DRIVING SMART
Carsharing Mode Splits and Trip Frequencies

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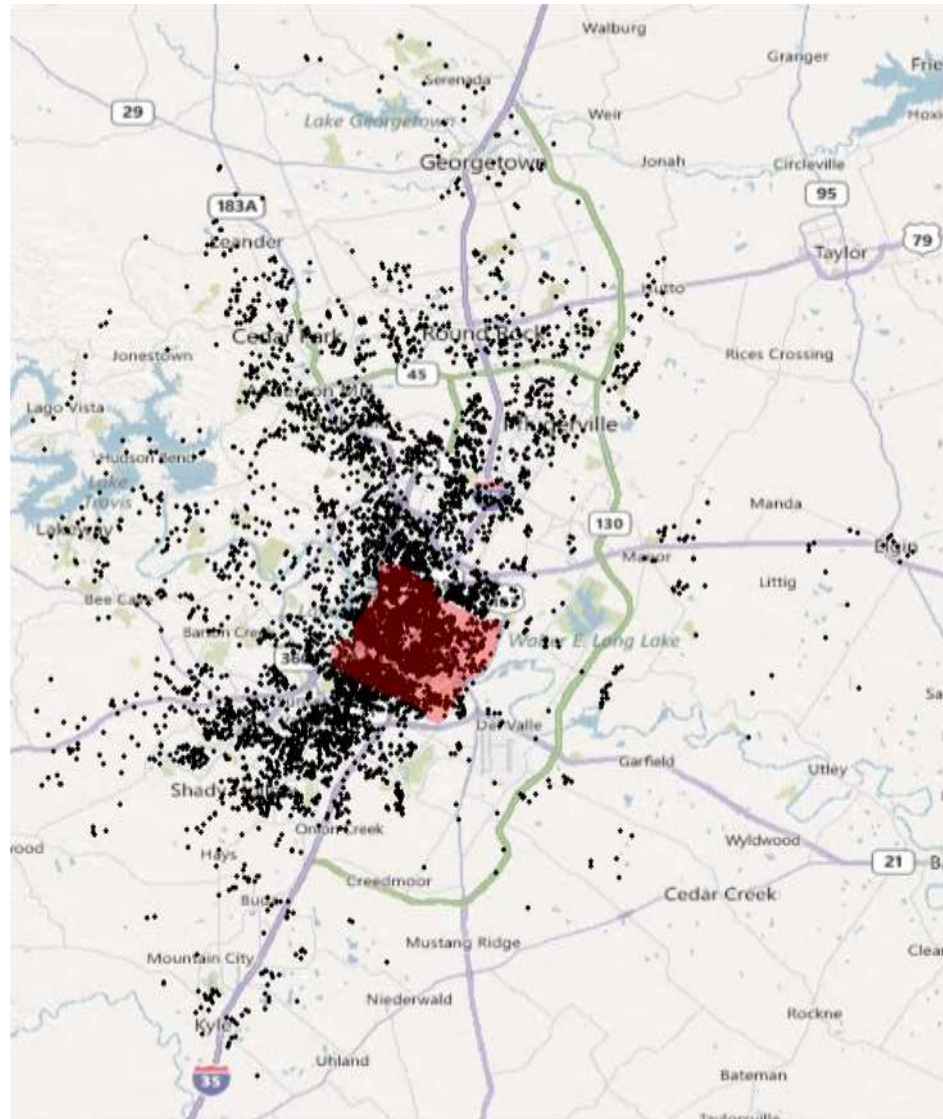
Carsharing:
Short-term, on-demand car rental

"If anyone has ever checked out a library book, you basically have the concept of carsharing." Karen Worminghaus, Boulder Carshare Co-Founder
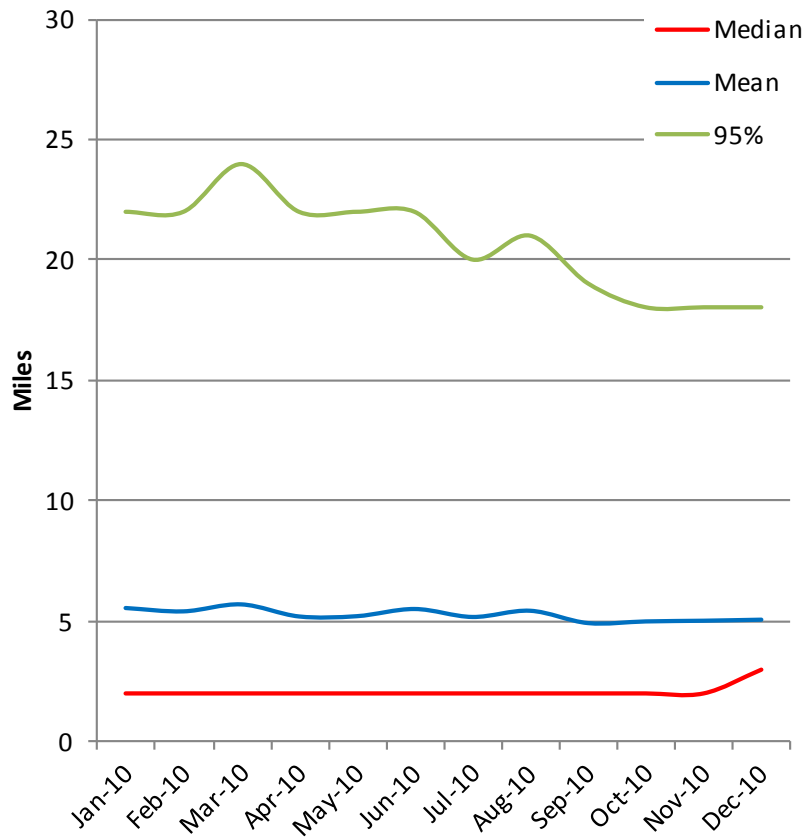
Car2Go

