

# Commuting Characteristics in the Albuquerque Metropolitan Area: An Analysis of Changing Travel Behavior, 2006-2013

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**Mid-Region Council of Governments**

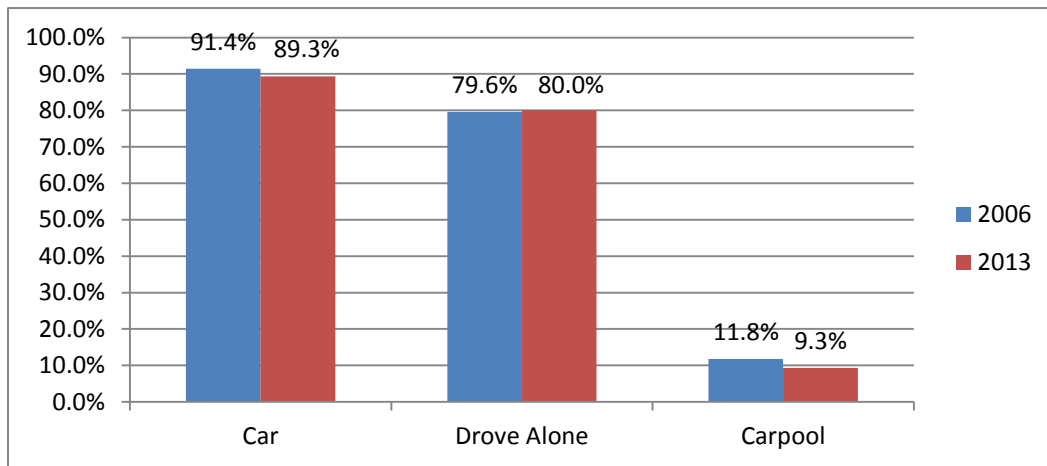
September 10, 2015

The Census Bureau recently released transportation data from the 2013 American Community Survey (ACS) and Albuquerque made the list of top 15 metropolitan statistical areas (MSA) in the country for the largest declines in the percentage of workers commuting by automobile.<sup>i</sup> The report, “[Who Drives to Work? Commuting by Automobile in the United States: 2013](#),” compares recent data to 2006, the first year for which full ACS data is available, and found that the percentage of workers commuting by private vehicle fell from 91.4 percent in 2006 to 89.3 percent in 2013.<sup>ii</sup>

Although the total number of auto commuters is indeed lower, the real story is a little more nuanced than a simple decrease in auto commuting. To supplement the Census Bureau analysis of MSA-level trends from 2006 to 2013, this analysis also considers data by subarea and for all modes available through the 3-year American Community Survey from 2006-2008 and 2011-2013.<sup>iii</sup> This methodology necessitates slightly different time periods and datasets than the Census Bureau report; that is, using 3-year data creates an average across time rather than a more precise moment, such as the 1-year data. Such an approach therefore sacrifices some degree of currency of accuracy; however, the 3-year data still allows for meaningful comparisons over time.<sup>iv</sup>

