

A Comparison of Recent Household Travel Surveys

2007/08 HH Travel Survey
versus the
2011/2012 Geographically-Focused HH Travel Surveys

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Background

- TPB's travel modeling improvements will be informed by three recent HH travel surveys:
 1. **2007/08 HTS** – *Regional* HH travel survey; one of the primary datasets used to calibrate the Version 2.3 model
 2. **2011 Geographically Focused HH Travel Survey** – A HH travel survey of seven selected subareas; used to support 2010 validation of 2.3 travel model
 3. **2012 Geographically Focused HH Travel Survey**- A HH travel survey of seven additional subareas; not used for any TPB model development work to date



Background, continued

- The 2007/08 HTS files have been previously documented and analyzed
- The 2011 and 2012 GFHT survey files have *not* been analyzed; prior validation work was informed by preliminary summaries of the 2011 survey

So....

Staff felt some basic vetting of the GFHTS files was warranted before releasing them to CS



Research questions

1. HH demographics:

- Are the overall HH attributes of the three surveys comparable/reasonable?
- Are the HH attributes of the geo-focused areas reasonable/within expectations?

2. Travel Attributes:

- Are the overall trip-making attributes of the three surveys comparable/reasonable?
- Are the trip-making attributes of each geo-focused area reasonable/within expectations?



Presentation overview

Three sections:

1. Overview of the three survey files
2. Comparison of HH attributes:
 - survey comparisons; and
 - subarea comparisons
3. Comparison of HH trip-making attributes:
 - survey comparisons; and
 - subarea comparisons



Overview of Survey Files

Household and Trip Summaries



Overview of HTS (HH & Trip) Files

Household Survey Files			
Survey	Survey Filename	HH Records*	Weighted HHs*
2007/08 HTS	hts07_BMC_TPБ_hf_blocks.csv	11,099	2,339,281
2011 Geo-Focused HTS	hts11_TPБ_hf_blk.csv	2,179	119,788
2012 Geo-Focused HTS	hts12_TPБ_hf_blk.csv	2,706	106,288
Trip Survey Files			
Survey	Survey Filename	Trip Records*	Weighted Trips*
2007/08 HTS	hts07_BMC_TPБ_tf_blocks.csv	85,910	20,434,922
2011 Geo-Focused HTS	hts11_TPБ_tf_blk.csv	15,265	1,005,800
2012 Geo-Focused HTS	hts12_TPБ_tf_blk.csv	20,672	959,232
* 2007/08 HTS records reflect HHs in the TPБ modeled area and HHs surveyed on non-federal holidays			



GF HTS subarea summary

Survey	Focus Area	HH Records	Weighted HH
2011 Geo-Focused HTS	1) DC 14th St NW/ Logan Circle	377	23,933
	2) MD International Corridor	204	16,123
	3) MD Largo	186	12,230
	4) MD White Flint	423	12,470
	5) MD Frederick	354	26,427
	6) VA Reston	352	15,670
	7) VA Woodbridge;	283	12,934
	<i>Subtotal:</i>	<i>2,179</i>	<i>119,787</i>
2012 Geo-Focused HTS	8) NY Ave NE	462	14,446
	9) Friendship Heights	542	11,051
	10) East & West Falls Church	483	19,249
	11) Beauregard Corridor	331	11,023
	12) National Harbor	172	6,561
	13) Dulles North	374	20,813
	14) St. Charles	342	23,145
	<i>Subtotal:</i>	<i>2,706</i>	<i>106,288</i>



Geo-Focused Area Locations

Urban/Fringe Areas:

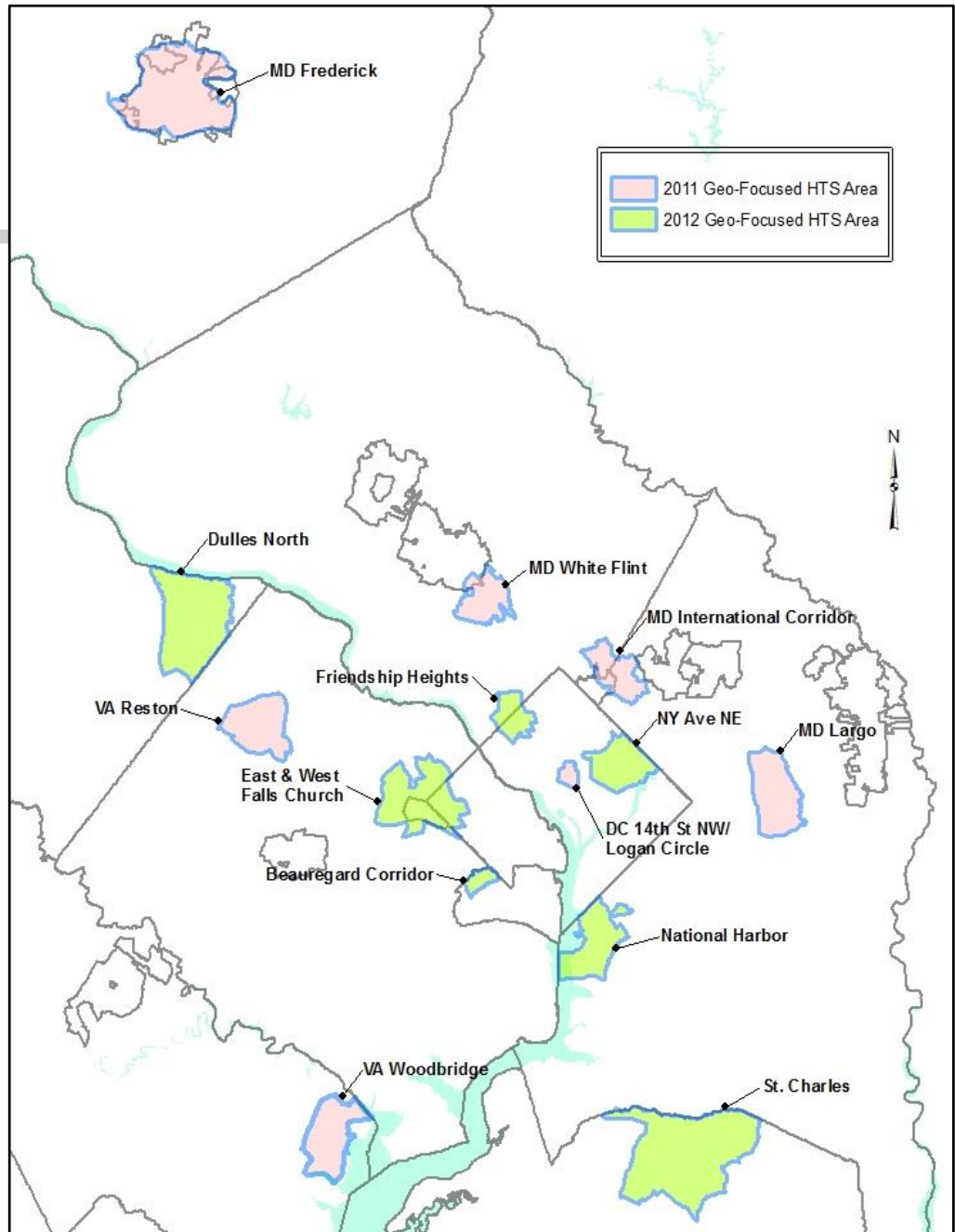
- 14th Street/Logan Circle (2011)
- New York Ave, NE (2012)
- Friendship Heights (2012)

Inner/Outer Suburbs:

- Beauregard Corridor (2012)
- E/W Falls Church (2012)
- MD International Corr. (2011)
- National Harbor (2012)
- Reston (2011)
- White Flint (2011)
- Largo (2011)
- Dulles North (2012)
- Woodbridge (2011)

Exurbs:

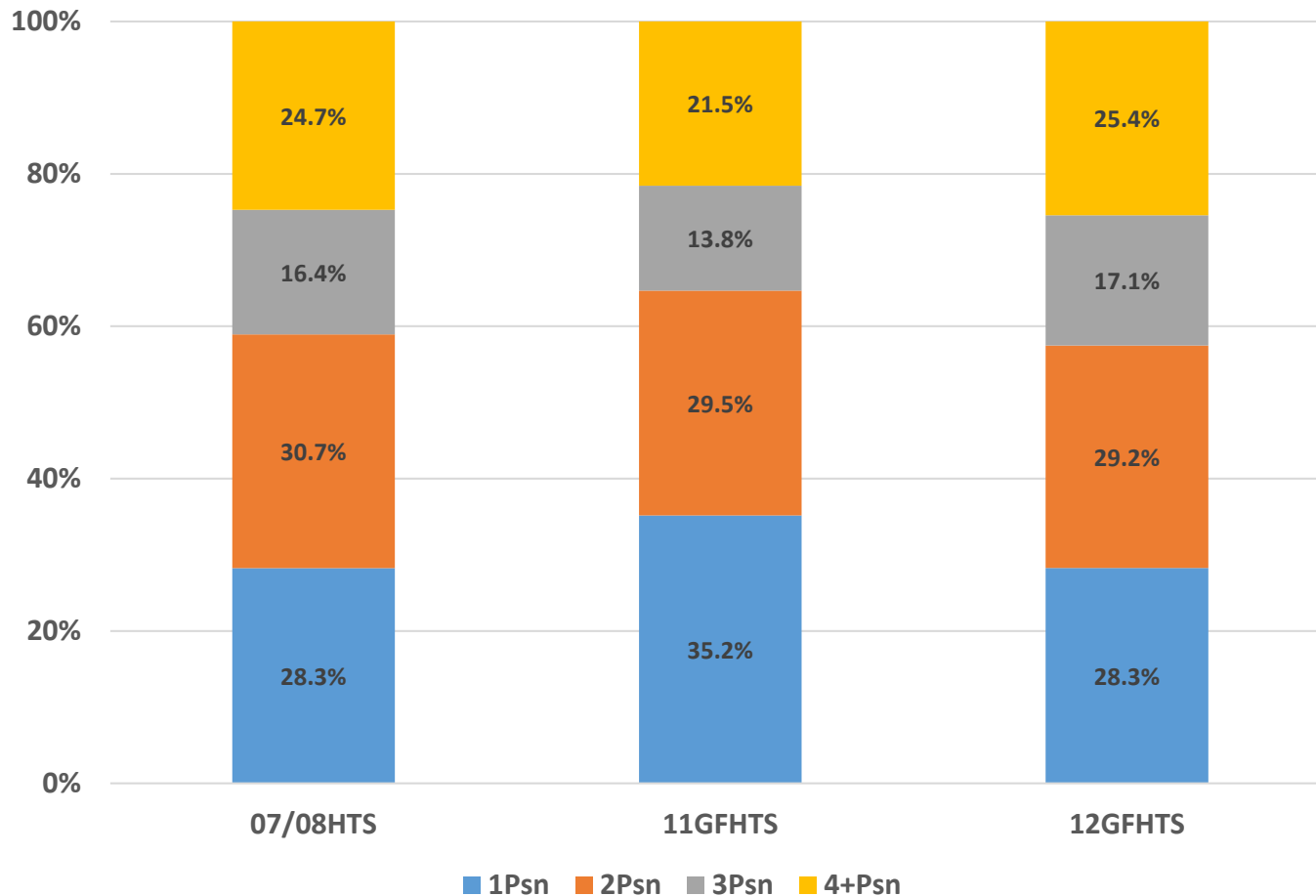
- Frederick (2011)
- St. Charles (2012)



Evaluation of HH Attributes

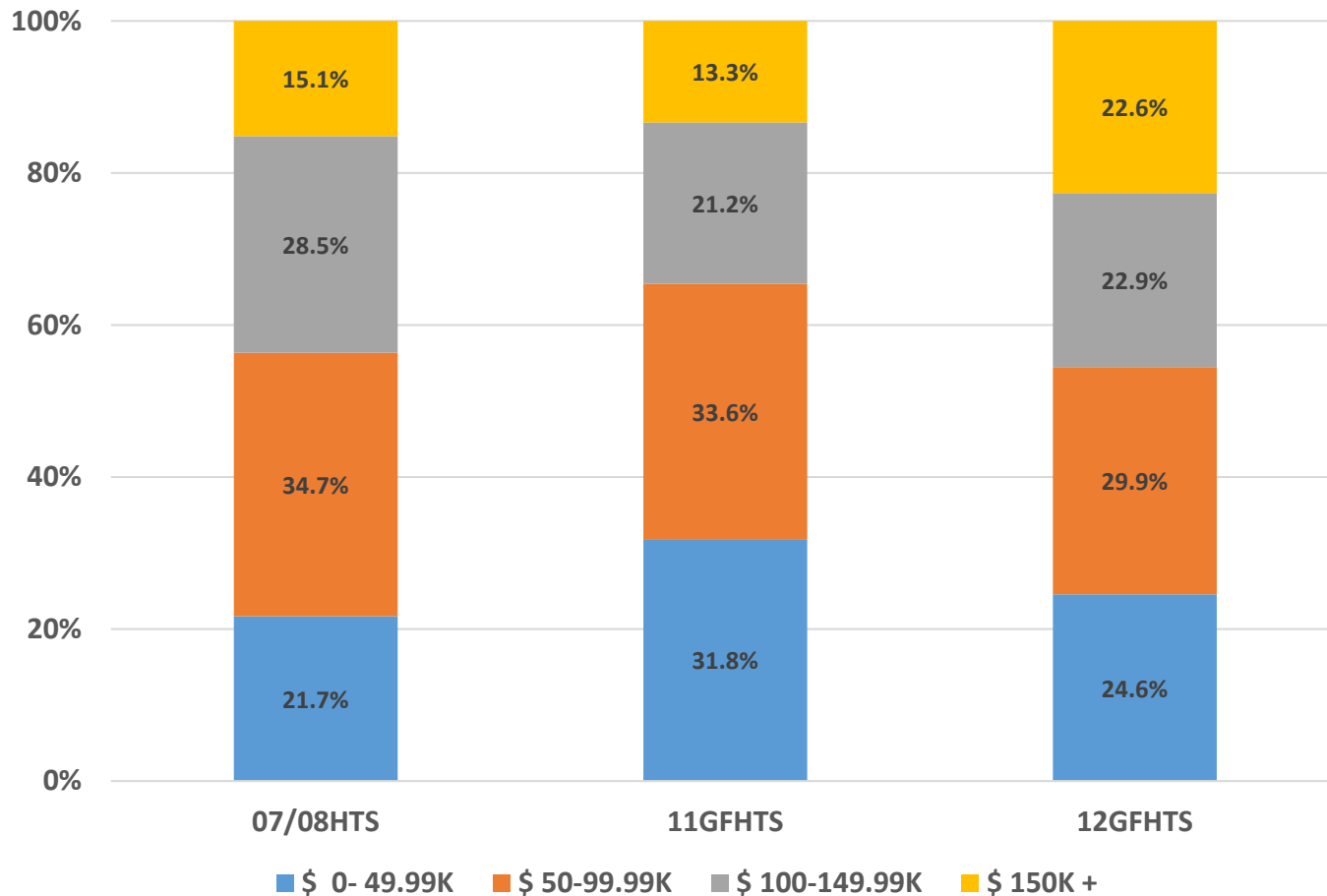


HH Size Distributions: 2007/08 vs. 2011 vs. 2012 Surveys

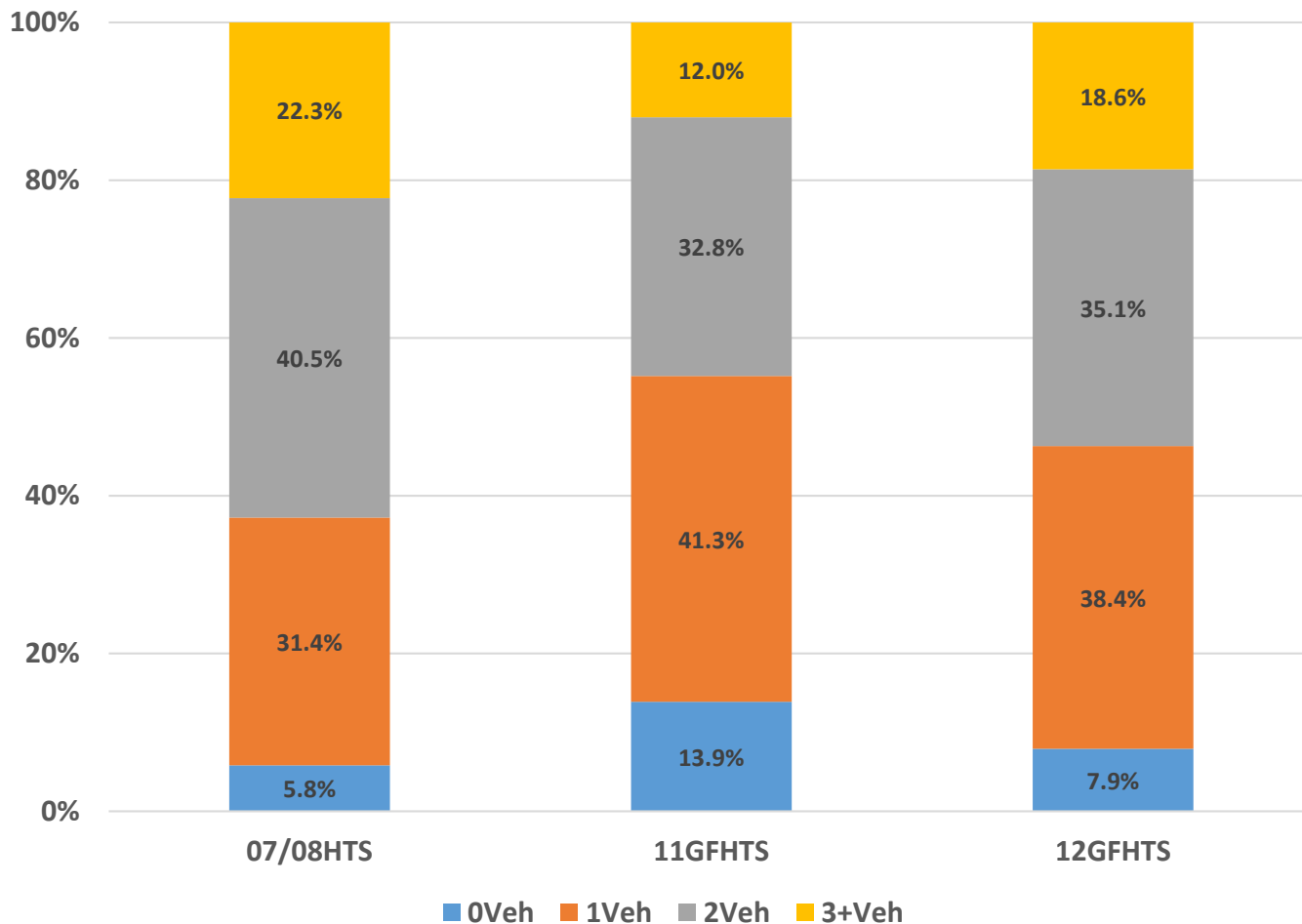


HH Income Distributions:

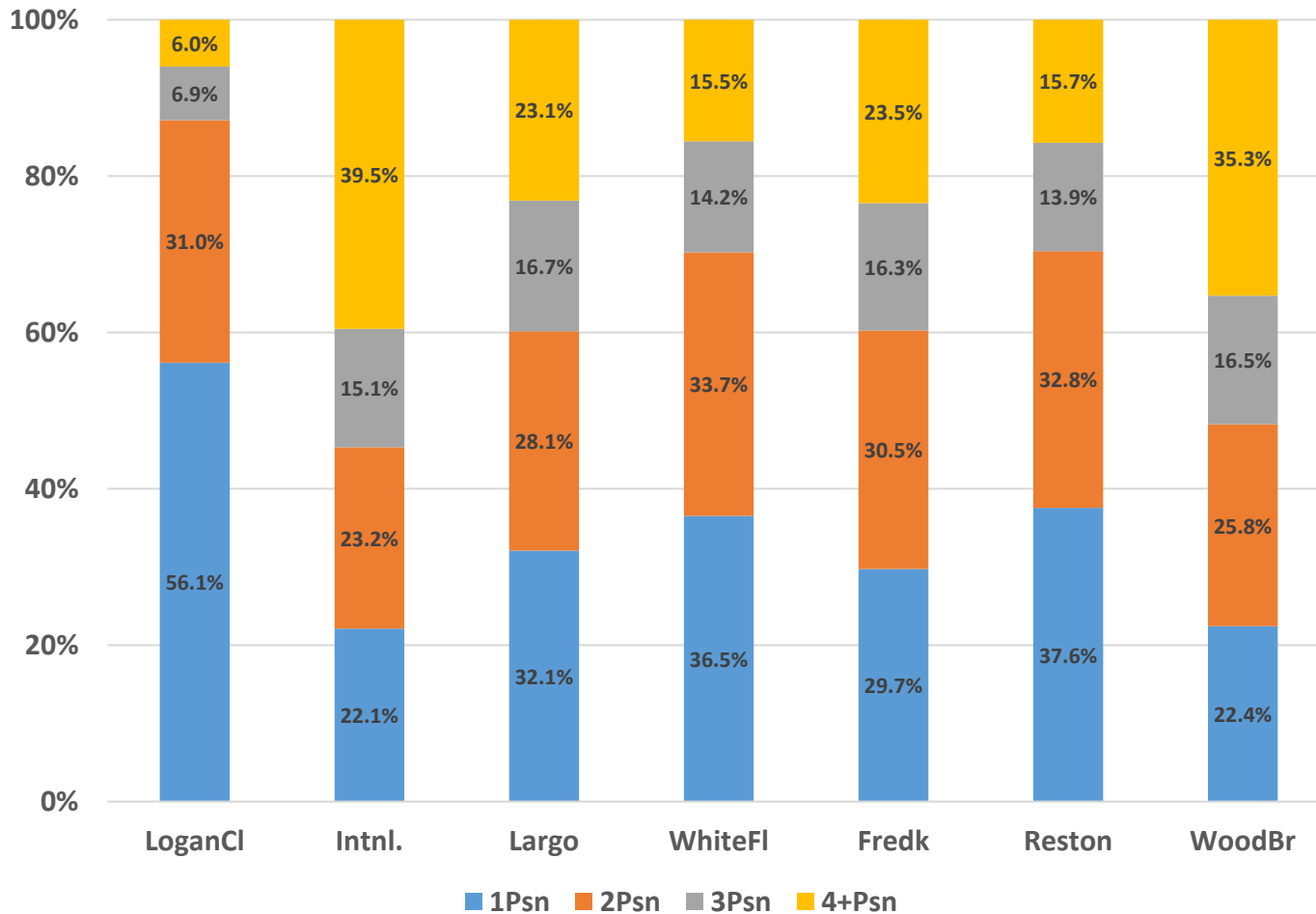
2007/08 vs. 2011 vs. 2012 Surveys



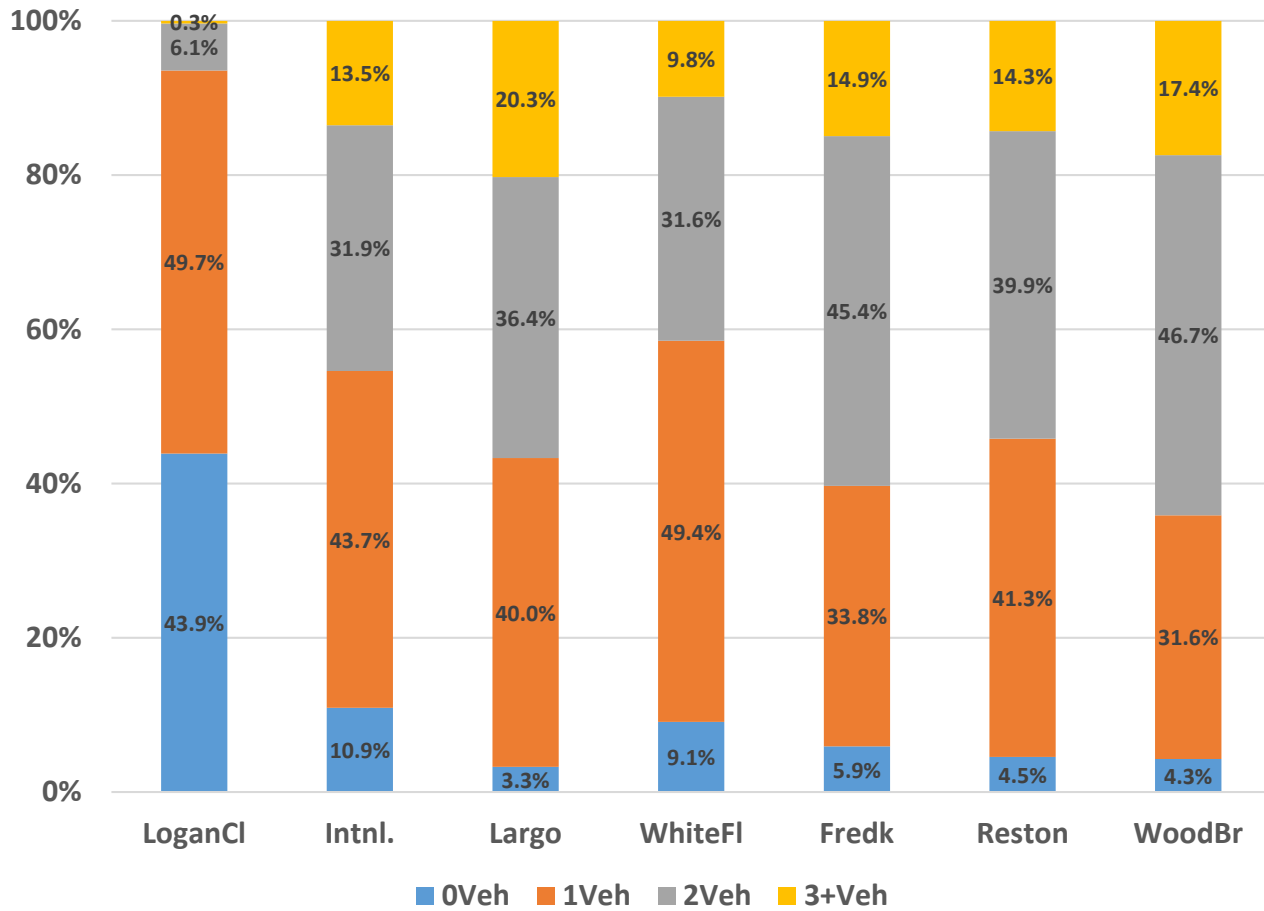
HH Vehicles Available Distributions: 2007/08 vs. 2011 vs. 2012 Surveys



