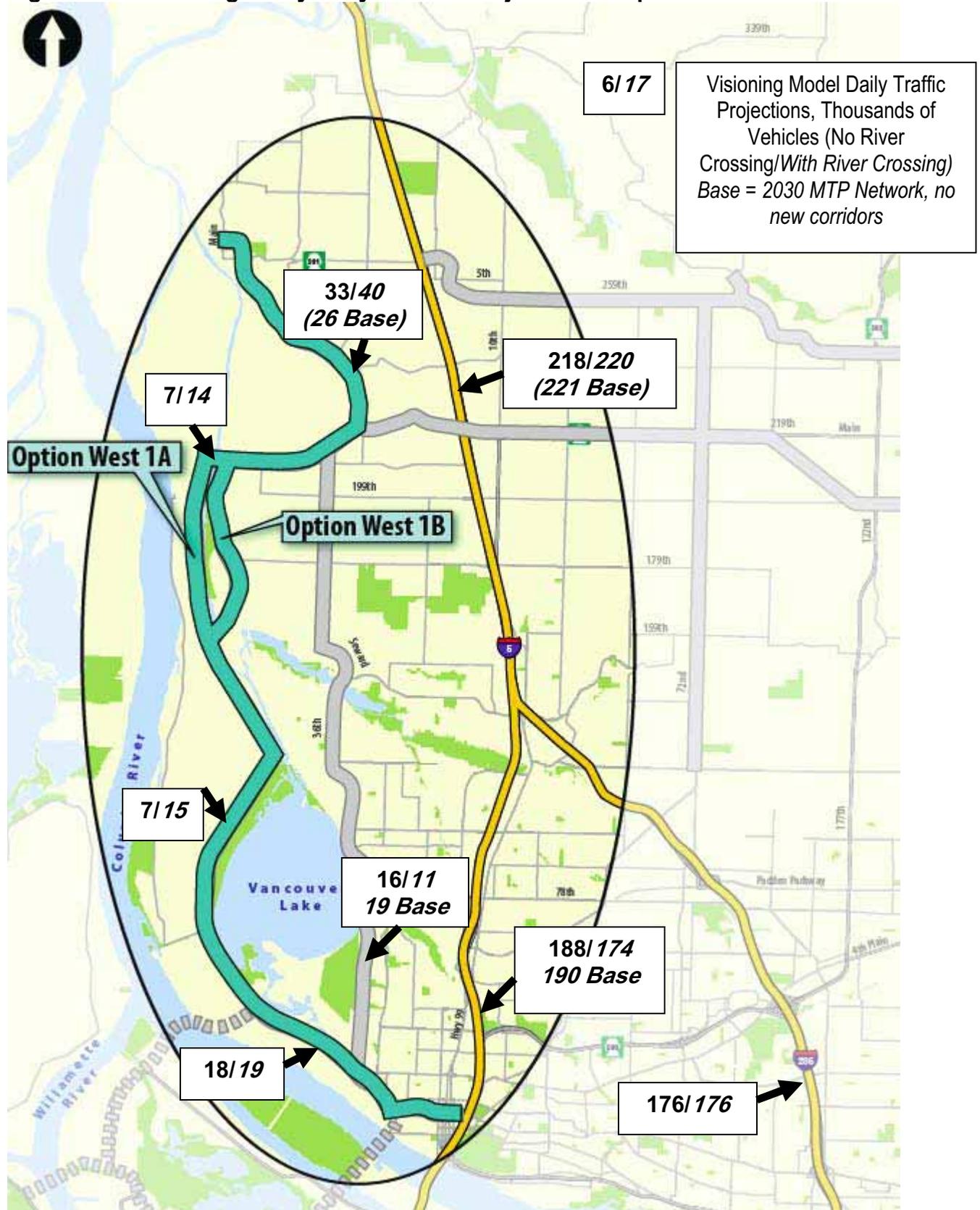


Figure B-5: Visioning Study Daily Travel Volume Projections – Option West 2

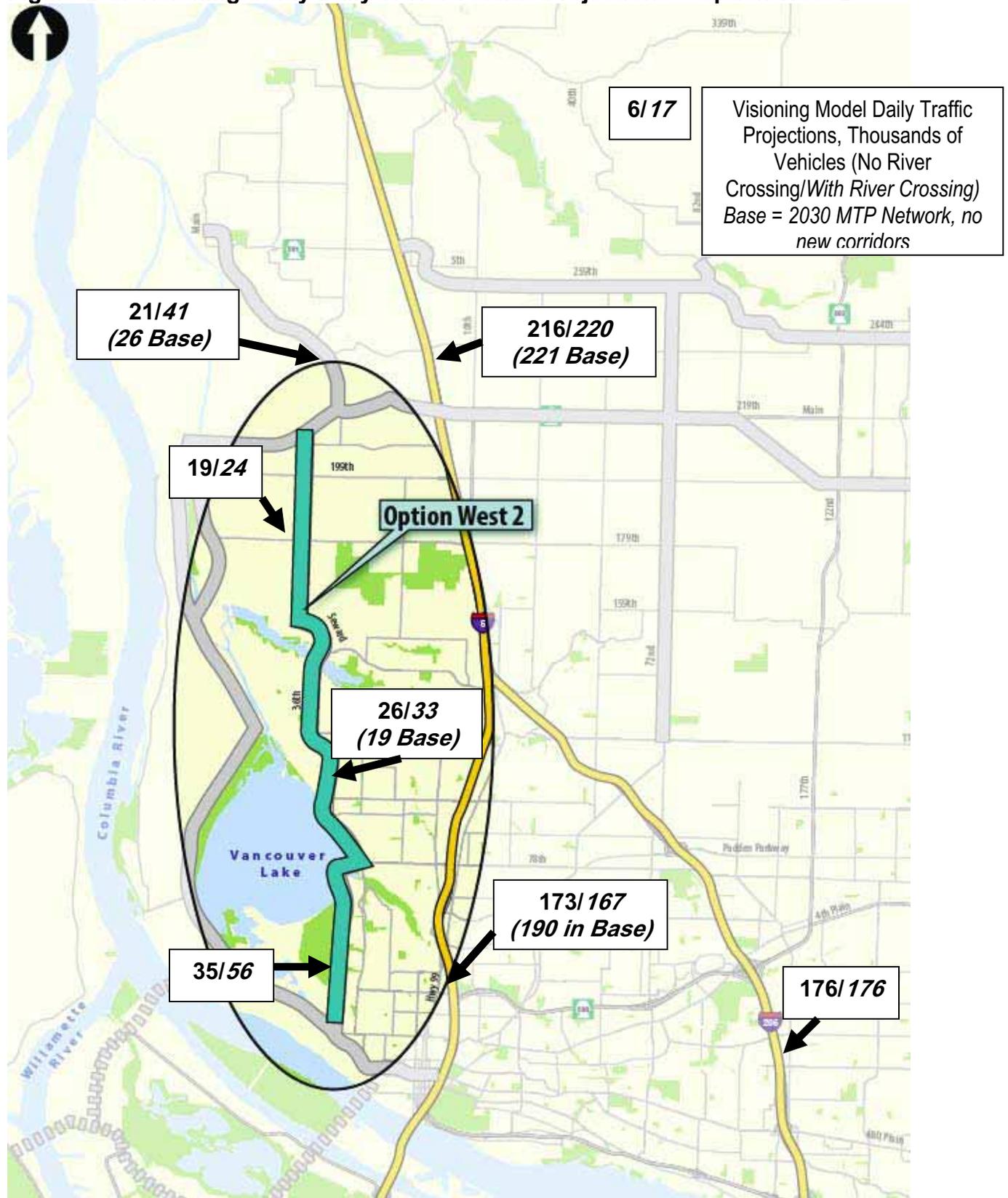


Figure B-6: Visioning Daily Travel Volume Projections – Option East 1 and 3



