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Multicultural Behavior Study

GIS Map and ACS Data:
Analysis & Discussion

August 14, 2014

Goals & Objectives

- Formulate educated guesses and establish what our assumptions are for developing the multicultural behavior study.
  - Review and Discuss GIS Map Analysis
  - Review and Discuss American Community Survey Data Analysis

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GIS Mapping –
WM UTC Customers + Census Tracts

Every WM UTC Customers' addresses were matched up with its corresponding Census Tract.

- Census Tract are small, relatively permanent statistical subdivisions of a county.
- The primary purpose of census tracts is to provide a stable set of geographic units for the presentation of statistical data.
- Census tracts generally have a population size between 1,200 and 8,000 people, with an optimum size of 4,000 people.
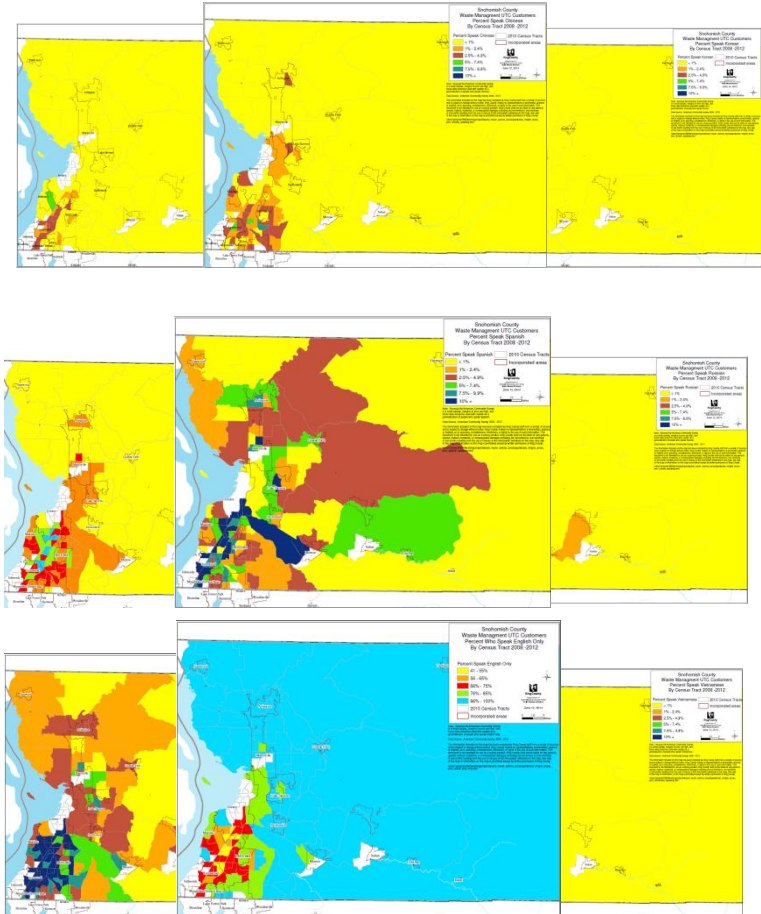
WM UTC Customer #xxx
Address: xxx St. Auburn, 98001

Census Tract = 299.01

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GIS Mapping – WM UTC Customers + Census Tracts + Language Proficiency

Language Proficiency data by Census Tracts was used to create the GIS map of Language Spoken by Census Tracts.

- WM UTC Customers per 2010 Census Tracts
- WM UTC Customers % Who Speak English Only by Census Tracts 2008-2012
- WM UTC Customers % Who Speak English Only by Census Tracts 2008-2012
- WM UTC Customers % Who Speak Spanish, Chinese, Vietnamese, Korean, Russian, African Languages by Census Tracts 2006-2010

Result: Gives a visual representation of geographic pockets with levels of concentration where languages other than English is spoken and UTC WM Customers reside.

GIS Mapping – WM UTC Customers + Census Tracts + Language Proficiency

- What is the exact # of WM UTC Customers in each Census Tract?

- Which cities are covered within each Census Tract?

- Can we arrange the data to answer which geographic location has the:

  - Largest # of WM UTC customers?

  - Largest % of English Only Speakers?