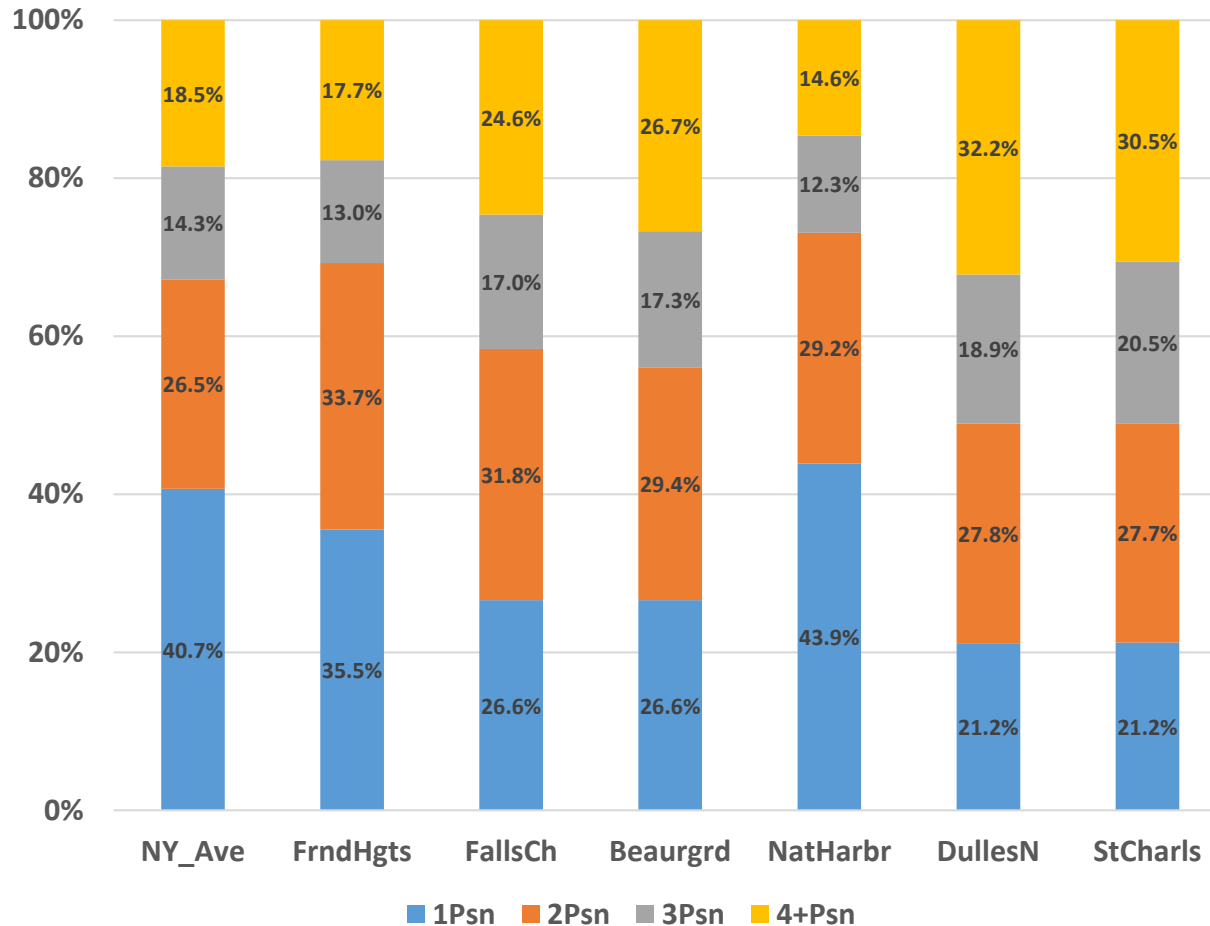
HH Size Distributions: 2011 GF_HTS Subareas



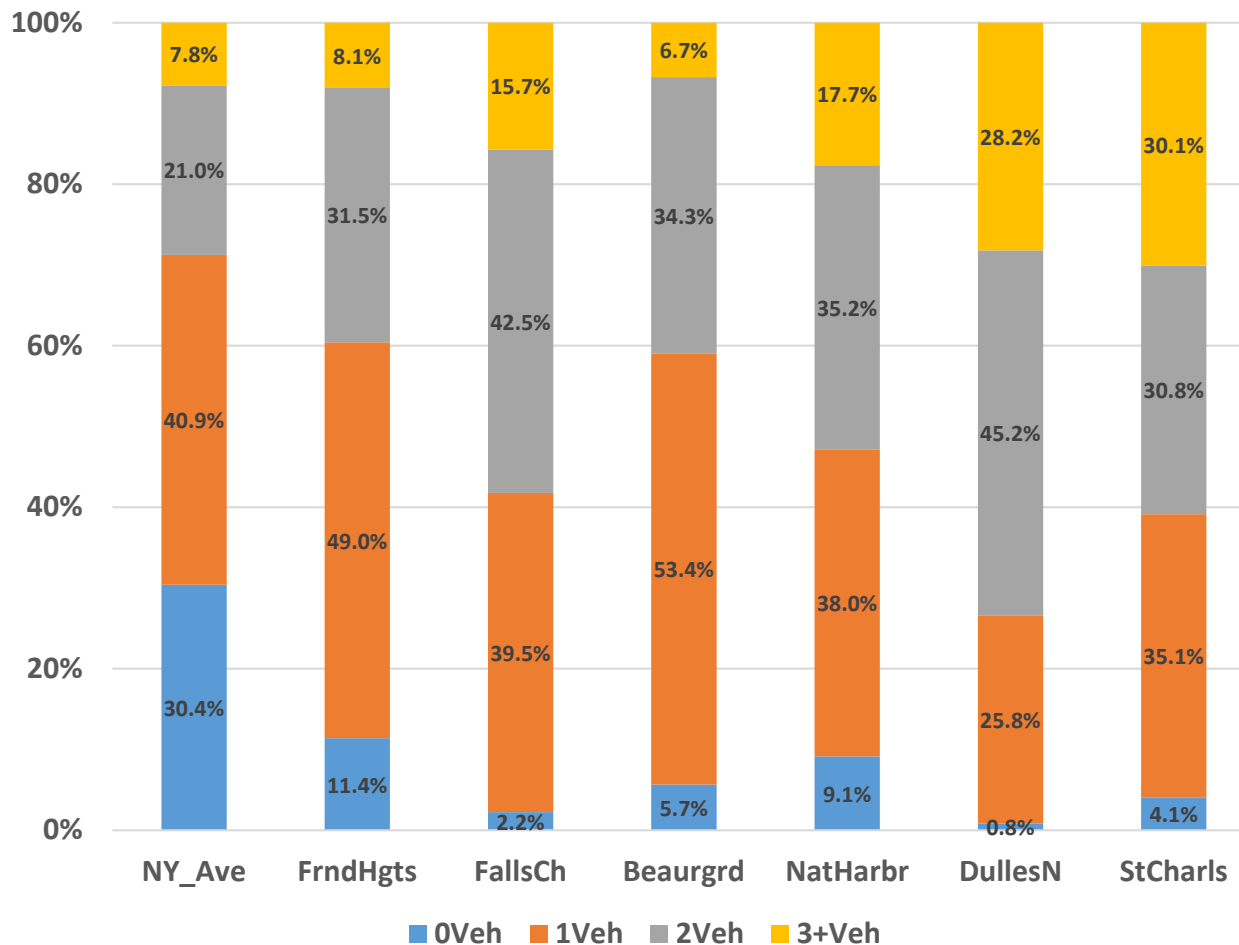
HH Vehicles Available Distributions: 2011 GF_HTS Subareas