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



Figure B-8: Trip Length Summaries

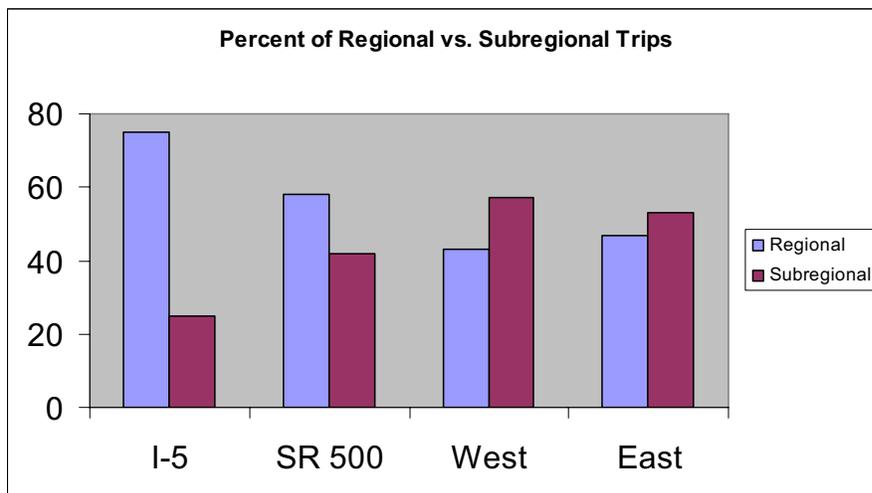
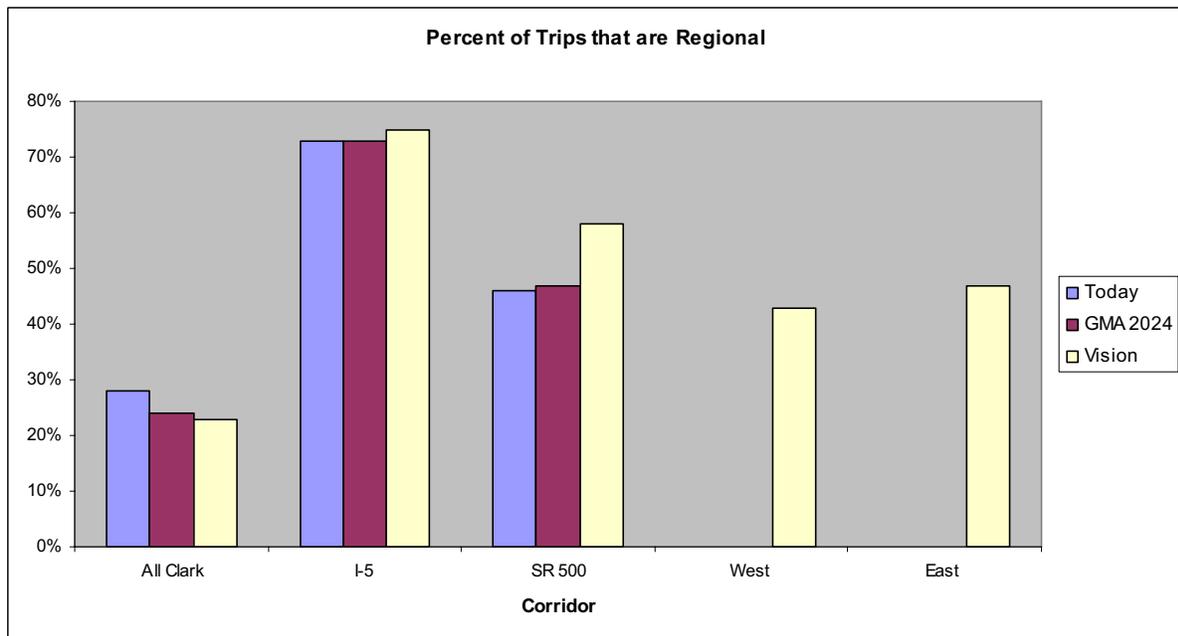
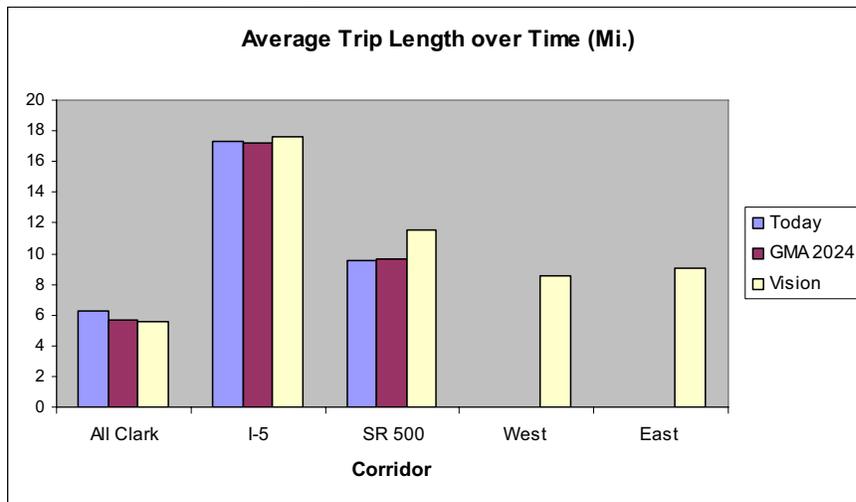


