Driving Trends and Transportation Funding in the West

Budgets Can Support Further Reductions in Driving

By Mike Salisbury and Will Toor

August 2015

SWEEP

SOUTHWEST ENERGY EFFICIENCY PROJECT

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The Southwest Energy Efficiency Project is a public interest organization dedicated to advancing energy efficiency in Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming. For more information, visit www.swenergy.org.

SWEEP's Transportation Program seeks to identify and promote the implementation of policies designed to achieve significant energy savings and reductions in greenhouse gas emissions from the transportation sector. SWEEP's work focuses on two general strategies: reducing vehicle miles traveled and improving vehicle fuel efficiency.

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EXECUTIVE SUMMARY

Americans' love affair with driving is cooling off. Yesterday's young baby boomers may have eagerly traveled America's burgeoning network of roads and highways but today many are retired and not driving as much anymore. In the boomers' place are young workers who are often indifferent to car ownership. Particularly in urban areas, they often find it easier to bike or use public transit to get around. Some work from home and don't commute at all.

This shift in attitudes toward driving is just as apparent in the Southwest as it is elsewhere in America. From 1980 until 2006, each resident of the six southwestern states covered in this report (Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming) drove an average 1.2 percent more miles each year. But then they began driving less, reducing mileage by an average 1.2 percent a year through 2013, the last year for which full annual numbers are available.[1] Despite population growth, overall road travel in the region has not increased in recent years. From 1980 until 2006, road travel grew by an average 3.8 percent more miles every year but after that, the average annual change has been a decrease of 0.03 percent through 2013. And while total driving has remained flat, the region's major metropolitan areas have seen increasing levels of transit use.

Figures ES-1 and ES-2 show the trends in each state for total Vehicle Miles Travelled (VMT) and for per capita VMT.

[1] The Federal Highway Administration (FHWA) publishes preliminary monthly data, which at the time of this publication is available through March 2015. This preliminary data does indicate an increase in driving in 2014 and early 2015.

Figure ES-1 | Average Annual Rate of Change in total VMT, 1980-2006 and 2006-2013