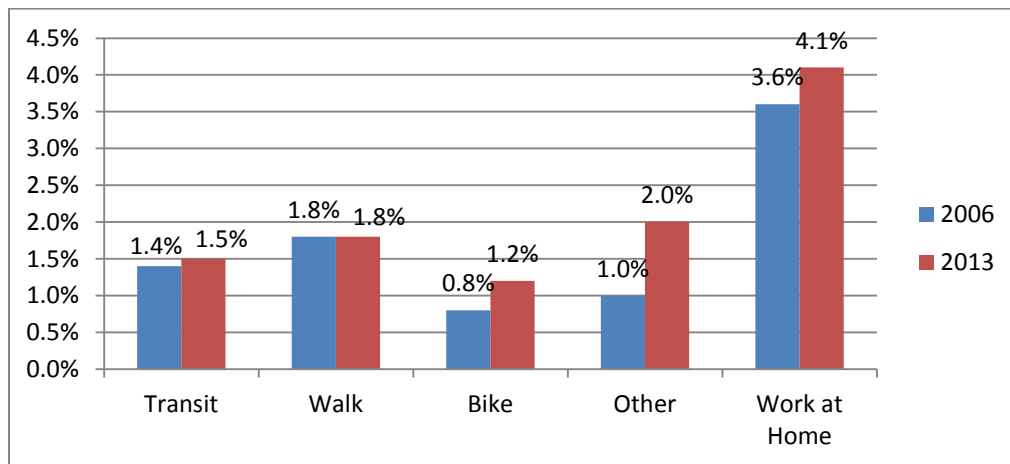
More detailed analysis indicates the decrease in auto commuting in the Albuquerque MSA appears to coincide with other shifts in travel behavior. Per capita vehicle miles traveled (VMT) decreased across the region during this span, and transit ridership increased substantially. However, the decline in auto commuting does not necessarily correspond to a shift away from single-occupancy vehicle use. In fact, both national and locally, the percentage of people commuting alone by private vehicle increased, while the percentage of commuting trips by carpool decreased significantly. In the Albuquerque MSA, the percentage of workers who drove alone increased from 79.6 percent in 2006 to 80.0 percent in 2013, while the percentage of carpool commuters *decreased* from 11.8 percent to 9.3 percent (see Figure 1).

**Figure 1: Commuting by Auto Modes in Albuquerque MSA, 2006 and 2013**



Nevertheless, the Albuquerque MSA did experience some modest shifts in commuting behavior. Figure 2 highlights the slight increase in commuting by transit, biking, and other modes,<sup>v</sup> as well as an increase in individuals working from home. It is difficult to say if residents across the region are substituting auto trips, and carpool trips in particular, for other modes, but the shifts are indeed concurrent.

**Figure 2: Commuting by Non-Auto Modes in Albuquerque MSA, 2006 and 2013**



### ***Findings from Subarea Analysis***

In this section, 3-year period estimates ACS data from 2006-2008 and 2011-2013 are assessed for the three major counties in the metropolitan area – Bernalillo, Sandoval, and Valencia – as well as the cities of Albuquerque and Rio Rancho (see Figures 3 and 4). Since Albuquerque and Rio Rancho comprise the majority of the populations of Bernalillo and Sandoval Counties respectively, there is a high degree of overlap in the composition of the data at the city and county levels. Considering both city and county data does shed light, however, on differences in the major cities compared to other parts of the counties.

**Figure 3: Commuting Mode by Subarea, 3-Year ACS Data Comparison**

	Bernalillo County		Sandoval County		Valencia County		Albuquerque		Rio Rancho	
	2006-08	2011-13	2006-08	2011-13	2006-08	2011-13	2006-08	2011-13	2006-08	2011-13
Auto	89.1%	89.1%	90.5%	89.5%	92.8%	91.3%	89.9%	89.4%	91.9%	92.6%
Drove alone	77.4%	79.2%	77.8%	81.0%	78.2%	82.6%	78.4%	79.6%	78.7%	84.8%
Carpooled	11.8%	9.9%	12.7%	8.4%	14.6%	8.7%	11.4%	9.7%	13.2%	7.8%
Transit	2.1%	1.7%	0.9%	1.4%	0.5%	1.5%	1.9%	1.9%	1.0%	1.4%
Walked	2.0%	2.2%	1.4%	1.2%	0.7%	1.7%	2.3%	2.1%	0.7%	0.3%
Bicycle	1.3%	1.6%	0.2%	0.3%	0.0%	0.0%	0.9%	1.3%	0.3%	0.3%
Other	1.7%	2.0%	1.8%	1.8%	2.0%	1.9%	1.3%	1.5%	1.5%	1.7%
Work at home	3.7%	3.4%	5.2%	5.9%	3.9%	3.7%	3.7%	3.8%	4.5%	3.6%