Figure B-9: New River Crossing Travel Volume Projections

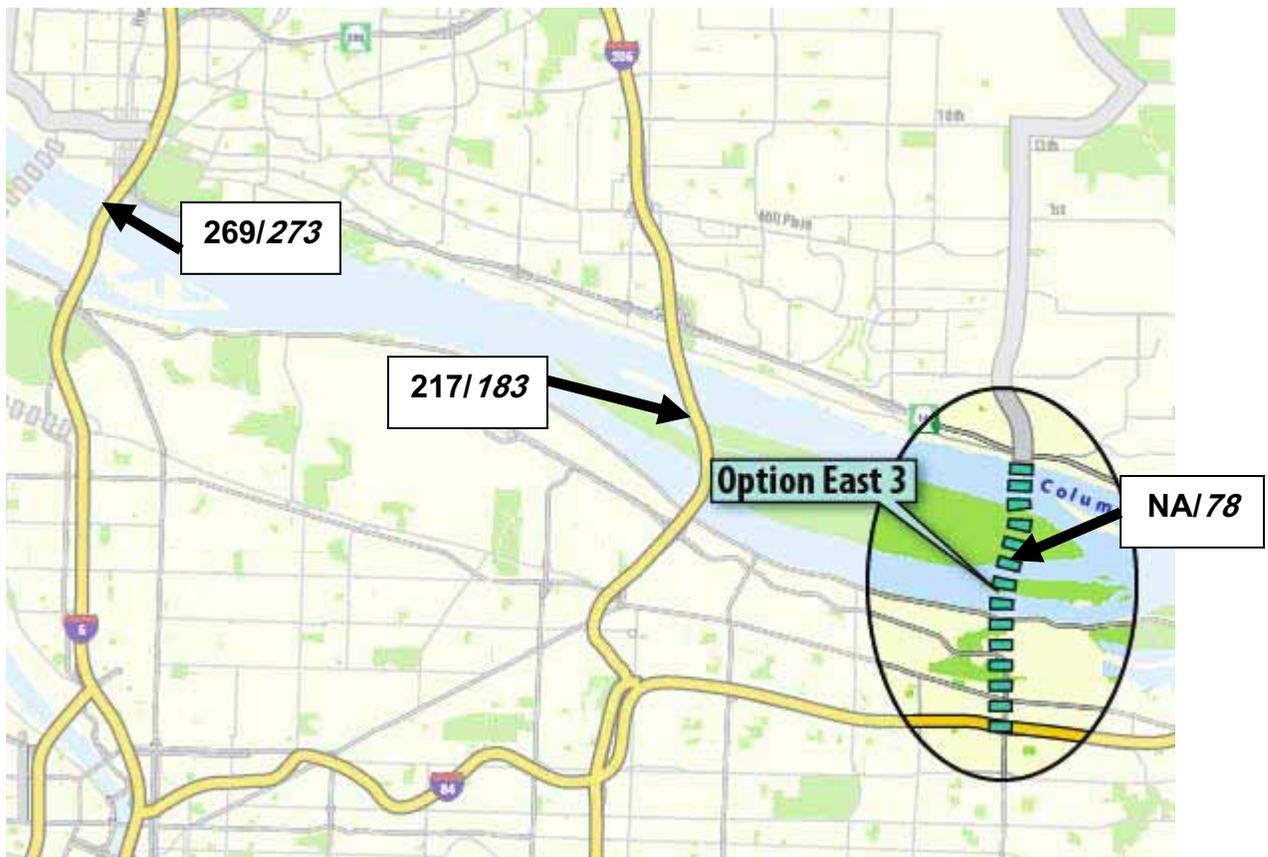
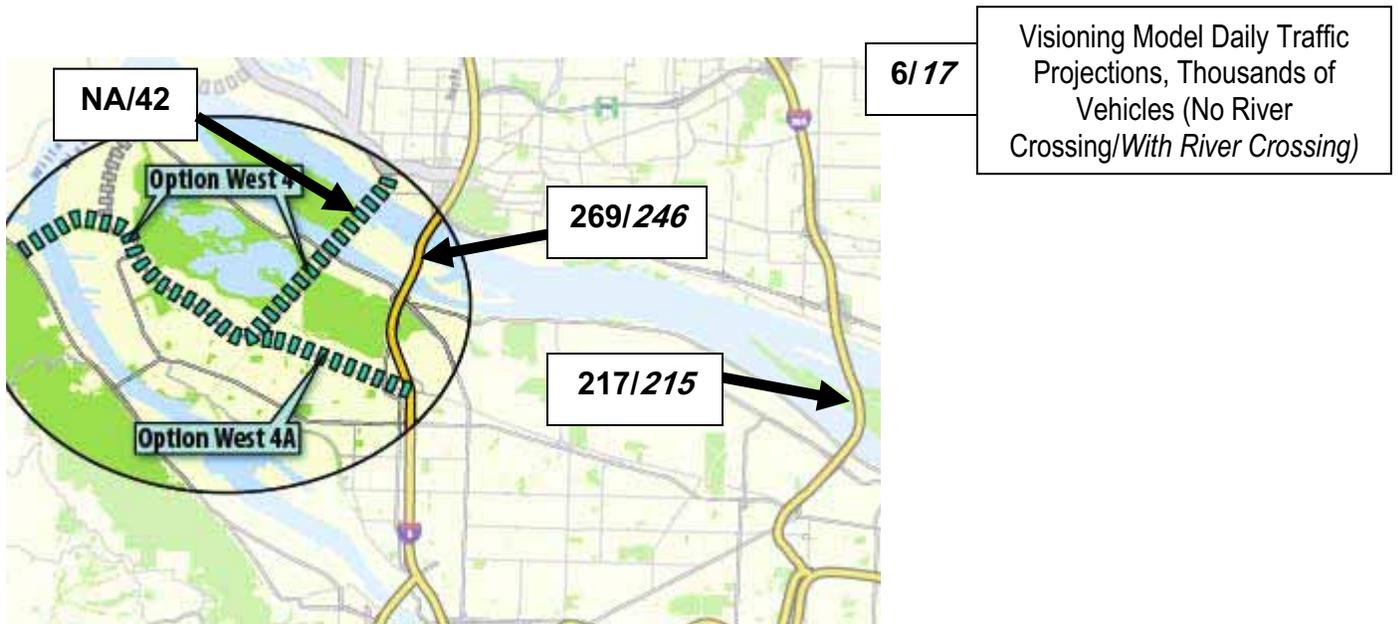