HH Size Distributions: 2012 GF_HTS Subareas



HH Vehicles Available Distributions: 2012 GF_HTS Subareas

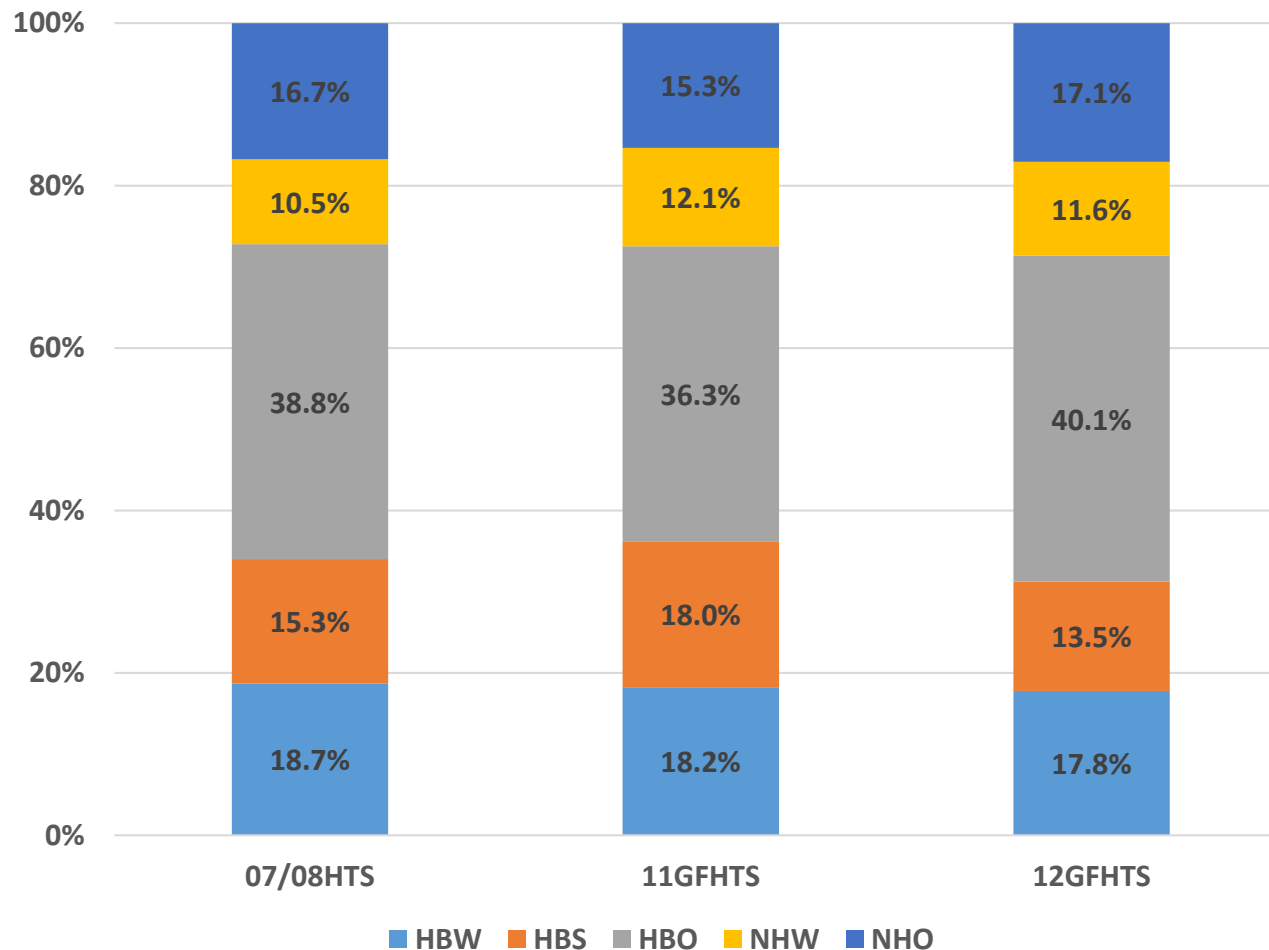


Evaluation of Trip Attributes



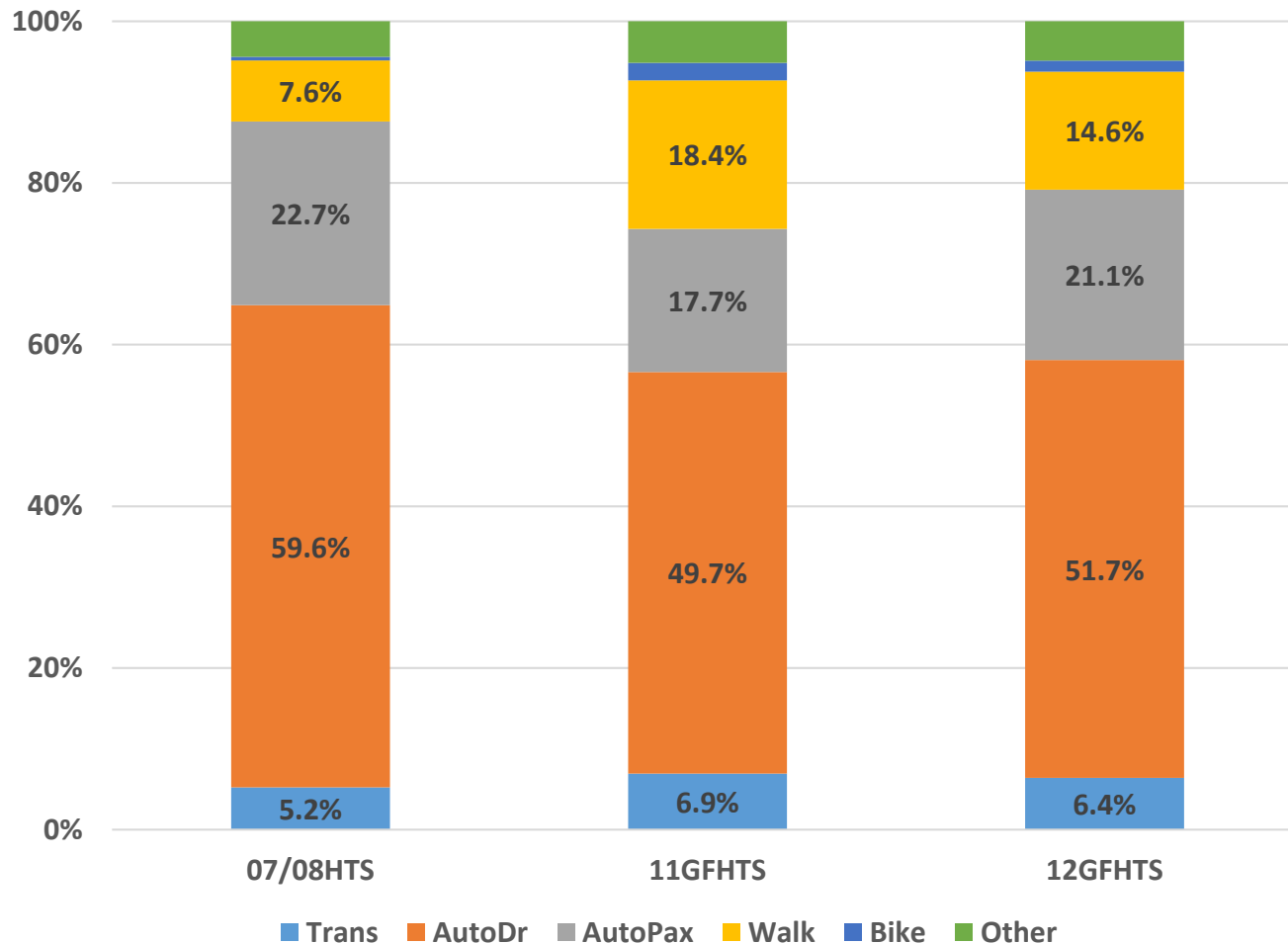
Trip Purpose Distributions:

2007/08 vs. 2011 vs. 2012 Surveys

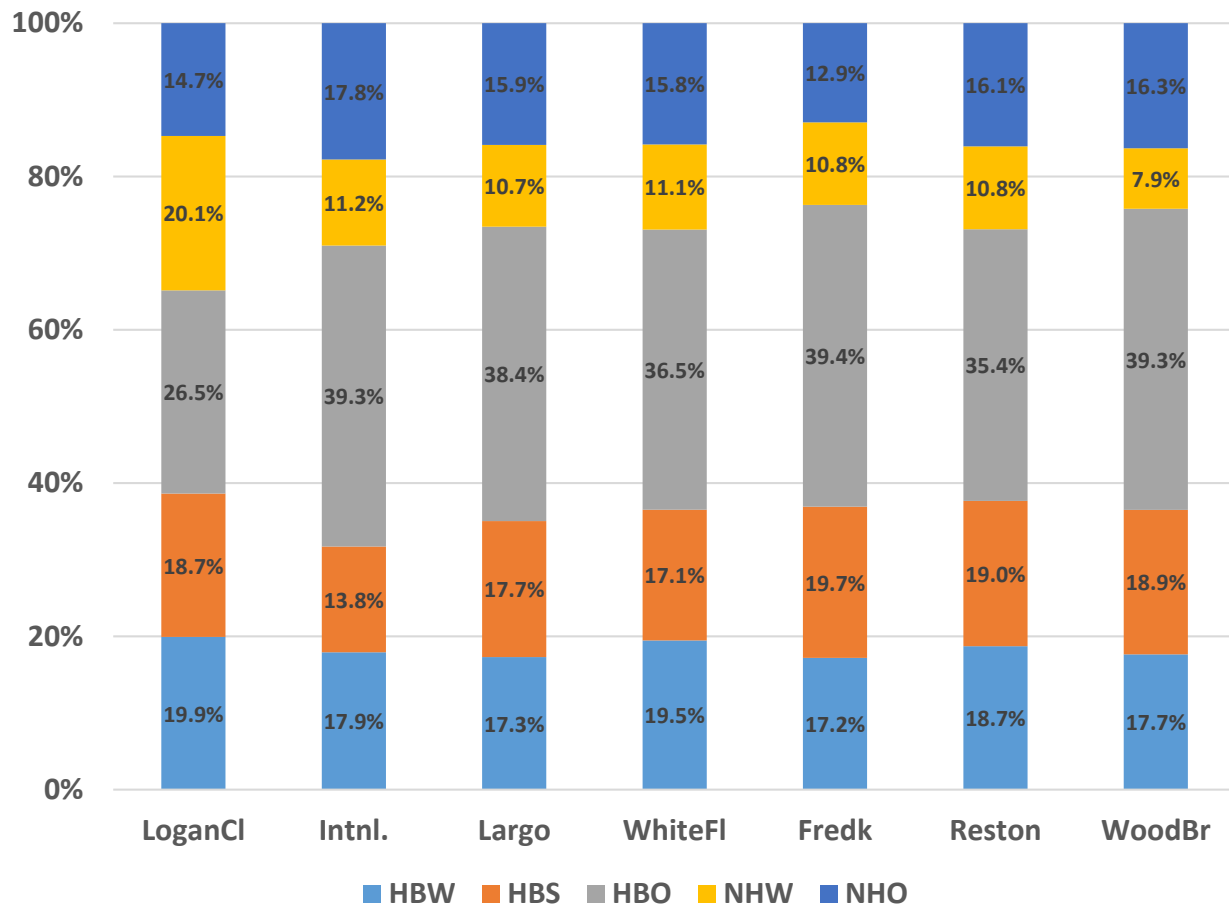


Travel Mode Distributions:

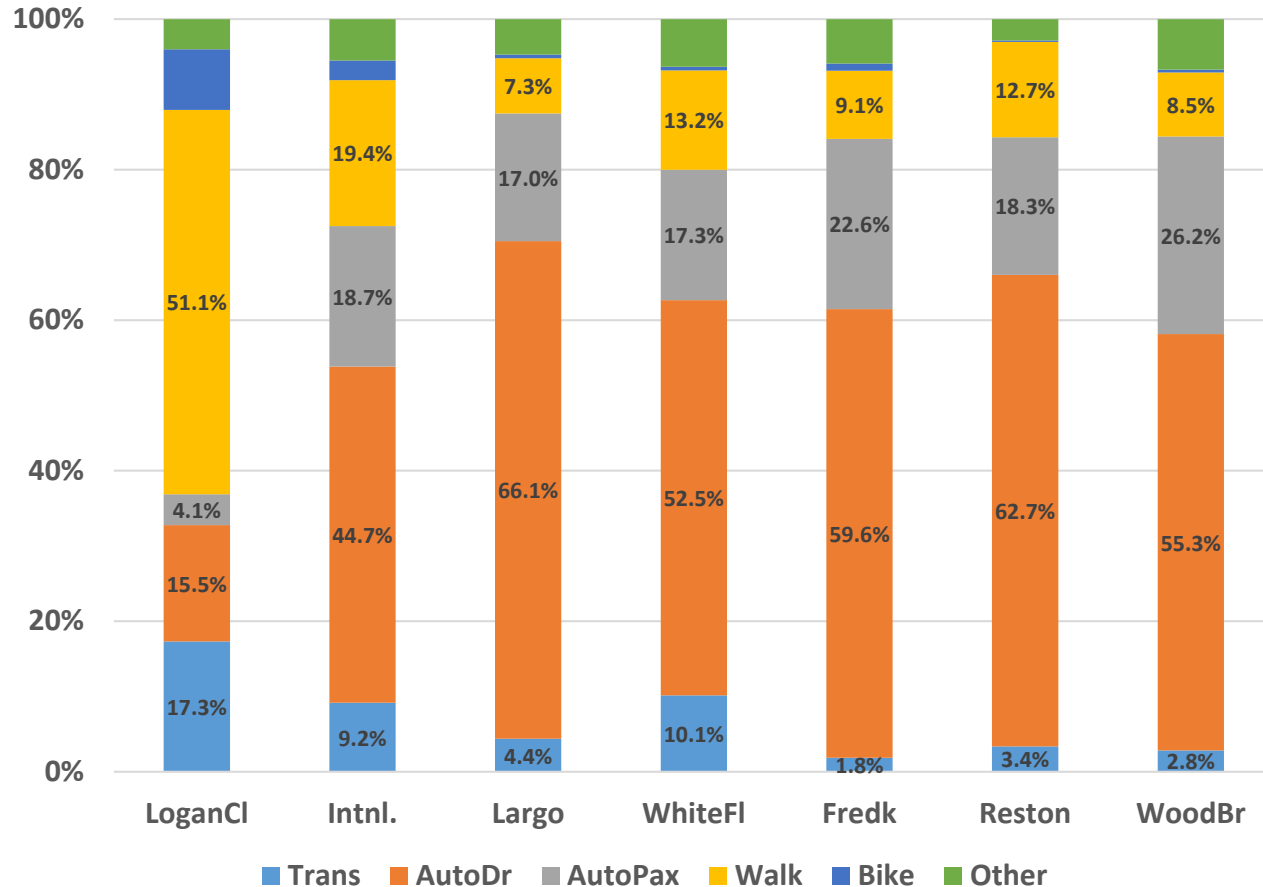
2007/08 vs. 2011 vs. 2012 Surveys



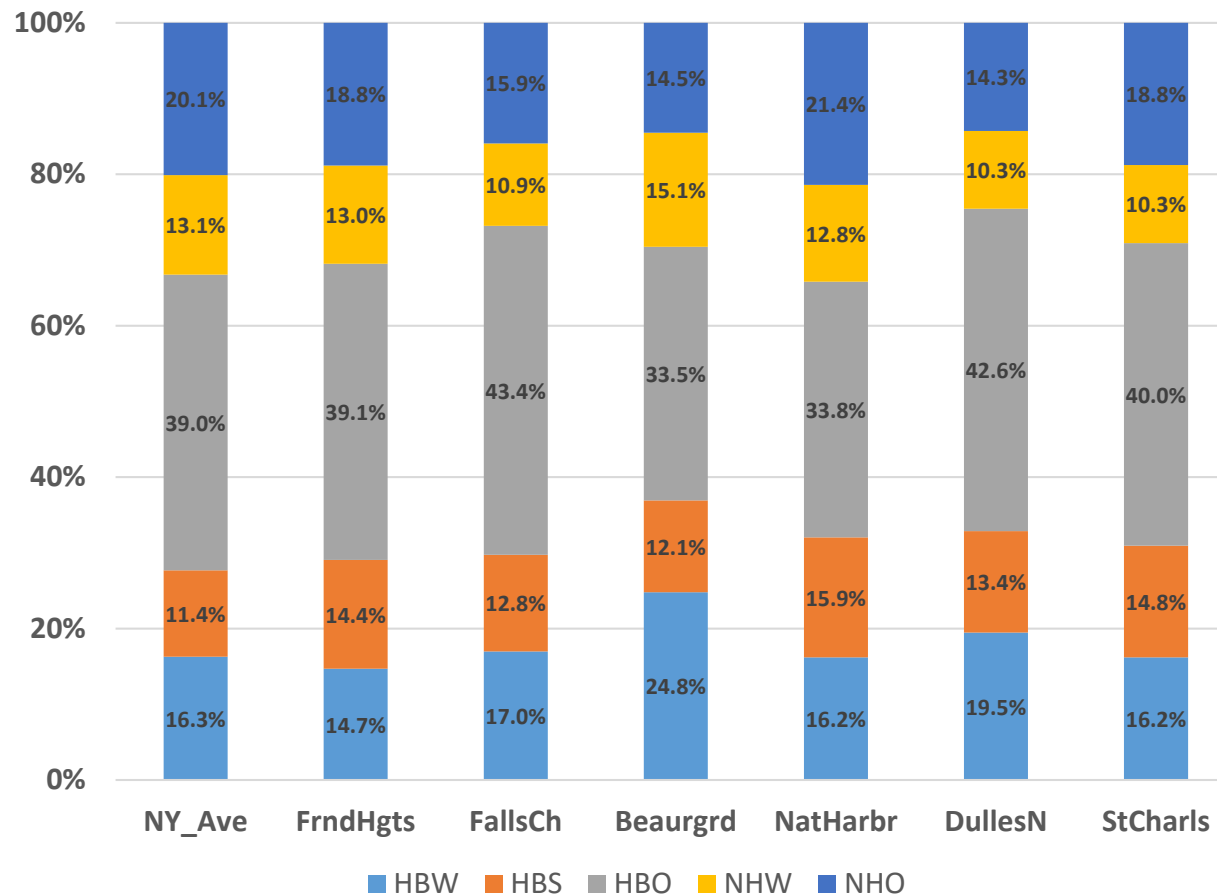
Trip Purpose Distributions: 2011 GF HTS Subareas