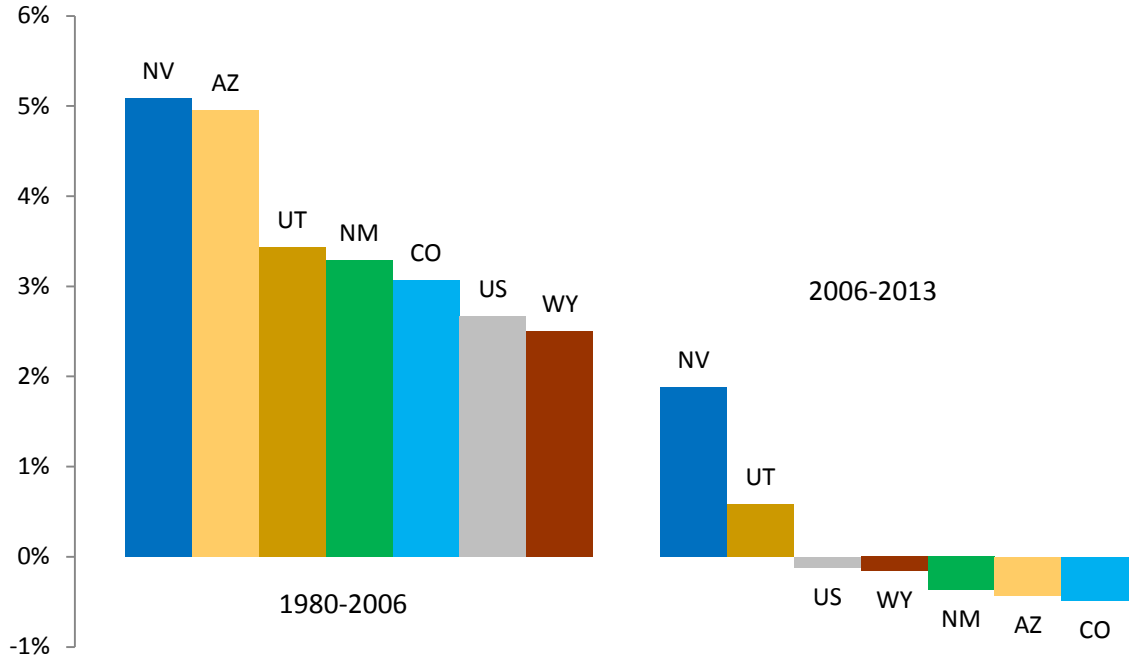
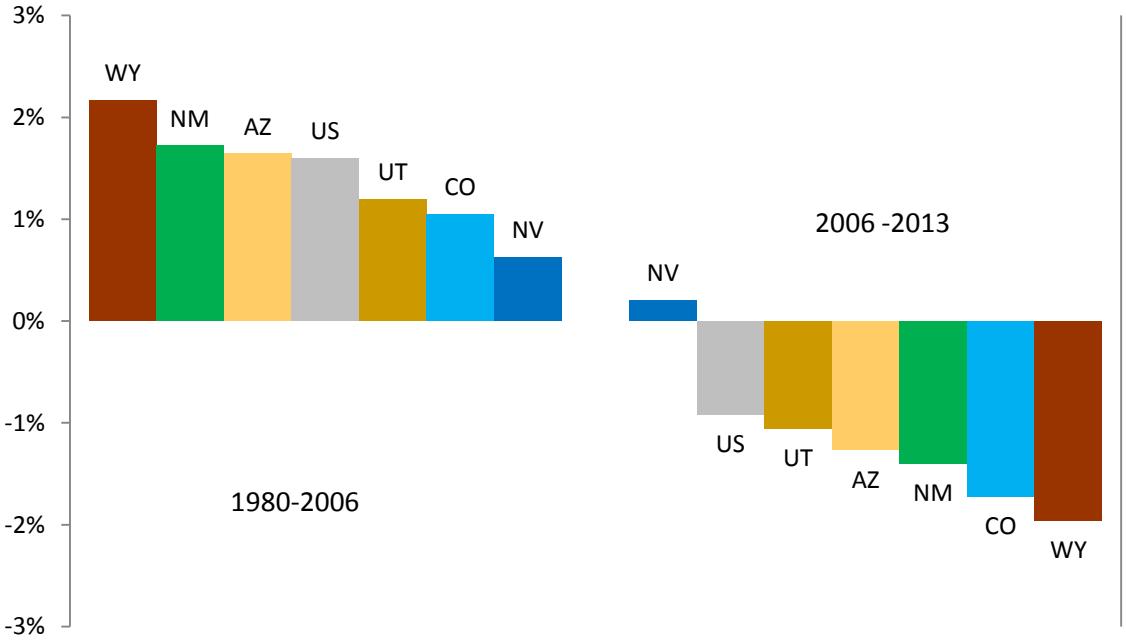
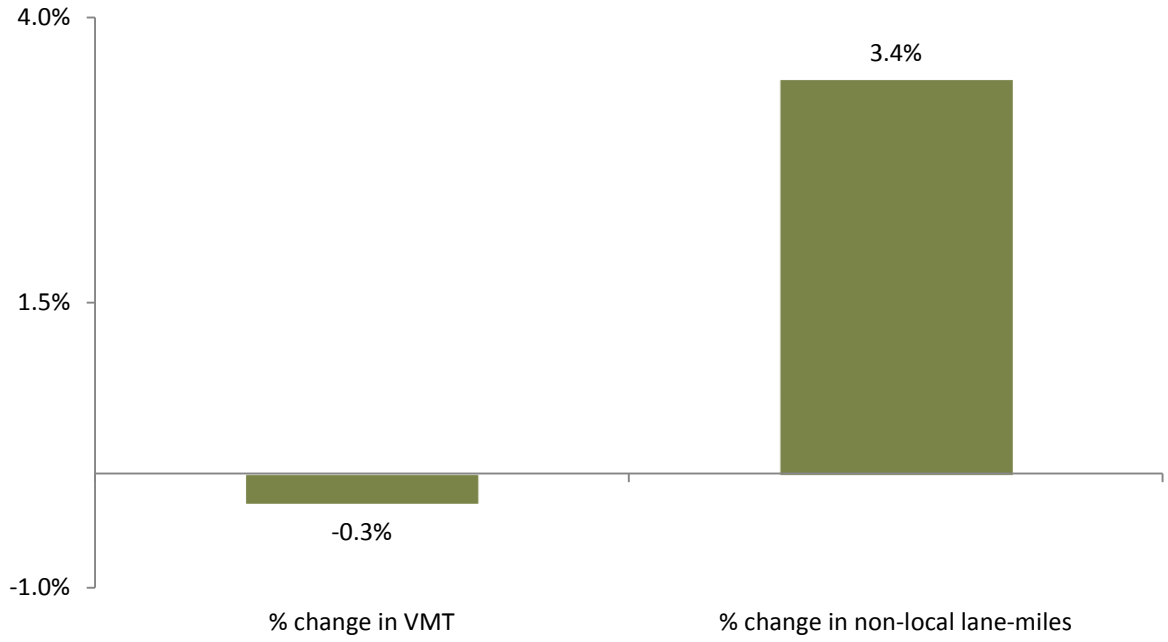