Figure B-10: West New River Crossing Select Link Trip Summary

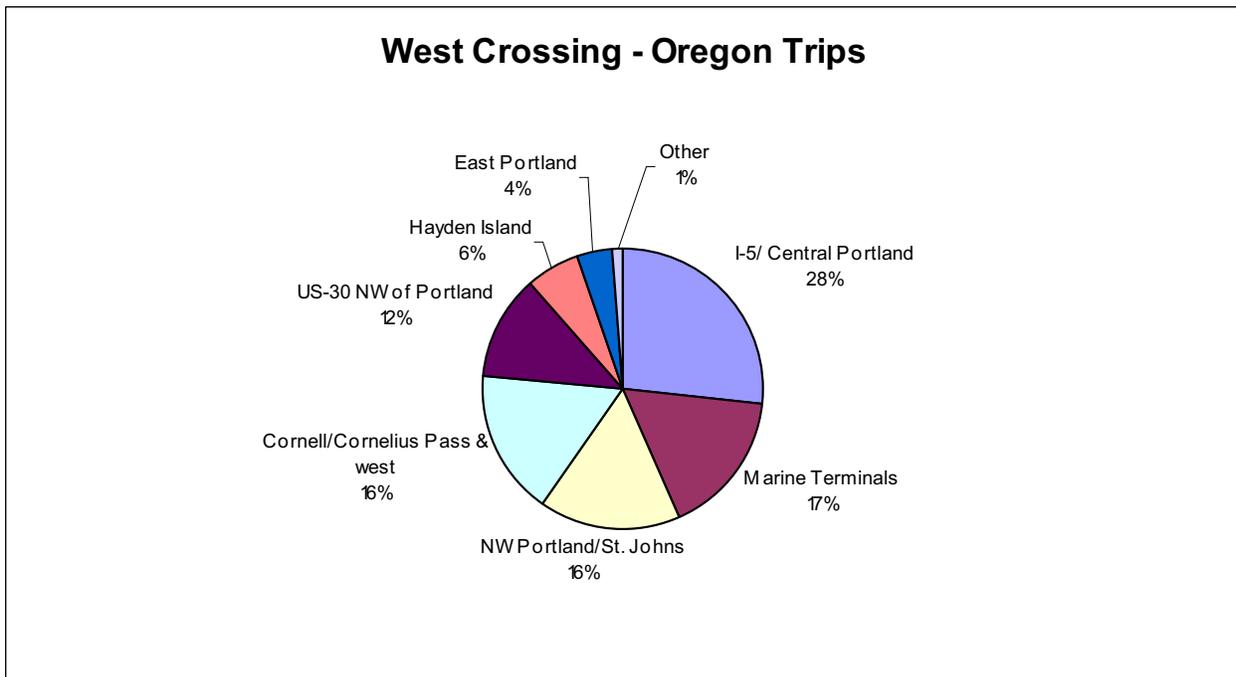