**Figure 4: Change in Commuting Mode by Subarea, 3-Year ACS Data Comparison**

	Bernalillo County	Sandoval County	Valencia County	Albuquerque	Rio Rancho
Auto	0.0%	-1.0%	-1.5%	-0.5%	<b>0.7%</b>
Drove alone	<b>1.8%</b>	<b>3.2%</b>	<b>4.4%</b>	<b>1.2%</b>	<b>6.1%</b>
Carpooled	-1.9%	-4.3%	-5.9%	-1.7%	-5.4%
Transit	-0.4%	<b>0.5%</b>	<b>1.0%</b>	0.0%	<b>0.4%</b>
Walked	<b>0.2%</b>	-0.2%	<b>1.0%</b>	-0.2%	-0.4%
Bicycle	<b>0.3%</b>	<b>0.1%</b>	0.0%	<b>0.4%</b>	0.0%
Other	<b>0.3%</b>	0.0%	-0.1%	<b>0.2%</b>	<b>0.2%</b>
Work at home	-0.3%	<b>0.7%</b>	-0.2%	<b>0.1%</b>	-0.9%

*Auto*

The decline in auto commuting is observed disproportionately in areas outside of Bernalillo County and the city of Albuquerque and in rural areas in particular. Sandoval County saw its share decrease by 1.0 percent (despite the auto share increasing in Rio Rancho) while the auto commuting share in Valencia County decreased by 1.5 percent. However, the share of drive-alone commuters increased for every subarea and the share of carpool commuters decreased for every geographic in the comparison years, with the most dramatic shifts taking place in Valencia County and Rio Rancho.

*Transit*

The data indicate a significant rise in commuting by transit for residents of Sandoval (including Rio Rancho) and Valencia Counties over time. This change coincides with the introduction of the New Mexico Rail Runner Express and reflects the newfound transit options for residents of these areas. While the transit commuting share in Bernalillo County decreased, the mode share for the city of Albuquerque remained constant over that same span (1.9 percent), indicating a potential decrease in commuting share by transit among residents of unincorporated areas of Bernalillo County.

*Walking and Biking*

Modest increases in non-motorized commuting can be observed in various subareas. For example, bicycle commuting increased in the city of Albuquerque from 0.9 percent to 1.3 percent and across all of

Bernalillo County by 0.3 percent (from 1.3 to 1.6 percent). Most other subareas experienced no change in bicycle commuting. There was also a 1.0 percent increase in commuting by walking in Valencia County, but differences in other subareas were minimal and there was no overall change at the regional level. The share of walk to work trips actually fell across Sandoval County and the city of Rio Rancho.

*Work at Home*

Across the region there is also an increase in the percentage of individuals working from home. The greatest increase in the 3-year ACS data can be observed in Sandoval County; however, the difference between the 1-year and 3-year datasets indicates a large amount of volatility in instances of persons working at home. An examination of 1-year ACS data for the metropolitan area (see Figure 5) over the span of 2006 to 2013 indicates that work at home activity generally increased from 2006 to 2009, peaking at 4.8 percent (during the height of the Recession), before declining to 4.1 percent in 2013 (as the economy steadily improved).