  - Largest % of Other Languages Spoken?

  - Largest % of Spanish, Chinese, Vietnamese, Korean, Russian & African Languages spoken?

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FINDINGS FROM GIS MAPS

Top 10 Census Tracts, corresponding cities with the highest # of WM UTC Customers:

#	Tract #	City / Cities	# WM UTC Customers
1	525.03	Lake Stevens (1493) / Everett (658) / Hartford (2)	2,153
2	521.15	Everett (1449) / Snohomish (638)	2,087
3	521.18	Snohomish (1868) / Everett (210) / Bothell (1)	2,079
4	416.08	Everett (1647) / Snohomish (404) / Mill Creek (1)	2,052
5	519.05	Lynnwood (1472) / Brier (3)	1,908
6	519.15	Lynnwood (1472) / Bothell (384) / Brier (3)	1,859
7	528.06	Marysville	1,844
8	528.04	Marysville (1782) / Arlington (2)	1,784
9	520.03	Bothell (1371) / Snohomish (254) / Everett (77) / Mill Creek (69)	1,771
10	420.05	Mukilteo (1262) / Edmonds (421) / Lynnwood (28)	1,711

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FINDINGS FROM GIS MAPS

Top 10 Census Tracts, corresponding cities with the highest # of WM UTC Customers that speak English Only:

#	Tract #	City / Cities	# WM UTC Customers	% Speak English Only*
1	525.03	Lake Stevens / Everett / Hartford	2,153	86-100%
2	521.15	Everett / Snohomish	2,087	86-100%
3	528.04	Marysville / Arlington	1,784	86-100%
4	526.07	Lake Stevens / Snohomish / Everett	1,641	86-100%
5	527.06	Lake Stevens / Everett / Marysville	1,636	86-100%
6	521.08	Snohomish / Woodinville	1,634	86-100%
7	521.14	Snohomish / Everett / Bothell	1,467	86-100%
8	519.14	Brier / Bothell / Lynnwood	1,371	86-100%
9	532.02	Stanwood	1,204	86-100%
10	534.00	Arlington / Stanwood	1,169	86-100%

*The % range is for the entire Census Tract where both WM UTC customers as well as non-WM customers reside.

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FINDINGS FROM GIS MAPS

Top 10 Census Tracts, corresponding cities with the highest # of WM UTC Customers that speak Language Other than English:

#	Tract #	City / Cities	# WM UTC Customers	% Speak Other Language*
1	418.11	Lynnwood / Everett	1,347	46-60%
2	518.02	Lynnwood	1,100	46-60%
3	419.05	Everett	381	46-60%
4	419.04	Everett	36	46-60%
5	418.06	Everett	1	46-60%
6	520.03	Bothell / Snohomish / Everett / Mill Creek	1771	31-45%
7	417.03	Lynnwood / Everett / Bothell / Mill Creek	1650	31-45%
8	419.01	Everett / Mukilteo Lynnwood	939	31-45%
9	514.00	Lynnwood	681	31-45%
10	519.28	Lynnwood/ Bothell / Mill Creek	671	31-45%

*The % range is for the entire Census Tract where both WM UTC customers as well as non-WM customers reside.

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FINDINGS FROM GIS MAPS

Top 10 Census Tracts, corresponding cities with the highest # of WM UTC Customers that speak Spanish:

#	Tract #	City / Cities	# WM UTC Customers	% Speak Spanish
1	528.06	Marysville	1844	10%+
2	417.03	Lynnwood/Everett/Bothell/Mill Creek	1650	10%+
3	418.11	Lynnwood/Everett	1347	10%+
4	526.04	Lake Stevens/Everett	1168	10%+
5	522.06	Snohomish/Monroe	710	10%+
6	514.00	Lynnwood	681	10%+
7	519.28	Lynnwood/Bothell/Mill Creek	671	10%+
8	418.12	Lynnwood/Everett	632	10%+
9	518.03	Lynnwood	445	10%+
10	521.05	Snohomish/Everett	424	10%+

*The % range is for the entire Census Tract where both WM UTC customers as well as non-WM customers reside.