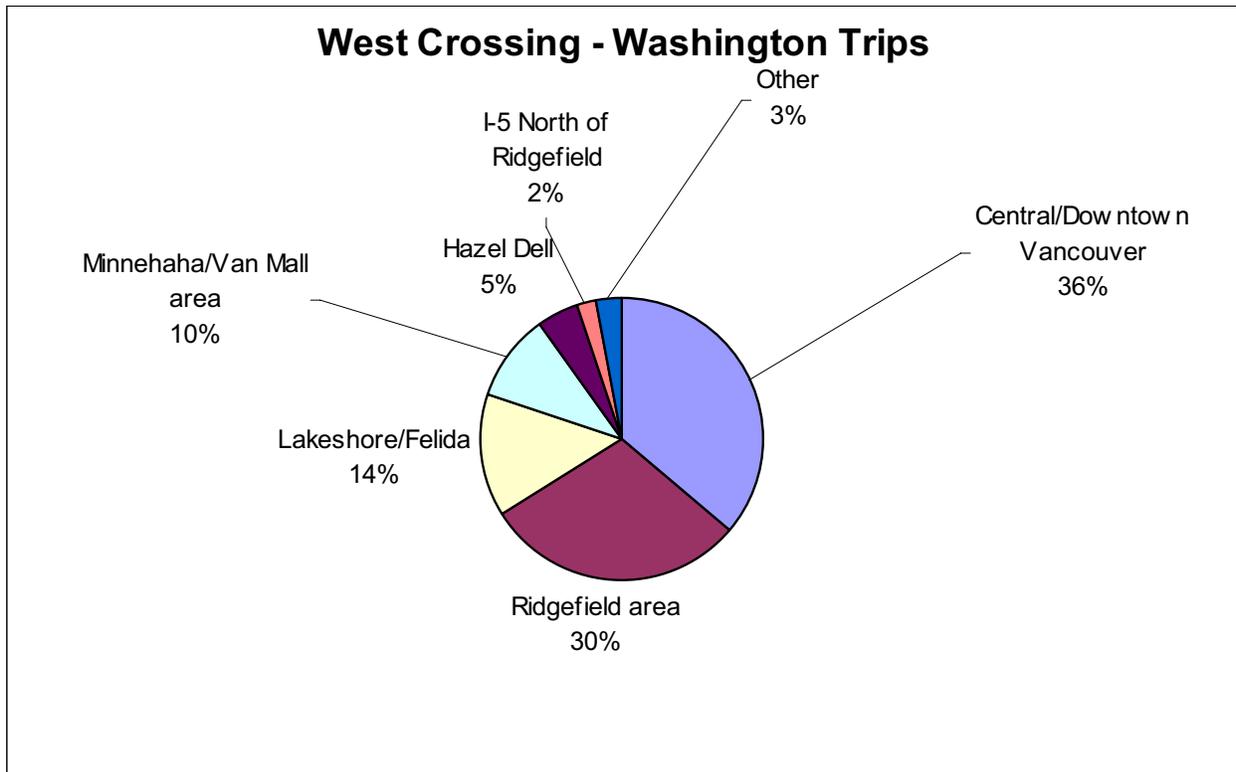
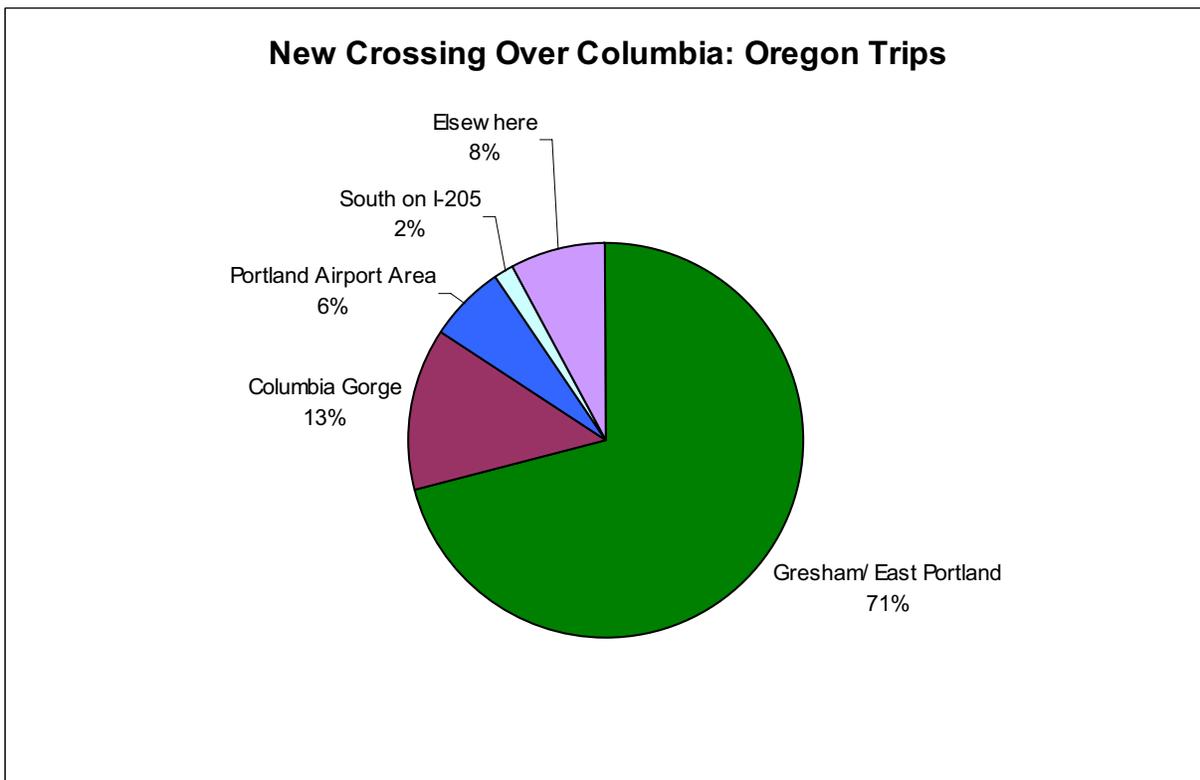
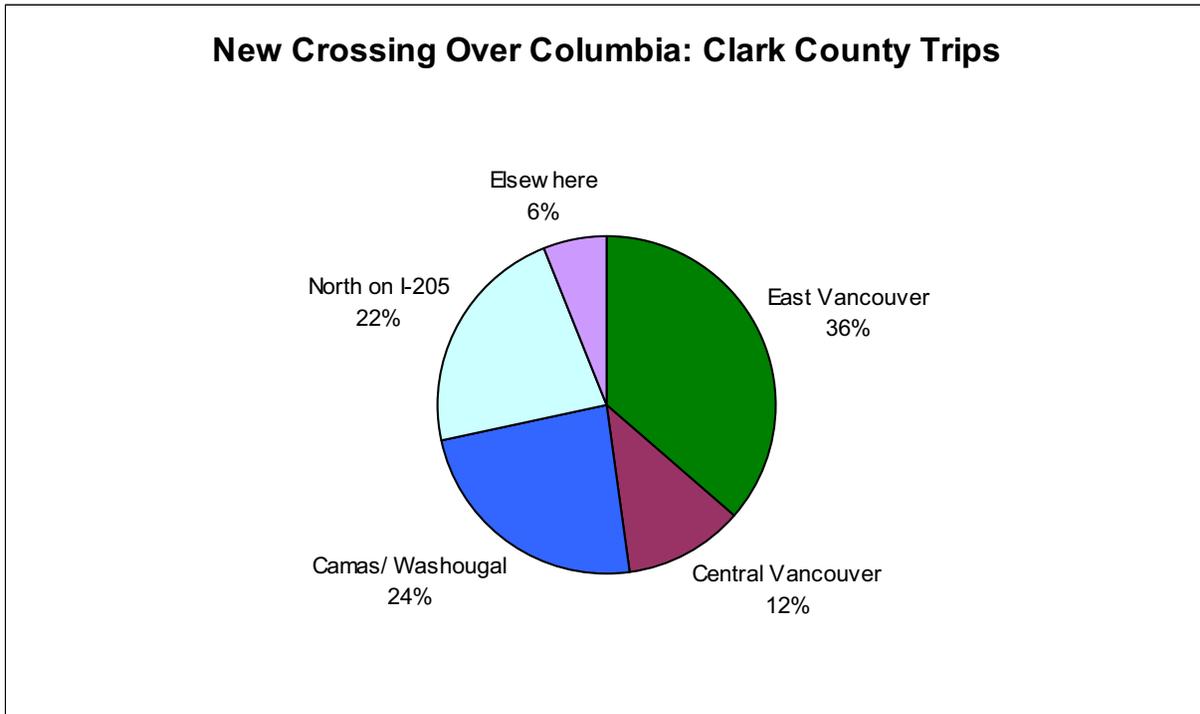