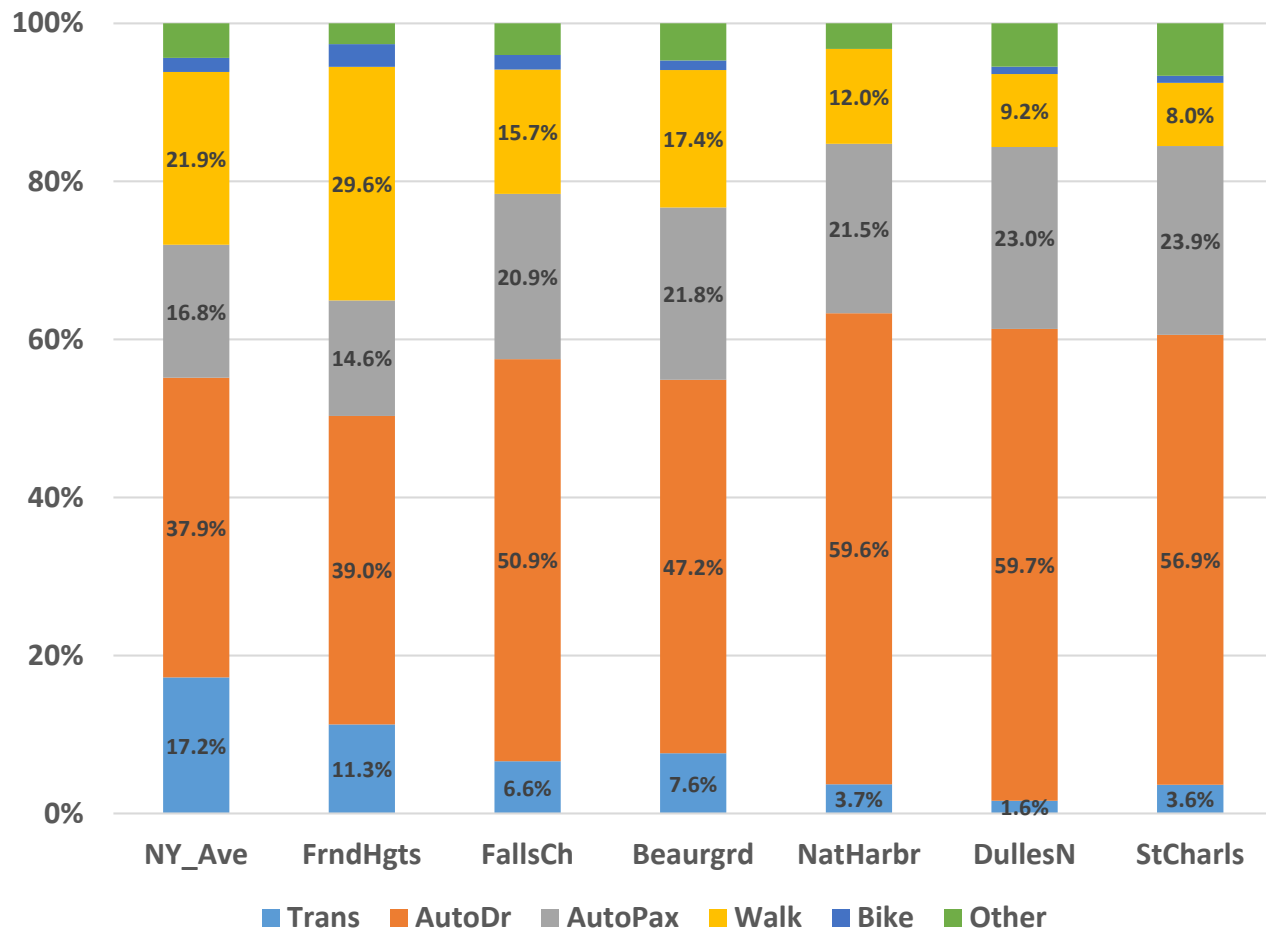
Travel Mode Distributions: 2011 GF HTS Subareas



Trip Purpose Distributions: 2012 GF HTS Subareas

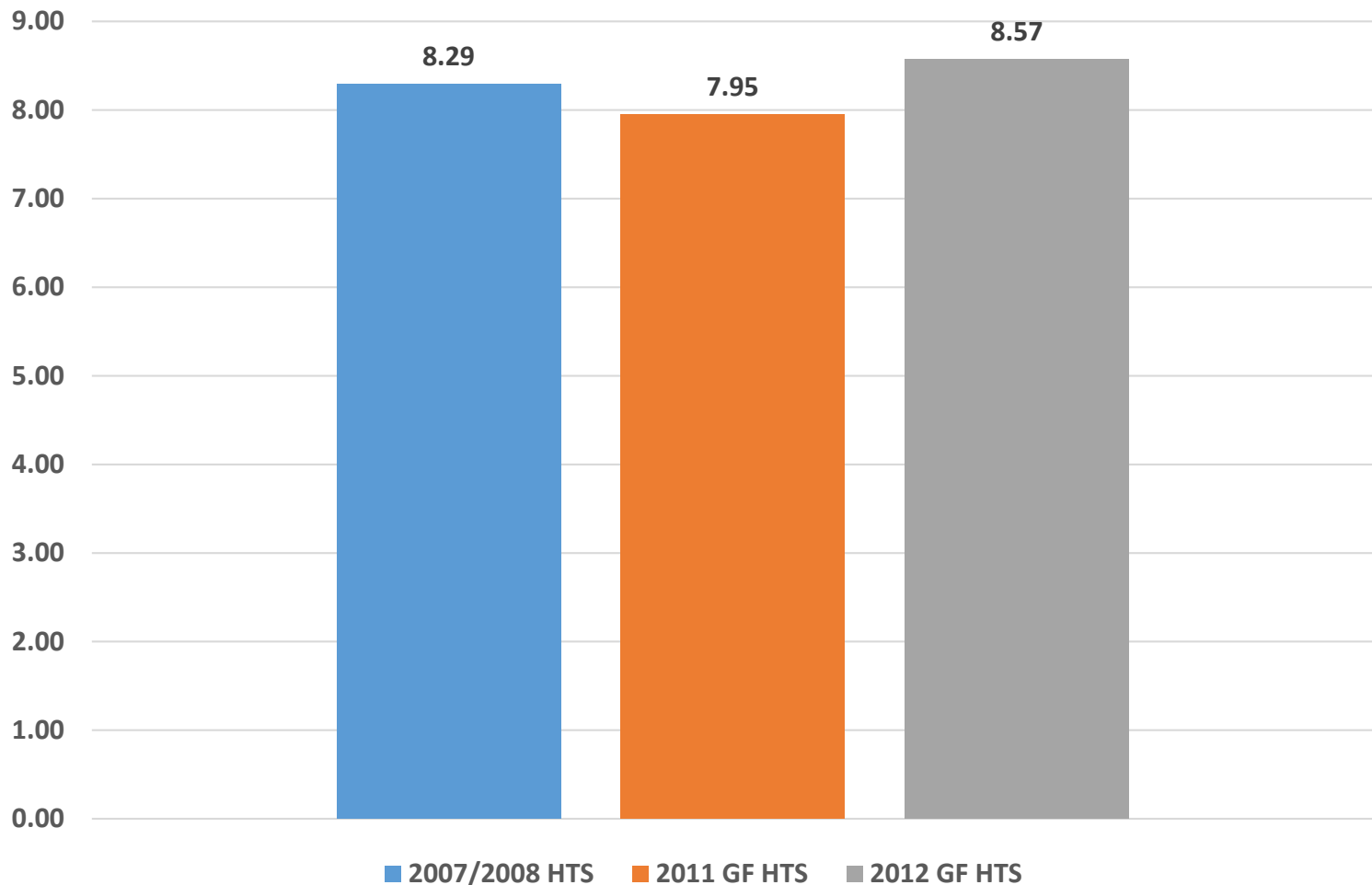


Travel Mode Distributions: 2012 GF HTS Subareas



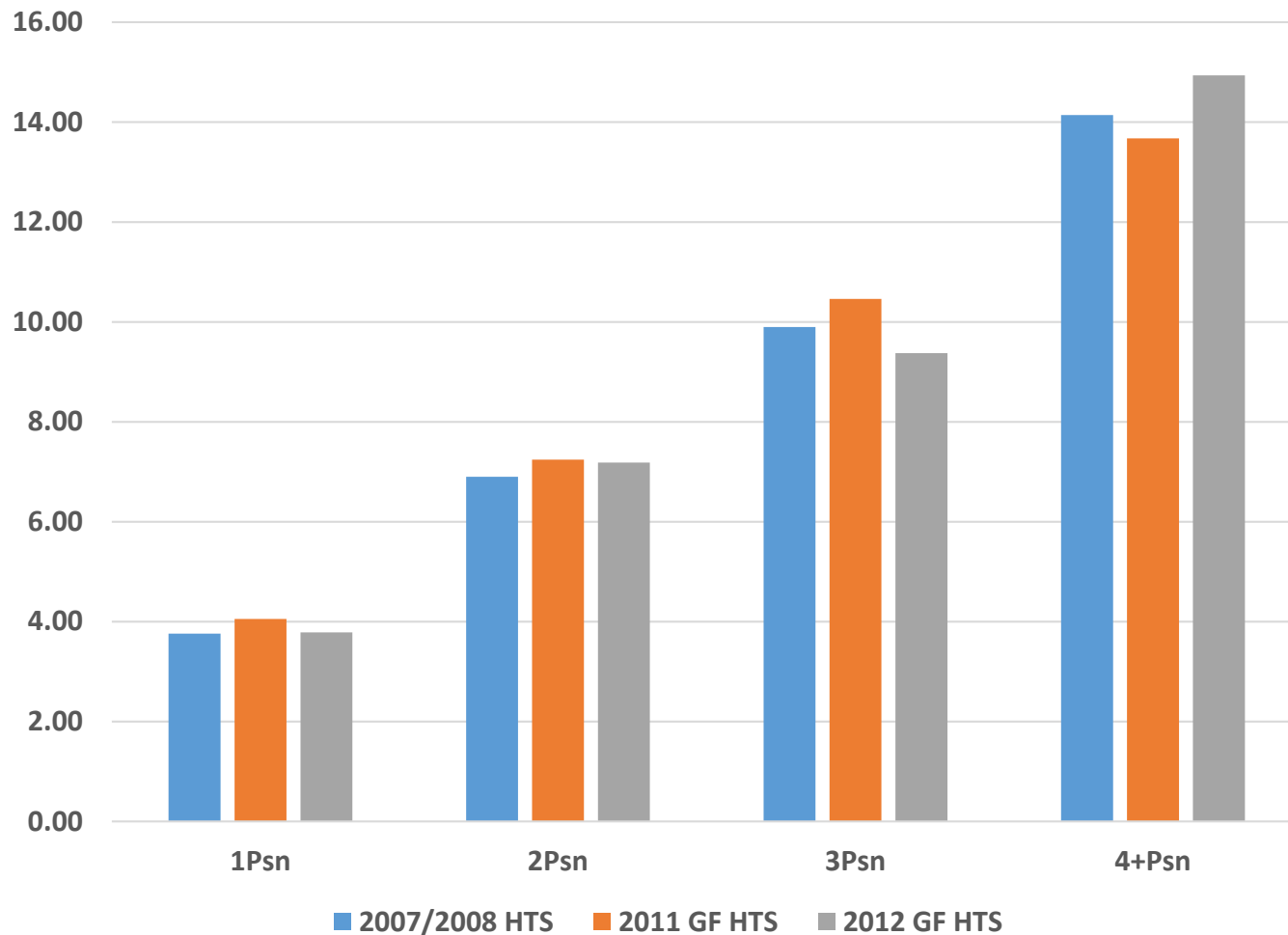
Daily Trip Rates (Person Trips/HH)