Figure ES-2 |Average Annual Rate of Change in VMT per Capita, 1980-2006 and 2006-2013



Despite this decrease in driving, southwestern states have continued to expand their road networks. Since 2006, non-local roadway lane miles have increased by 3.4 percent in southwestern states while total miles driven have fallen by 0.3 percent.

Figure ES-3 | Percent Change in Lane Miles and Vehicle Miles Traveled (VMT) in Southwestern States, 2006-2013



Metropolitan planning organizations (MPOs), which are responsible for transportation planning in the Southwest's major urban areas, have incorporated this trend toward less driving in their most recent set of Regional Transportation Plans (RTPs). While not all RTPs reflect the most recent trend in reduced driving, they all are making less aggressive forecasts regarding VMT growth and several forecast decreases in VMT per capita over the course of the plan. Between their previous and most recent RTPs, the MPOs have decreased their total driving estimates by 21 percent.

These reductions in VMT growth have many positive impacts. Less driving reduces demand for new roadways and lessens wear and tear on existing roads, both of which lead to lower expenditures on roadway infrastructure. Reduced VMT also means reductions in consumption of gasoline, emissions of harmful air pollutants, and emissions of greenhouse gases. In addition, to the extent that reduced VMT is connected to changes in urban form and travel behavior that lead to more walking and biking, there are important direct health benefits. Thus, state DOTs and MPOs should not only respond to the trend towards lower VMT, but should direct transportation investments in ways that will support and enhance this trend.

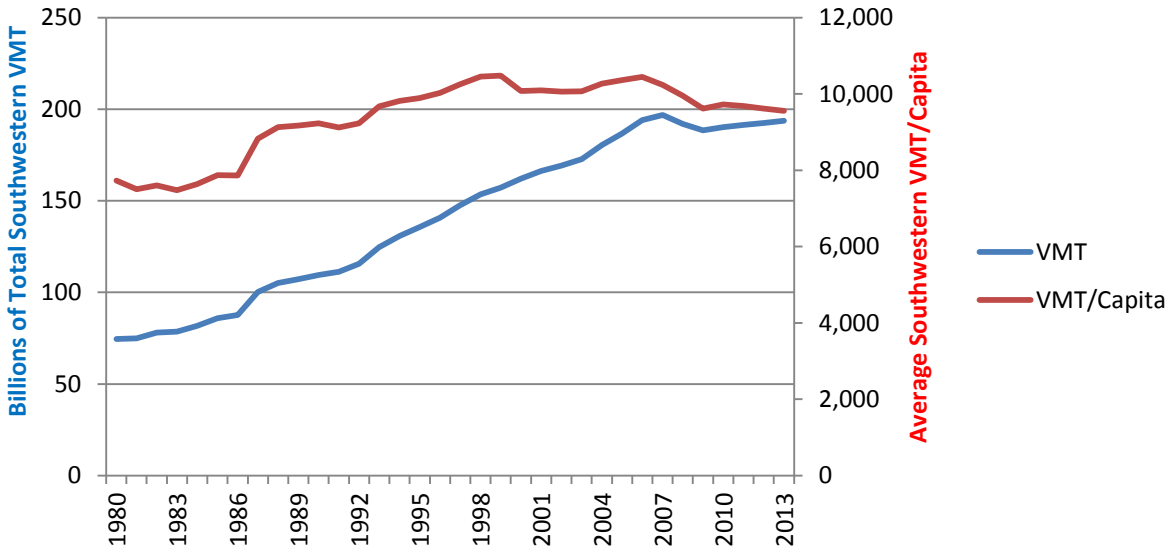
So why aren't transportation planners adjusting their budget allocations to accommodate and support this trend? Public demand for bike lanes, public transit and safe pedestrian routes is growing at the same time that the public is driving less, yet the vast majority of transportation dollars are still earmarked for road construction. The allocation of funding in the RTPs between roadways and driving alternatives such as transit, bike and pedestrian infrastructure has generally remained consistent with past RTPs, in which the vast majority of funding was directed at roadway related projects. Previous RTPs allocated 75 percent of funding to roadways, compared to 72 percent in the most recent RTPs. And state DOTs continue to spend the vast majority of their funds on roads.

