Using ACS Data to Adjust CTR Survey Results in the Puget Sound Region

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Overview of CTR Survey Data

The Commute Trip Reduction (CTR) survey provides detailed origin-destination and mode-choice information for commuters in Washington State. This rich dataset is very useful for establishing motorized and non-motorized commuters travel patterns for travel demand modeling and has been applied on several projects. The dataset stems from a 1991 law requiring large employers to promote alternatives to driving alone, and has achieved considerable success in reducing the share of drive-alone commuters. However, the CTR data tends to overstate transit ridership since only large employers are required to fill out the survey, and they are often located in high-transit areas. Furthermore, the CTR data is a sample and is not expanded to represent regional population characteristic.

For these reasons, ACS data was used to estimate district-level transit shares, which were compared to the CTR data. An algorithm was developed to attenuate the CTR transit shares which are higher than the corresponding district transit share.

Daily Home-to-Work Transit Mode Shares, ACS Data

District	Snohomish County	North King County	East King County	South King County	Pierce County	Cross-Sound	Total
Snohomish County	4%	19%	4%	3%	5%	14%	**8%**
North King County	3%	27%	13%	6%	6%	37%	**21%**
East King County	2%	22%	5%	2%	0%	11%	**8%**
South King County	3%	18%	5%	4%	2%	8%	**8%**
Pierce County	0%	25%	6%	2%	3%	0%	**4%**
Cross-Sound	18%	56%	23%	6%	2%	3%	**8%**
Total	**3%**	**25%**	**6%**	**4%**	**3%**	**3%**	**10%**

❑ *Source: ACS 5-year Estimates, 2006-2010*
❑ *Green cells reflect higher confidence level measurements*

Daily Home-to-Work Transit Mode Shares, CTR Data

District	Snohomish County	North King County	East King County	South King County	Pierce County	Cross-Sound	Total
Snohomish County	2%	40%	10%	5%	6%	10%	**18%**
North King County	4%	40%	19%	6%	13%	27%	**32%**
East King County	2%	39%	8%	2%	4%	7%	**17%**
South King County	4%	38%	8%	3%	2%	9%	**18%**
Pierce County	4%	60%	13%	9%	3%	3%	**13%**
Cross-Sound	5%	72%	6%	4%	2%	---	**17%**
Total	**3%**	**44%**	**10%**	**5%**	**2%**	**8%**	**20%**

❑ *Source: CTR Survey Data, 2007-2012*
❑ *Green cells reflect higher confidence level measurements*

Recommendations

❑ Although unique to Washington State, the Commute Trip Reduction Law survey data is a rich data source
❑ Transit mode shares are slightly over-represented in the dataset, but may be attenuated using ACS data
❑ There is a strong need for a general methodology for aggregation of error, particularly for partially overlapping geographies
❑ New tools to visualize matrices such as demand flows in a meaningful manner show promise, but more work is needed
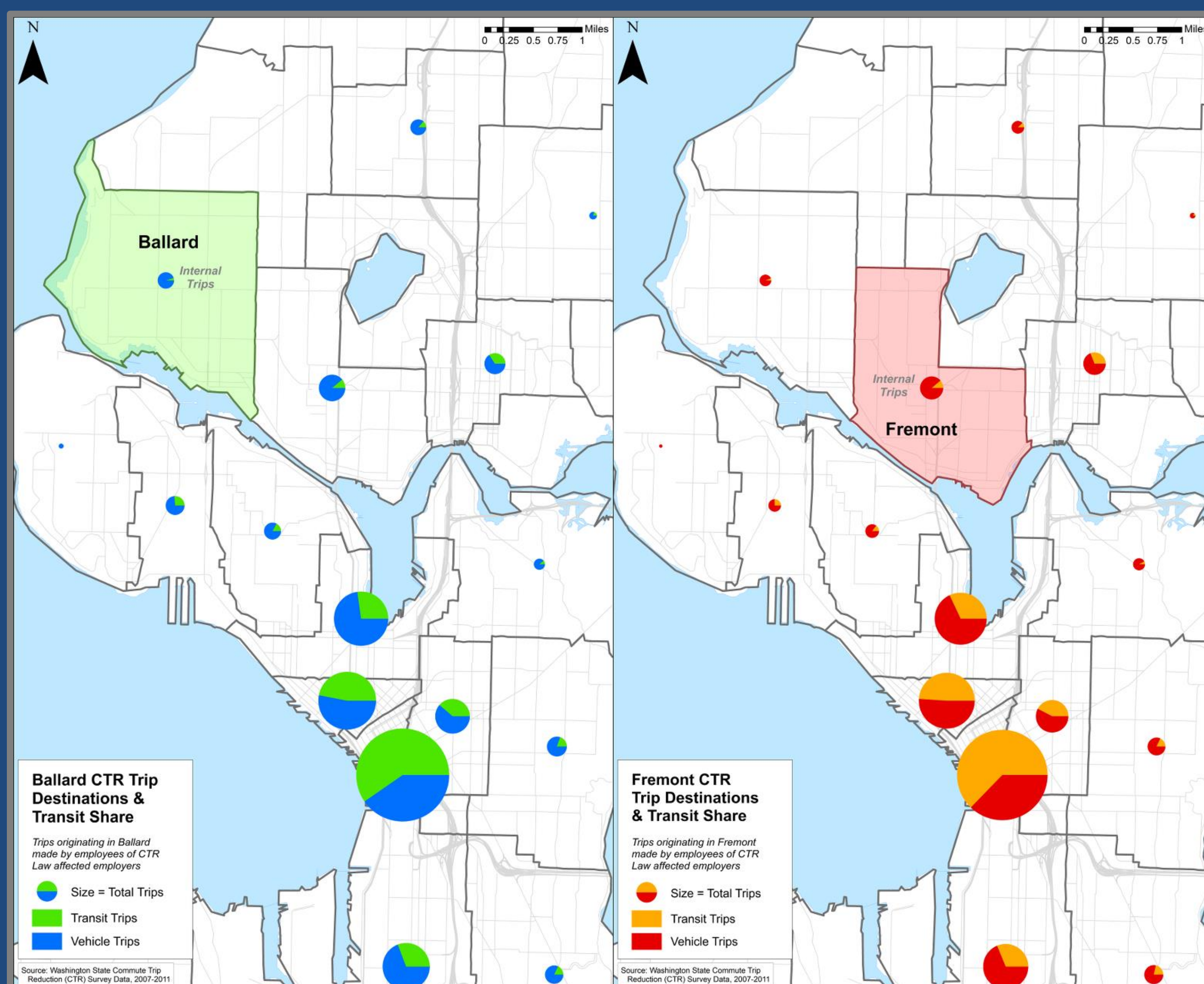
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Example CTR Mode Shares for Ballard and Fremont

Ballard CTR Trip Destinations & Transit Share — Trips originating in Ballard made by employees of CTR Law affected employers. Size = Total Trips; Transit Trips; Vehicle Trips. Source: Washington State Commute Trip Reduction (CTR) Survey Data, 2007-2011

Fremont CTR Trip Destinations & Transit Share — Trips originating in Fremont made by employees of CTR Law affected employers. Size = Total Trips; Transit Trips; Vehicle Trips. Source: Washington State Commute Trip Reduction (CTR) Survey Data, 2007-2011