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FINDINGS FROM GIS MAPS

Top 10 Census Tracts, corresponding cities with the highest # of WM UTC Customers that speak Chinese:

#	Tract #	City / Cities	# WM UTC Customers	% Speak Chinese*
1	519.23	Bothell / Mill Creek	1,366	7.5-9.9%
2	517.01	Lynnwood	805	5-7.4%
3	519.28	Lynnwood / Bothell / Mill Creek	671	5-7.4%
4	519.05	Lynnwood/Brier	1908	2.5-4.9%
5	520.03	Bothell/Snohomish/Everett/Mill Creek	1771	2.5-4.9%
6	420.01	Mukilteo	1659	2.5-4.9%
7	527.06	Lake Stevens/Everett/Marysville	1636	2.5-4.9%
8	520.07	Bothell/Mill Creek	1521	2.5-4.9%
9	418.11	Lynnwood/Everett	1347	2.5-4.9%
10	519.24	Bothell/Mill Creek	1301	2.5-4.9%

*The % range is for the entire Census Tract where both WM UTC customers as well as non-WM customers reside.

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FINDINGS FROM GIS MAPS

Top 10 Census Tracts, corresponding cities with the highest # of WM UTC Customers that speak Vietnamese:

#	Tract #	City / Cities	# WM UTC Customers	% Speak Vietnamese
1	521.07	Bothell / Snohomish / Woodinville / Everett	1,236	7.5-9.9%
2	519.22	Bothell / Lynnwood / Mill Creek	1,103	7.5-9.9%
3	518.02	Lynnwood	1100	5-7.4%
4	419.01	Everett/Mukilteo/Lynnwood	939	5-7.4%
5	517.01	Lynnwood	805	5-7.4%
6	519.28	Lynnwood/Bothell/Mill Creek	671	5-7.4%
7	418.06	Everett	1	5-7.4%
8	519.05	Lynnwood / Brier	1,908	2.5-4.9%
9	519.05	Lynnwood/Brier	1908	2.5-4.9%
10	528.06	Marysville	1844	2.5-4.9%

*The % range is for the entire Census Tract where both WM UTC customers as well as non-WM customers reside.

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FINDINGS FROM GIS MAPS

Top 10 Census Tracts, corresponding cities with the highest # of WM UTC Customers that speak Korean:

#	Tract #	City / Cities	# WM UTC Customers	% Speak Korean*
1	420.05	Mukilteo / Edmonds / Lynnwood	1,711	10%+
2	420.06	Mukilteo	514	10%+
3	520.03	Bothell / Snohomish / Everett / Mill Creek	1,771	7.5-9.9%
4	521.07	Bothell / Snohomish / Woodinville / Everett	1,236	5-7.4%
5	519.05	Lynnwood / Brier	1908	5-7.4%
6	519.27	Bothell/Lynnwood/Mill Creek	1483	5-7.4%
7	519.24	Bothell/Mill Creek	1301	5-7.4%
8	521.07	Bothell/Snohomish/Woodinville/Everett	1236	5-7.4%
9	518.02	Lynnwood	1100	5-7.4%
10	520.06	Bothell/Mill Creek	634	5-7.4%

*The % range is for the entire Census Tract where both WM UTC customers as well as non-WM customers reside.

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FINDINGS FROM GIS MAPS

Top 10 Census Tracts, corresponding cities with the highest # of WM UTC Customers that speak Russian:

#	Tract #	City / Cities	# WM UTC Customers	% Speak Russian
1	419.05	Everett	381	7.5-9.9%
2	418.08	Everett	369	5-7.4%
3	418.10	Everett	130	5-7.4%
4	521.18	Snohomish/Everett/Bothell	2079	2.5-4.9%
5	417.03	Lynnwood/Everett/Bothell/Mill Creek	1650	2.5-4.9%
6	416.05	Everett	1400	2.5-4.9%
7	519.23	Bothell/Mill Creek	1366	2.5-4.9%
8	518.04	Lynwood/Everett	1100	2.5-4.9%
9	417.04	Everett/Bothell/Lynnwood/Mill Creek	606	2.5-4.9%
10	413.01	Mukilteo	527	2.5-4.9%

*The % range is for the entire Census Tract where both WM UTC customers as well as non-WM customers reside.