Figure B-11: East New River Crossing Select Link Trip Summary

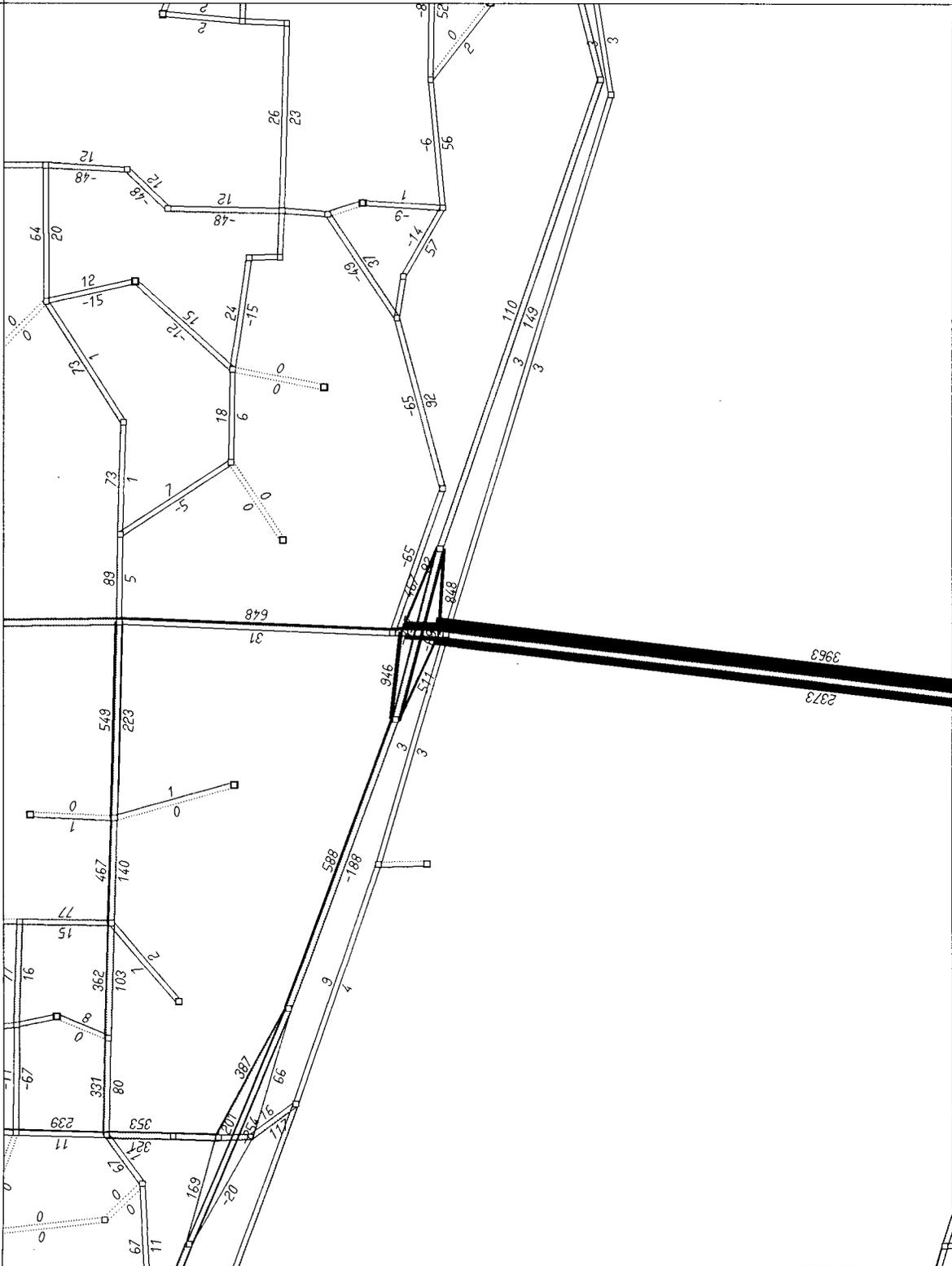


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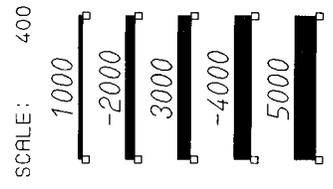
Figure B-13: New River Crossing Travel Model Plots

emme/2

AUTO VOLUMES
DIFFERENCE SCENARIO 9910 - SCENARIO 9900



DIFFERENCE:
9910 - 9900
LINKS:
all



WINDOW:
213.18/17.1613
216.56/19.6993

07-07-17 08:49
MODULE: 6.13
RTCVANC:mh

EMME/2 PROJECT: RTC Corridor Visioning Study
SCENARIO 9910: V50 Net with East Bridge - v50pm1veh_eb - 929z
SCENARIO 9900: V50 Net - v50pm1veh - 929z