Data

- Data provided by Car2Go
- Encompasses all of 2010
  - 15,628 total members
  - 155,852 rentals
- Limited to 13,716 Austin area members
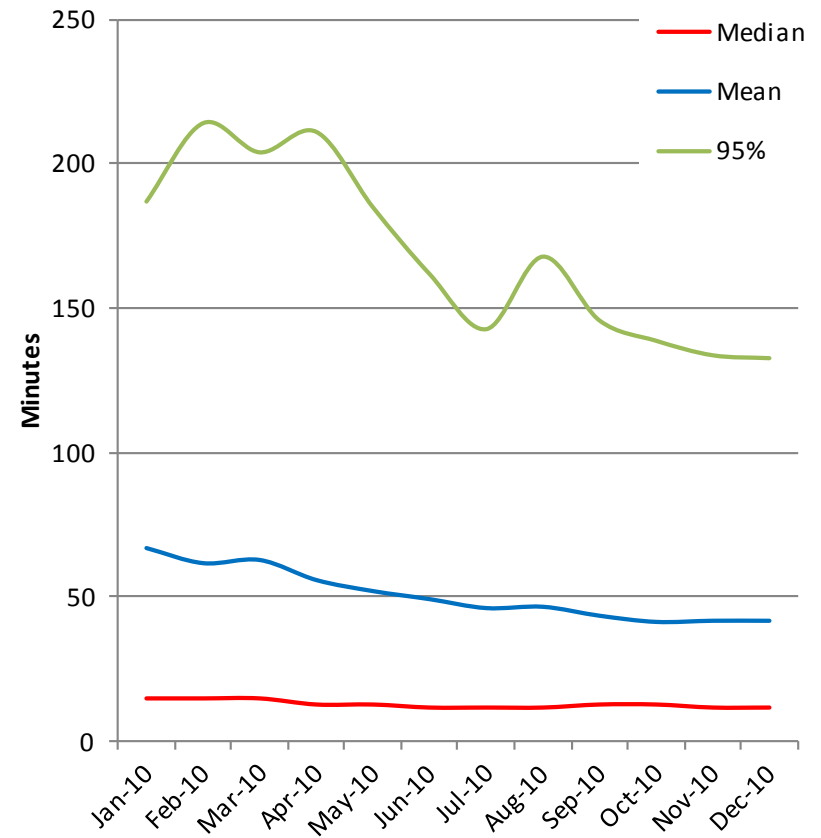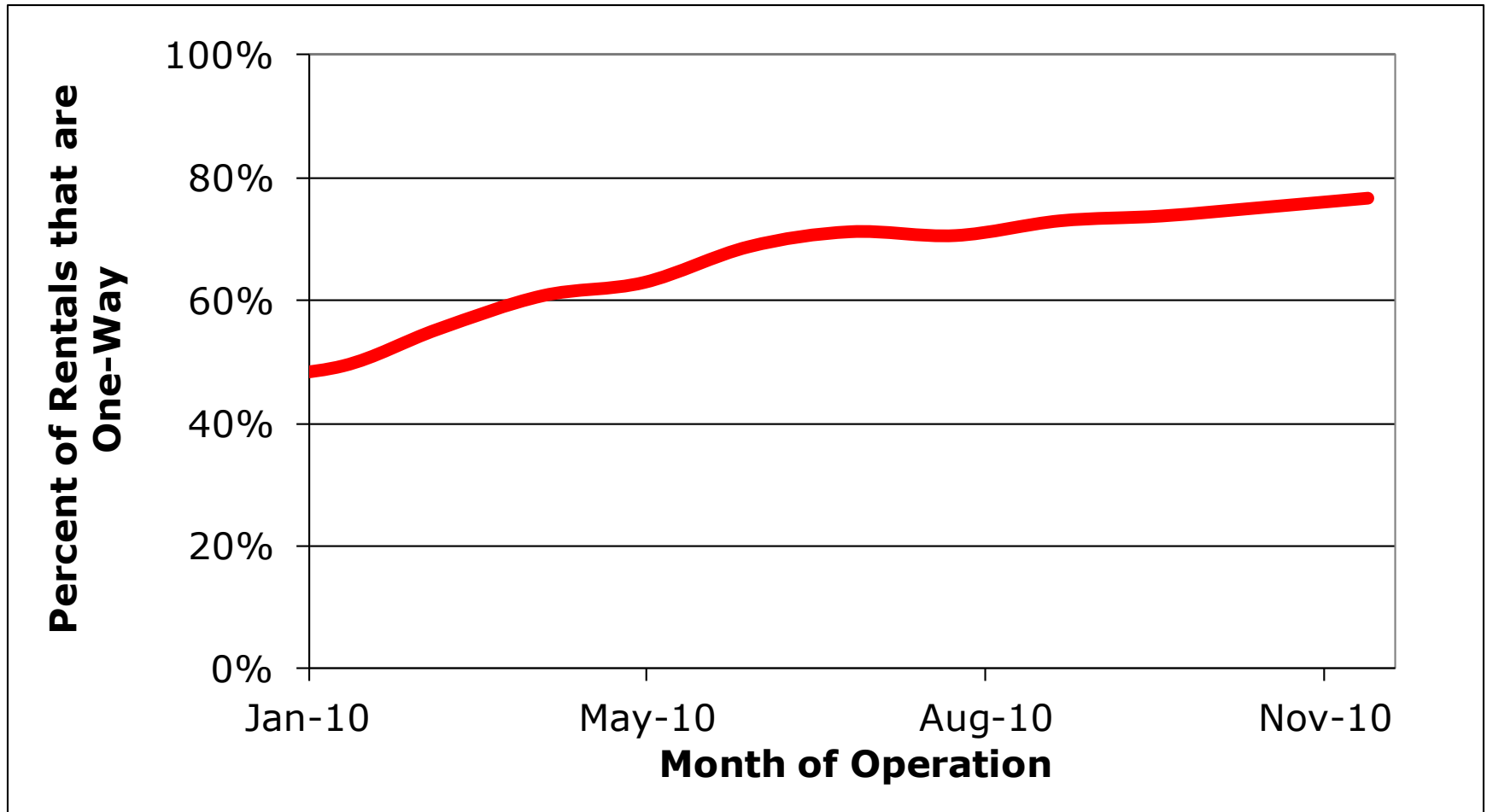
Member Residential Locations