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FINDINGS FROM GIS MAPS

Top 10 Census Tracts, corresponding cities with the highest # of WM UTC Customers that speak African Language:

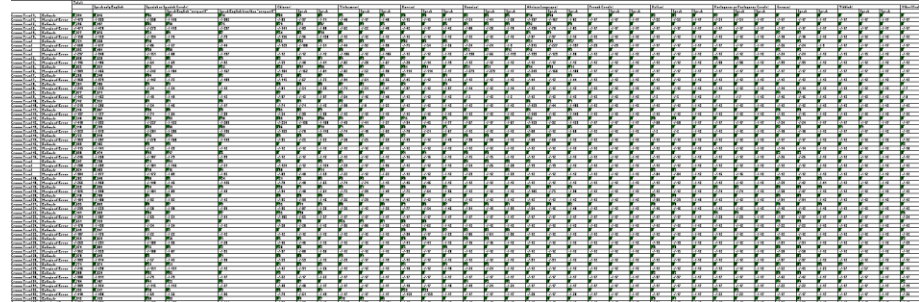| #	Tract #	City / Cities	# WM UTC Customers	% Speak African Language*
1	419.01	Everett / Mukilteo / Lynnwood	939	5-7.4%
2	418.11	Lynnwood/Everett	1347	2.5-4.9%
3	518.02	Lynnwood	1100	2.5-4.9%
4	518.04	Lynnwood/Everett	1100	2.5-4.9%
5	517.02	Lynnwood	982	2.5-4.9%
6	417.01	Everett	828	2.5-4.9%
7	514.00	Lynnwood	681	2.5-4.9%
8	518.03	Lynnwood	445	2.5-4.9%
9	418.10	Everett	130	2.5-4.9%
10	509.00	Edmonds	100	2.5-4.9%

*The % range is for the entire Census Tract where both WM UTC customers as well as non-WM customers reside.

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DISCUSSION SESSION #1:

WHAT TRENDS DO WE OBSERVE FROM THESE GIS MAPS?

Additional ACS Data Analysis

What additional data are available for us to answer the following questions:

- Which are the top 7 languages spoken in Snohomish County? Are they the same in WM UTC Census Tracts?

- Is the demographic residing within the UTC Census Tracts fairly similar to Snohomish County as a whole?

- Can we examine the different level of language proficiency within UTC Census Tracts and determine which languages are preferred other than English?

Additional data was pulled from American Community Survey 2008-2012 to answer these questions.

Process to Obtaining the Data

1. Searched and obtained the 2008-2012 American Community Survey 5-Year Estimates for "LANGUAGE SPOKEN AT HOME BY ABILITY TO SPEAK ENGLISH FOR THE POPULATION 5 YEARS AND OVER - Universe: Population 5 years and over."

2. This data outlines: total population per Census Tract, # of people who speak English Only, # of people who speak [language] + English very well or English less than very well.

3. This data covers the 40 languages spoken at home by ability to speak English.

4. All Census Tracts with UTC WM Customers were highlighted in yellow.

5. The # of WM UTC Customers in each Census Tracts were added to the data for cross-referencing

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Top Languages Spoken in SC & SC WM UTC

Which are the top 7 languages spoken in Snohomish County? Are they the same in WM UTC Census Tracts?

#	Languages	# in Snohomish County	Languages	# in UTC WM
	English	544,873	English	436,201
1	Spanish	41,867	Spanish	33,140
2	Korean	9,666	Korean	8,806
3	Vietnamese	8,954	Vietnamese	8,042
4	Chinese	7,697	Chinese	6,340
5	Tagalog	7,510	Tagalog	6,023
6	Russian	5,577	Russian	4,967
7	Other Slavic Languages	4,754	Other Slavic Languages	4,011
8	African Languages	3,892	African Languages	3,217

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Snohomish County & WM UTC Similarities

Is the demographic residing within the UTC Census Tracts fairly similar to Snohomish County as a whole?