2007/08 vs. 2011 vs. 2012 Surveys

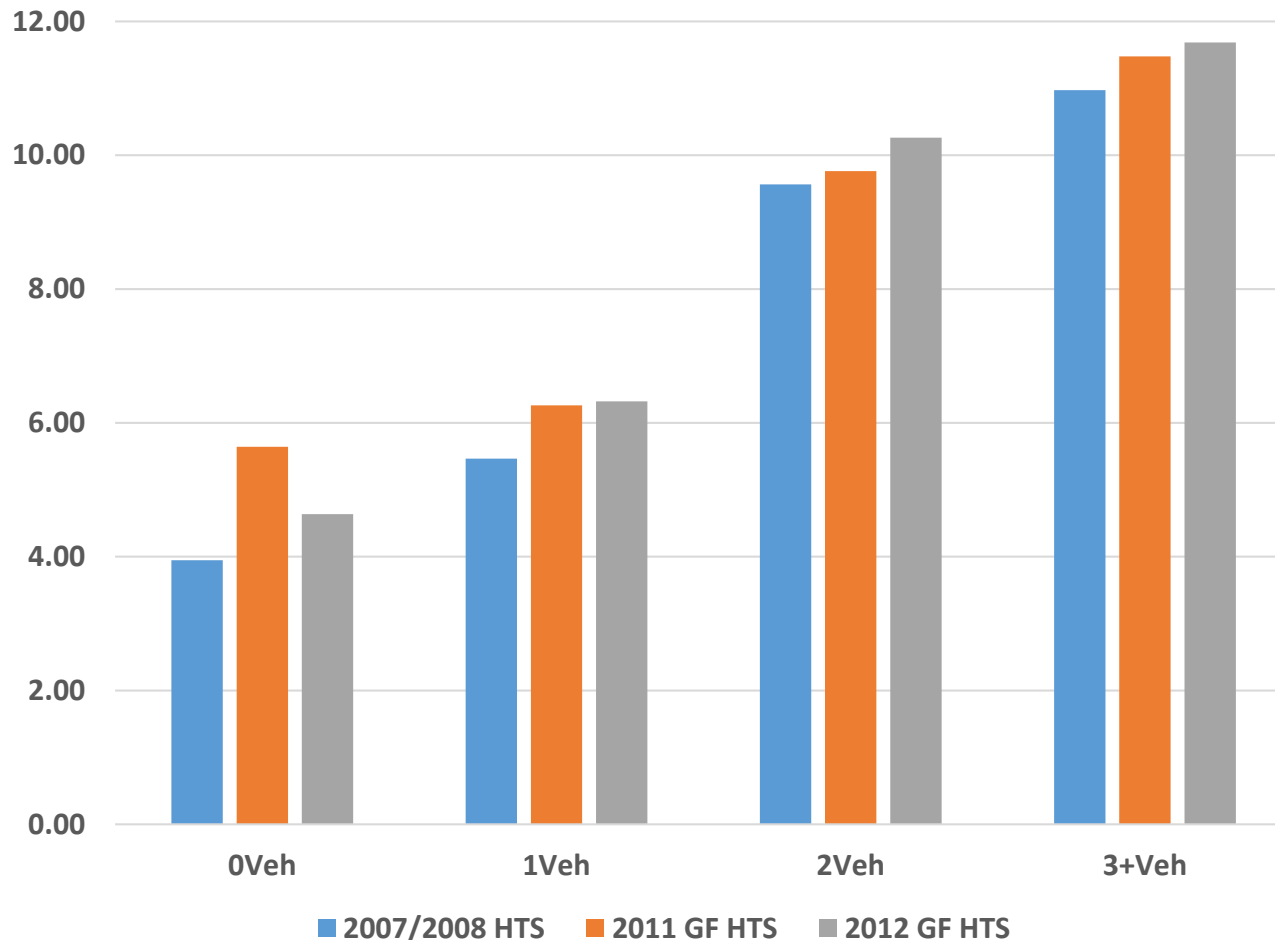


Daily person trip rates by HH size

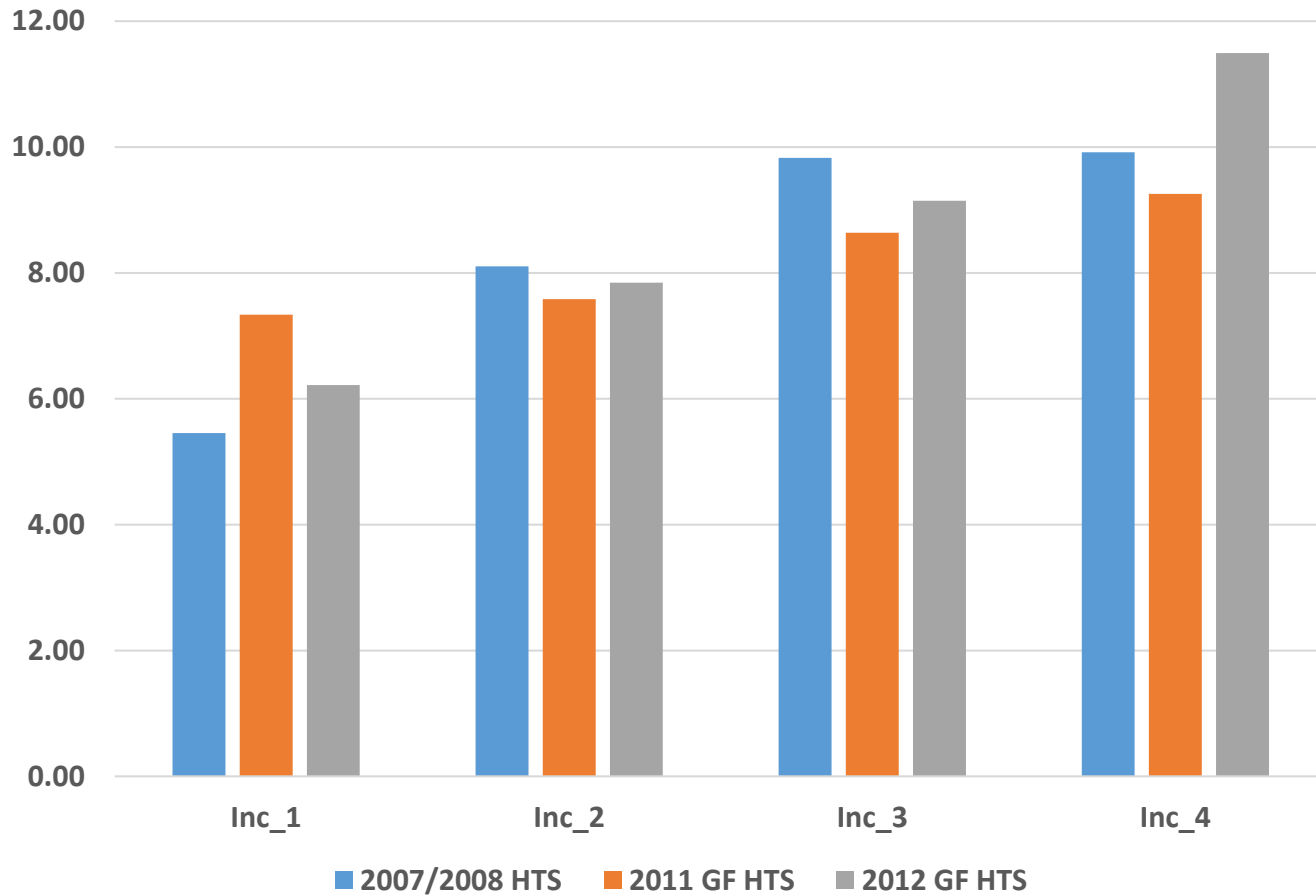
2007/08 vs. 2011 vs. 2012 Surveys



Daily trip person rates by vehs. available 2007/08 vs. 2011 vs. 2012 Surveys



Daily person trip rates by HH inc. group 2007/08 vs. 2011 vs. 2012 Surveys



Conclusions

- The geo-focused household travel survey files have been examined for reasonability and comparability with the 2007/08 HTS
- Comparisons of HH and trip-making attributes reflected in the three surveys are reasonable
- Comparisons of HH and trip-making attributes reflected in each geo-focused area generally agree with expectations
- Staff is comfortable with advancing the GF HT surveys, along with the 2007/08 survey, for use in model development activities



Acknowledgments

- Bob Griffiths for HTS data collection and processing
- Dzung Ngo/Wanda Hamlin for data compiling and graphing
- Meseret for mapping