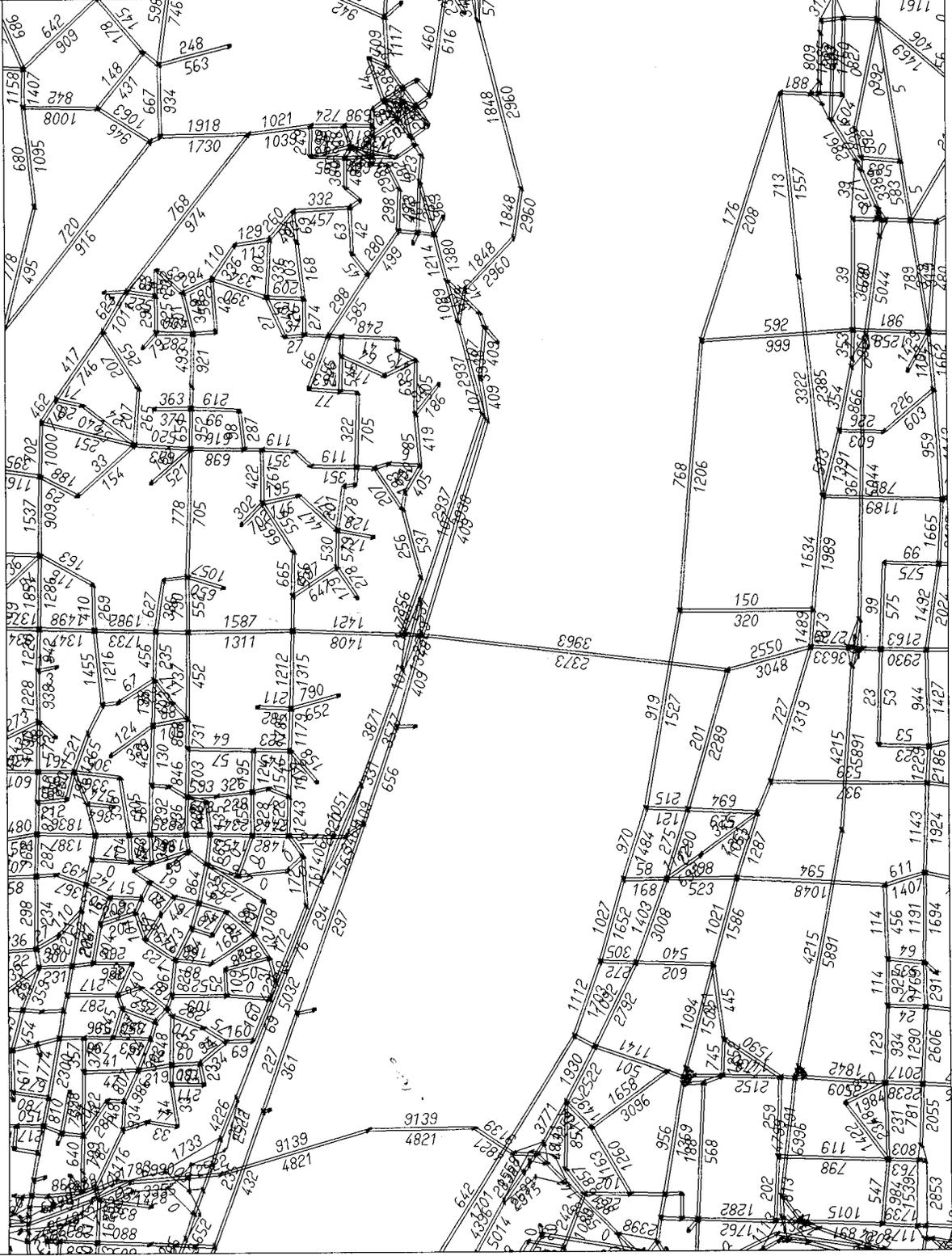
em92

AUTO VOLUMES

LINKS:
THRESHOLD:
LOWER: -*****
UPPER: *****

WINDOW:
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07-07-17 08:50
MODULE: 6.12
RTC/VANC.....mh

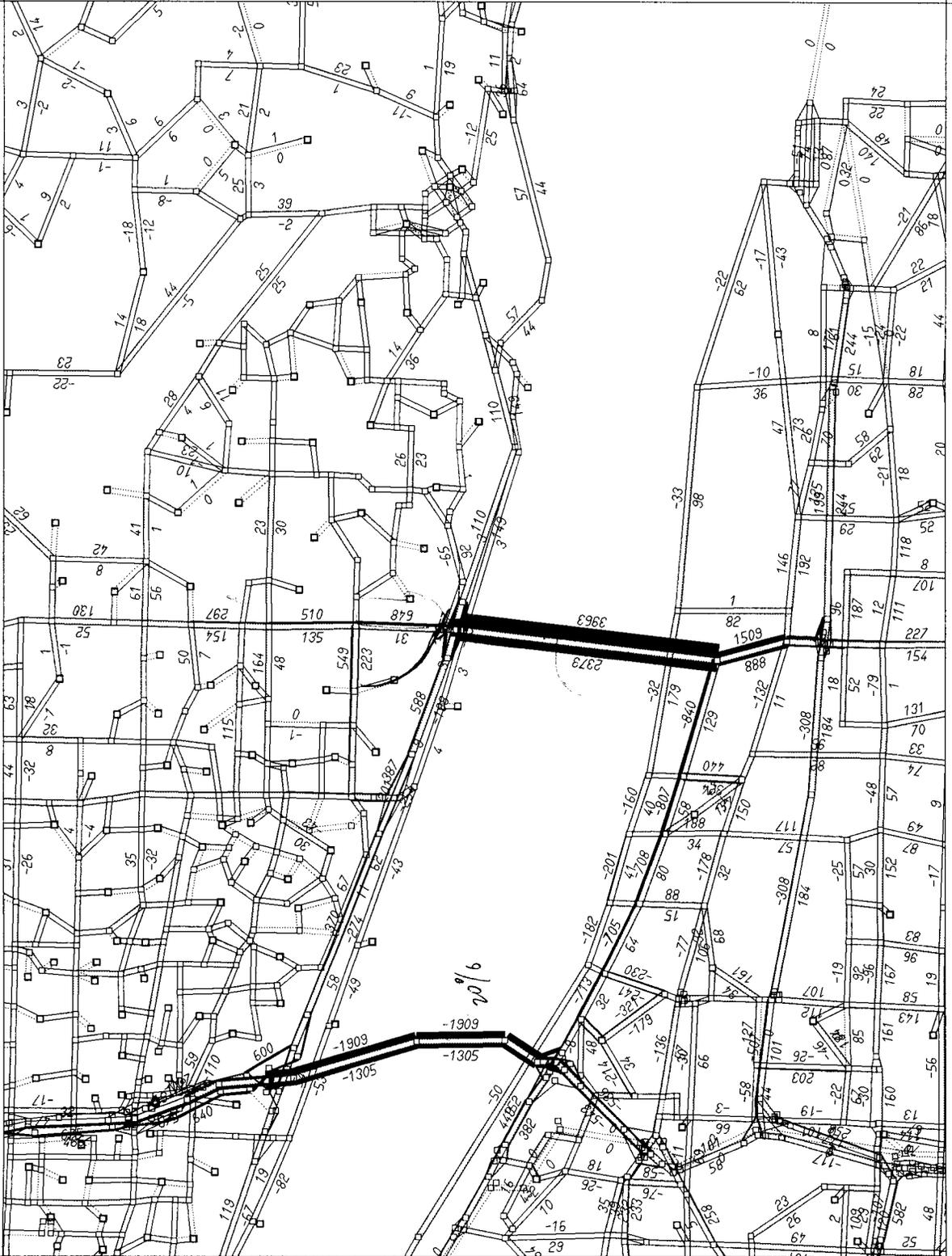


EMME/2 PROJECT: RTC Corridor Visioning Study
SCENARIO 9910: V50 Net with East Bridge - v50pm1veh_eb - 929z

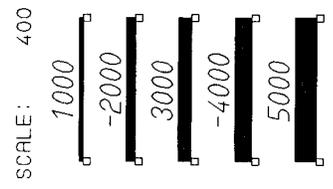
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AUTO VOLUMES

DIFFERENCE SCENARIO 9910 - SCENARIO 9900



DIFFERENCE:
9910 - 9900
LINKS:
all



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MODULE: 6.13
RTC\AVANC.....mh

EMME/2 PROJECT: RTC Corridor Visioning Study
SCENARIO 9910: V50 Net with East Bridge - v50pm1veh_eb - 929z
SCENARIO 9900: V50 Net - v50pm1veh - 929z

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.