Census Tracts	Total Population	# of WM UTC Customers in SC	Speak only English	Speak Spanish	Speak Spanish and English "very well"	Speak Spanish and English less than "very well"	Speak Korean	Speak Korean and English "very well"	Speak Korean and English less than "very well"	Speak Vietnamese	Speak Vietnamese and English "very well"	Speak Vietnamese and English less than "very well"	Speak Chinese	Speak Chinese and English "very well"	Speak Chinese and English less than "very well"	Speak Tagalog	Speak Tagalog and English "very well"	Speak Tagalog and English less than "very well"	Speak Russian	Speak Russian and English "very well"	Speak Russian and English less than "very well"	Speak Other Slavic Languages	Speak Other Slavic Languages and English "very well"	Speak Other Slavic Languages and English less than "very well"	Speak African Languages	Speak African Languages and English "very well"	Speak African Languages and English less than "very well"
GRAND TOTAL	537,928	92,486	436,201	33,140	18,869	14,271	8,806	3,205	5,601	8,042	3,390	4,652	6,340	3,083	3,257	6,023	4,081	1,942	4,967	2,364	2,603	4,011	1,658	2,353	3,217	1,989	1,228
% of the population that speaks a language other than English / total population		17.19% (% of the SC UTC Census Tract population that are WM UTC Customers)	81.09%	6.16%	3.51%	2.65%	1.64%	0.60%	1.04%	1.49%	0.63%	0.86%	1.18%	0.57%	0.61%	1.12%	0.76%	0.36%	0.92%	0.44%	0.48%	0.75%	0.31%	0.44%	0.60%	0.37%	0.23%
% of the population that speaks a language and English very well or less than very well / total population					56.94%	43.06%		36.40%	63.60%		42.15%	57.85%		48.63%	51.37%		67.76%	32.24%		47.59%	52.41%		41.34%	58.66%		61.83%	38.17%

Census Tracts	Total Population	# of WM UTC Customers in SC	Speak only English	Speak Spanish	Speak Spanish and English "very well"	Speak Spanish and English less than "very well"	Speak Korean	Speak Korean and English "very well"	Speak Korean and English less than "very well"	Speak Vietnamese	Speak Vietnamese and English "very well"	Speak Vietnamese and English less than "very well"	Speak Chinese	Speak Chinese and English "very well"	Speak Chinese and English less than "very well"	Speak Tagalog	Speak Tagalog and English "very well"	Speak Tagalog and English less than "very well"	Speak Russian	Speak Russian and English "very well"	Speak Russian and English less than "very well"	Speak Other Slavic Languages	Speak Other Slavic Languages and English "very well"	Speak Other Slavic Languages and English less than "very well"	Speak African Languages	Speak African Languages and English "very well"	Speak African Languages and English less than "very well"
GRAND TOTAL	667,372	92,486	544,873	41,867	23,817	18,050	9,666	3,642	6,024	8,954	3,608	5,346	7,697	3,659	4,038	7,510	4,994	2,516	5,577	2,572	3,005	4,754	1,808	2,946	3,892	2,300	1,592
% of the population that speaks a language other than English / total population		13.86% (% of the SC population that are WM UTC Customers)	81.64%	6.27%	3.57%	2.70%	1.45%	0.55%	0.90%	1.34%	0.54%	0.80%	1.15%	0.55%	0.61%	1.13%	0.75%	0.38%	0.84%	0.39%	0.45%	0.71%	0.27%	0.44%	0.58%	0.34%	0.24%
% of the population that speaks a language and English very well or less than very well / total population					56.89%	43.11%		37.68%	62.32%		40.29%	59.71%		47.54%	52.46%		66.50%	33.50%		46.12%	53.88%		38.03%	61.97%		59.10%	40.90%

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Snohomish County & WM UTC Similarities

Can we examine the different level of language proficiency within UTC Census Tracts and determine which languages are preferred other than English?