**Figure 5: Work at Home Commuting Share, Albuquerque MSA, ACS 1-Year Data**

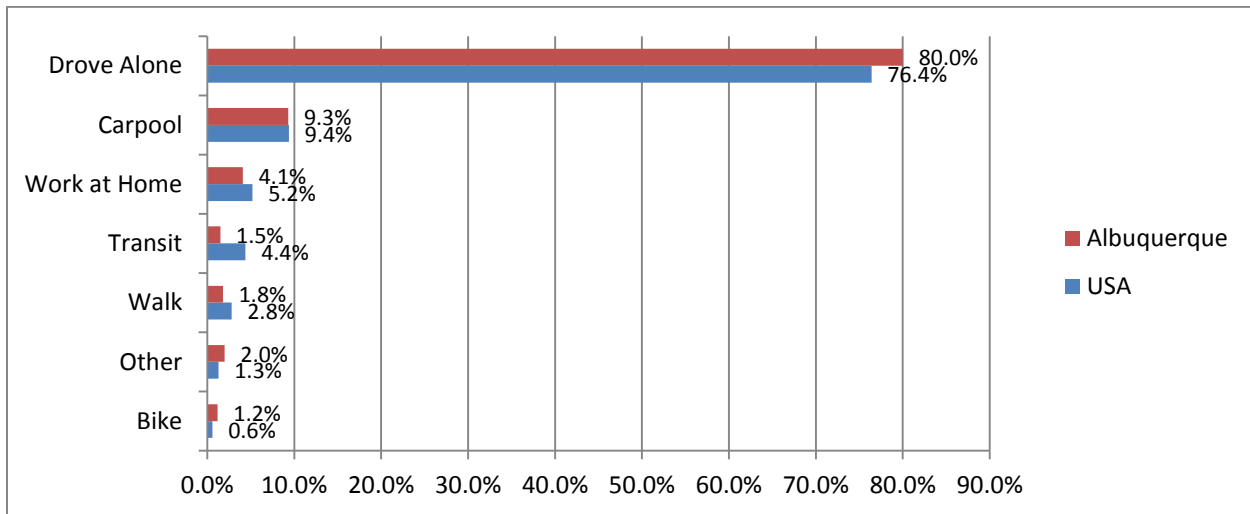
<b>Year</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>Work at Home Share</b>	3.6%	4.3%	4.1%	4.8%	4.4%	4.7%	4.4%	4.1%

***Comparing the Albuquerque Metropolitan Area to the US Overall***

In many respects the Albuquerque MSA reflects national trends in commuting behavior. Across the US, the percent of people commuting to work by private vehicle has dropped since 2010, and currently stands at 85.8 percent. However, the decrease in automobile commuting trips actually has more to do with a decline in carpooling – nationally, the percentage of people carpooling to work dropped from 10.7 percent to 9.4 percent – than in the percentage of people driving alone to work. From 2006 to 2013, the percentage of Americans driving alone to work actually increased from 76.0 percent to 76.4 percent. The decrease in auto commuting does coincide with an increase in public transit (from 4.4 to 4.8 percent) and working from home (from 3.9 to 5.2 percent), but it is unclear if the changes are directly correlated.

Despite the recent decrease, the Albuquerque MSA stands above the national overall in total auto commuting, mostly due to the high rate of commuters driving alone. The metropolitan area also stands below the nation overall in the percentage of work trips taken by transit or walking, but significantly above the national average in bicycle commuting.

**Figure 6: Commuting Share by Mode, 2013 – USA and Albuquerque Metropolitan Area**



### ***Discussion***

Changes in commuting travel behavior are clearly influenced by economic well-being and by growth patterns. For example, the increase in work at home activity coincides with economic recession as well as technological advances and changing business practices that make working remotely more feasible. Meanwhile the decline in carpooling appears to be largely a function of urban form as decreased residential density and the decentralization of employment sites make it less practical for many commuters to share vehicle trips.<sup>vi</sup>

Other important trends are demonstrated in the Census Bureau report, including evidence of changing behavior based on age and geography. In particular, urban workers of all age groups commuted less by car in 2013 than in 2006, and the percentage decrease was greatest among young urban workers (age 25-29). Young workers were also responsible for significant increases in commuting share for public transit, biking, and walking.<sup>vii</sup>

The great benefit of American Community Survey is the longitudinal nature of the data, and that a greater inventory of data will emerge over time. However, the ACS data presents an incomplete picture of travel behavior since the focus lies exclusively on commuting patterns. The ACS commuting data is therefore a valuable companion to studies of behavior across 24-hour periods, such as the National Household Travel Survey, conducted most recently in 2009, and the Mid-Region Household Travel Survey (MRHTS), conducted in winter 2013/2014 for Bernalillo, Sandoval, and Valencia Counties.<sup>viii</sup> These travel surveys are cross-sectional, or point in time studies, and provide an understanding of travel behavior for all trip types.