Distance and Time Traveled

Mode Share and Trip Prediction

- Forecasting modal splits is a key part of transportation planning, but no current analysis of carsharing modal split

- Current mode splits:
  - Single Occupancy Vehicles
  - Transit
  - Carpooling
  - Alternative (Walking/Bicycling)

One Way Rentals

Mode Share: Options

- Comparison data from CAMPO

- Option 1: All Rentals (maximum)

  – Involve travel on network

  – Most carshare programs are not one-way

- Option 2: True Trips (minimum)

  – Provides a direct comparison to CAMPO data

  – Based on distance (at least 0.25 miles), speed (at least 5mph), and distance ratio (at least 0.5)

Mode Share: All Rentals

Variable	All Rentals		
	B	Std.Err.	Sig.
Constant	-2.496	0.151	0.000
Household and employment density (per acre)	0.003	0.001	0.085
Average household size	-0.134	-0.058	0.022
Median household income (in thousands)	-0.003	0.002	0.115
			N=126
		Adjusted R^2: 0.057	

Mode Share: True Trip Characteristics

Characteristic	Median	Mean
Duration (minutes)	11.0	13.35
Miles traveled	2.0	3.01
Average speed (mph)	12.0	13.54
Ratio of distance between start/end and miles traveled	0.75	0.79

Mode Share: True Trips

	True Trips			All Rentals
Variable	**B**	**Std.Err.**	**Sig.**	*Coef.*
Constant	-2.757	0.149	0.000	*-2.496*
Household and employment density (per acre)	0.002	0.001	0.128	*0.003*
Average household size	-0.140	-0.057	0.016	*-0.134*
Median household income (in thousands)	-0.003	0.002	0.074	*-0.003*
	N=126 Adjusted R^2: 0.086			

Trip Estimation: Rentals Per Member

Variable	B	Std.Err.	Sig.
Constant	0.085	0.009	0.004
Percent of population aged 20-39	0.062	0.020	0.003
Household density per acre	0.001	0.000	0.000
Percent of population that is male	0.108	0.025	0.000
Average household size	-0.932	0.452	0.039
N=2,890			
Adjusted R^2: 0.161			

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Adjusted R^2: 0.161			

Trip Estimation: Rentals by Land Use

Variable	B	Std.Err.	Sig.
Constant	1.871	0.580	0.002
Household density per acre	0.484	0.116	0.000
Employment density per acre	0.041	0.012	0.001
N=126			
Adjusted R^2: 0.176			

So what?

- Carsharing is becoming more widespread but we know very little about its effect on travel

- Started in major cities but expanding throughout the country

- Metro areas, small and large, want to be able to encourage innovative transportation alternatives, which in turn attracts young and innovative individuals

Questions?
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