Census Tracts	Total Population	City Names	# of WM UTC Customers in SC	Speak only English	Speak Spanish	Speak Spanish and English "very well"	Speak Spanish and English less than "very [well]"	Speak Korean	Speak Korean and English "very well"	Speak Korean and English less than "very [well]"	Speak Vietnamese
528.04	6,666	Marysville (1782)/ Arlington (2)	1784	6,221	135	122	13	62	46	16	0
9400.01	6,375	Marysville (1098)/ Tulalip (43)	1141	5,829	157	113	44	15	0	15	17
521.08	5,962	Snohomish (1631)/ Woodinville (3)	1634	5,711	68	68	0	0	0	0	0
521.15	6,556	Everett (1449)/ Snohomish (638)	2087	5,672	297	189	108	18	0	18	29
527.05	6,514	Lake Stevens (323)/ Arlington (17)/ Marysville (3)/ Everett (2)	345	5,608	432	270	162	27	27	0	124
535.04	6,071	Arlington	158	5,598	360	187	173	0	0	0	0
519.15	6,955	Lynnwood (1472)/ Bothell (384)/ Brier (3)	1859	5,405	601	315	286	216	79	137	46
525.03	6,052	Lake Stevens (1493)/ Everett (658)/ Hartford (2)	2153	5,387	318	274	44	0	0	0	12
533.01	5,648	Stanwood	96	5,386	87	71	16	0	0	0	0
519.05	7,525	Lynnwood (1878)/ Brier (30)	1908	5,357	376	167	209	405	24	381	265
534.00	5,426	Arlington (1102)/ Stanwood (67)	1169	5,357	37	23	14	0	0	0	0
526.05	5,433	Lake Stevens	69	5,207	70	70	0	0	0	0	0
521.18	6,170	Snohomish (1868)/ Everett (210)/ Bothell (1)	2079	5,148	100	54	46	91	52	39	0
522.07	5,622	Monroe	136	5,140	292	227	65	0	0	0	0
528.06	6,572	Marysville	1844	5,138	664	402	262	69	21	48	189
533.02	5,235	Stanwood (1043)/ Arlington (78)/ Silvana (1)	1122	5,092	24	10	14	0	0	0	0
538.03	5,438	Gold Bar (342)/ Sultan (23)/ Monroe (18)	383	4,959	329	223	106	0	0	0	0
536.02	5,178	Granite Falls (532) / Snohomish (432)	964	4,952	135	110	25	0	0	0	0
513.00	6,241	Mountlake Terrace (4)/ Bothell (2)/ Brier (1)	7	4,937	158	139	19	295	112	183	56
535.06	5,071	Arlington (974)/ Granite Falls (80)	1054	4,765	184	124	60	27	0	27	0
526.07	5,290	Lake Stevens (1063)/ Snohomish (306)/ Everett (272)	1641	4,746	247	199	48	0	0	0	26
420.01	5,611	Mukilteo	1659	4,727	186	133	53	0	0	0	41
520.04	5,482	Lynnwood	1	4,703	14	14	0	56	16	40	57
416.08	5,821	Everett (1647)/ Snohomish (404)/ Mill Creek (1)	2052	4,640	77	0	77	0	0	0	97
522.03	5,086	Snohomish (451)/ Monroe (1)	452	4,578	216	191	25	0	0	0	164
519.25	5,610	Bothell (893)/ Woodinville (8)	901	4,457	68	31	37	103	20	83	49
520.03	6,966	Bothell (1371)/ Snohomish (254)/ Everett (77)/ Mill Creek (69)	1771	4,444	206	181	25	532	312	220	335
535.07	5,079	Arlington	73	4,438	117	62	55	0	0	0	0
416.05	5,473	Everett	1400	4,412	89	71	18	0	0	0	225
526.06	4,664	Lake Stevens (737)/ Snohomish (96)	833	4,349	96	58	38	14	14	0	0
527.06	4,989	Lake Stevens (1384)/ Everett (250)/ Marysville (2)	1636	4,311	273	102	171	30	30	0	0
535.05	4,635	Arlington (784)/ Granite Falls (192)/ Lake Stevens (182)	1158	4,304	188	149	39	0	0	0	0
532.02	4,548	Stanwood	1204	4,303	69	57	12	69	38	31	0
522.04	5,262	Snohomish	13	4,257	674	428	246	0	0	0	198
531.02	4,382	Marysville (506)/ Arlington (465)/ Stanwood (165)/ Tulalip (1)	1137	4,242	11	0	11	0	0	0	13
519.24	5,909	Bothell (1299)/ Mill Creek (2)	1301	4,087	381	225	156	372	115	257	0

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