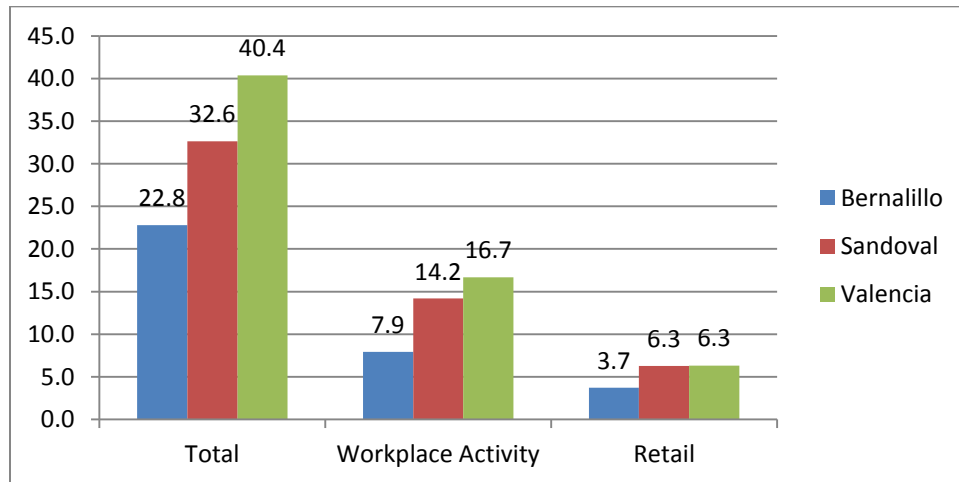
**Figure 7: Share of Total Trips by Mode by County, Mid-Region Household Travel Survey**

Mode	Bernalillo	Sandoval	Valencia
Driver	68.0%	70.6%	69.4%
Passenger	16.5%	19.6%	20.6%
Public Transit	2.7%	2.3%	1.7%
Walk	8.3%	4.2%	3.9%
Bike	2.0%	0.2%	0.1%
Other	2.4%	3.1%	4.4%

Figure 7 demonstrates the percentage of all trips in Bernalillo, Sandoval, and Valencia Counties that take place by each mode. A particularly noteworthy finding of the MRHTS is the fact that a greater number of total trips are taken by walking, biking, and public transit than indicated in the ACS data. That is, there is a disproportionate share of non-auto trips are for non-commuting purposes. This reflects different behaviors for university-bound students or professionals taking trips for coffee or lunch. Likewise, the higher percentage of passenger trips is heavily influenced by school and recreational trips involving children.

The MRHTS also reinforces geographic differences in travel behavior, as Bernalillo County residents are the most likely to take trips by modes other than private vehicle. This finding is logical given that the greatest infrastructure exists for alternative modes of transportation in Bernalillo County, and that average trip lengths are substantially shorter among Bernalillo County residents than for residents of Sandoval and Valencia Counties (see Figure 8). Thus, the MRHTS also reinforces the relationship between trip length and the likelihood of taking non-motorized travel modes.

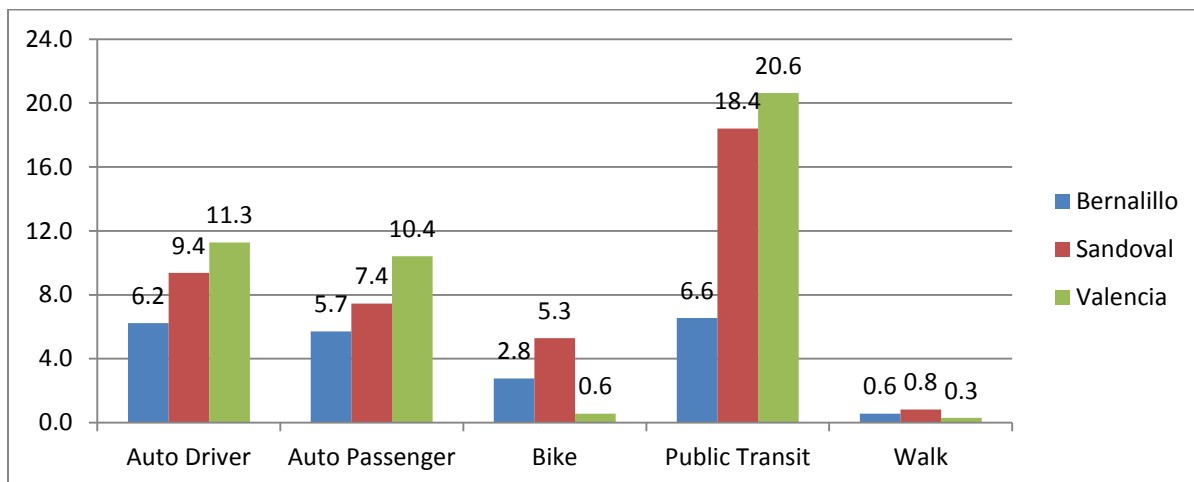
**Figure 8: Average Trip Lengths by County, Mid-Region Household Travel Survey**



Both the ACS and MRHTS data indicate the growing role of transit across the region. Even though transit mode shares remain relatively low, transit commuting has increased over time. And the total percentage of trips by transit for each county are substantially higher than the commuting mode share totals, indicating large numbers of trips by students and for recreational purposes. The length of transit trips made by Sandoval and Valencia County residents (more than 20 miles on average per trip) reflects the

role the New Mexico Rail Runner Express plays in providing long-distance travel options across the region (see Figure 9).

**Figure 9: Average Trip Length by Mode by County, Mid-Region Household Travel Survey**



In summary, the decrease in overall auto commuting could have benefits in terms of reduced congestion and lower emissions. However, the fact that the percentage of drive alone commuting trips has remained constant or increased over time indicates that there have not yet been fundamental shifts in travel behavior, even if there is growing evidence of evolving travel behavior and demand for a greater range of transportation options. To achieve true progress in reducing vehicle dependency and to experience the benefits from more sustainable transportation behavior, the percentage of trips taken by single-occupancy vehicles, and not just automobile trips, must be addressed.

For more information on the results of the Household Travel Survey, consult the Changing Trends and Travel Preferences section at the beginning of Chapter 3 in the *Futures 2040 MTP*.

<sup>i</sup> The MSA includes Bernalillo, Sandoval, Torrance, and Valencia Counties. Although Torrance County is considered part of the Albuquerque MSA, it has not been included in this analysis due to data quality and comparability issues.

<sup>ii</sup> All values in this report refer to percentage points. Therefore an increase from 1.0 percent to 2.0 percent equals an increase in 1.0 percentage points.

<sup>iii</sup> A concern of the ACS 1-year data is that some variables contain very detailed categories with high margins of error that result in less precise and more volatile estimates for commuting by alternative modes.

<sup>iv</sup> Smaller sample sizes, even across three years, produces relatively high margins of error for low value numbers. For example, 2.0 percent of Valencia County residents commuted by “other” modes from 2006-2008, with a margin of error of 1.2 percent, meaning the actual range is 0.8-3.2 percent. The ACS conducts an annual sample size of 3.5 million addresses. What the 3-year and 5-year datasets make up for in terms of sample size and accuracy, they lose in specificity as the data reflects a rolling sample across multiple years. Therefore, the 3-year 2013 ACS dataset is actually a rolling sample of 10.5 million addresses with responses given between the years 2011 and 2013 (3.5 million addresses for each of three years).

<sup>v</sup> “Other” modes include taxi, motorcycle, among other unaccounted for modes.

<sup>vi</sup> U.S. Census Bureau. “Who Drives to Work? Commuting by Automobile in the United States: 2013,” August 2015, p. 3

<sup>vii</sup> U.S. Census Bureau. “Who Drives to Work? Commuting by Automobile in the United States: 2013,” p. 7-9

<sup>viii</sup> The MRHTS was conducted by the Mid-Region Council of Governments and featured a sample size of 2,471 households.