Based upon the findings in this report, SWEEP recommends that transportation planners develop spending plans that that shift investment away from roadways and towards public transit, bikeways and pedestrian infrastructure. SWEEP also recommends that states publish their VMT forecasts (as Colorado has done) so that the public has an opportunity to understand how their transportation departments justify new roads. We also recommend that DOTs and MPOs adopt specific goals for VMT reduction. For example, the MPO in the Denver area has adopted a goal of a 10 percent reduction in per capita VMT over the next 25 years.

INTRODUCTION

Across the United States, the last decade has seen a shift away from driving patterns that had prevailed since the end of World War II. For nearly 60 years, total miles driven and miles driven per capita increased steadily until a shift began to occur in the mid-2000s. Since then total VMT has remained flat and VMT per capita has fallen.[2] Preliminary data from 2014 and early 2015 suggest increases in VMT and VMT per capita nationwide as well as in the Southwest, but it is unclear whether this is a temporary blip or the beginning of a new trend.

Figure 1 | Total VMT and VMT per capita for the Southwest, 1980-2013



There are a number of possible explanations for the decrease in VMT per capita over the last decade. Since a peak in the early 2000s, the workforce participation rate has declined and people tend to drive less when they are not working, both because they no longer commute and their lower income will tend to reduce economic activity.[3] A demographic phenomenon contributing to this trend is the retirement of the baby boom generation, which is shifting a large demographic group away from employment-related commuting. At the other end of the demographic spectrum, millennials between the ages of 16-34 have shown much lower rates of driving than older generations.[4] Among workers, the increase in telecommuting would also result in less driving.[5]

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[2] Total miles driven (or vehicle miles traveled) is a useful metric because it indicates the total amount of vehicle travel and demand for roadways. Miles driven per capita (or vehicle miles traveled per capita) indicates how the travel behavior of individuals may be shifting independent of the growth in population.
[3] Energy Information Administration. 2014. Light-duty vehicle energy demand: demographic and travel behavior. http://www.eia.gov/forecasts/aeo/veh_demand.cfm.
[4] US PIRG Education Fund. Moving Off the Road. 2013. http://www.uspirg.org/reports/usp/moving-road

Lower rates of vehicle ownership and of holding driver's licenses have also contributed to fewer miles driven per person.[6] Finally, gasoline prices began climbing across the country in 2003 and generally remained at higher levels than previously experienced; the increased fuel cost may have encouraged many drivers to choose to drive less.

Similar trends are seen in the Southwest. Between 1980 and 2006, VMT grew at an annual rate of 3.8 percent in the Southwest compared to 2.7 percent in the nation as a whole. During the same time period, VMT per capita grew at an average annual rate of 1.2 percent in the Southwest compared to 1.6 percent nationwide. Between 2006 and 2013, VMT per capita fell by 8.4 percent in the Southwest.

COMPARISONS OF SOUTHWESTERN STATES AND METRO AREAS

Comparison of Southwestern States

Figure 2 on the following page shows the overall trend of increasing total VMT until approximately 2007, after which each state except Nevada has experienced falling or relatively flat VMT.

Figure 3 shows that VMT per capita generally peaked between 2002 and 2007 and has declined since then (except for Nevada, which peaked in 1998).

Figure 4 shows how much decline in per capita VMT each state has experienced between its respective peak and 2013.

Figure 5 shows the shift in how much annual VMT per capita changed between the decades before and after 2005. Between 1980 and 2006 all the southwestern states had positive values. Since 2006, only Nevada still has a positive value.

Figure 6 shows the significant slowdown in growth rates for total VMT since 2006. Prior to 2006 all southwestern states save Wyoming had annual growth rates above three percent. Since 2006, only Nevada and Utah still have a positive annual VMT growth rate.

[5] Energy Information Administration. 2014. Light-duty vehicle energy demand: demographic and travel behavior. http://www.eia.gov/forecasts/aeo/veh_demand.cfm.
[6] US PIRG Education Fund and Frontier Group. 2013. A New Direction. http://www.uspirg.org/reports/usp/new-direction.

Figure 2 | Total VMT in each Southwestern State, 1980-2013

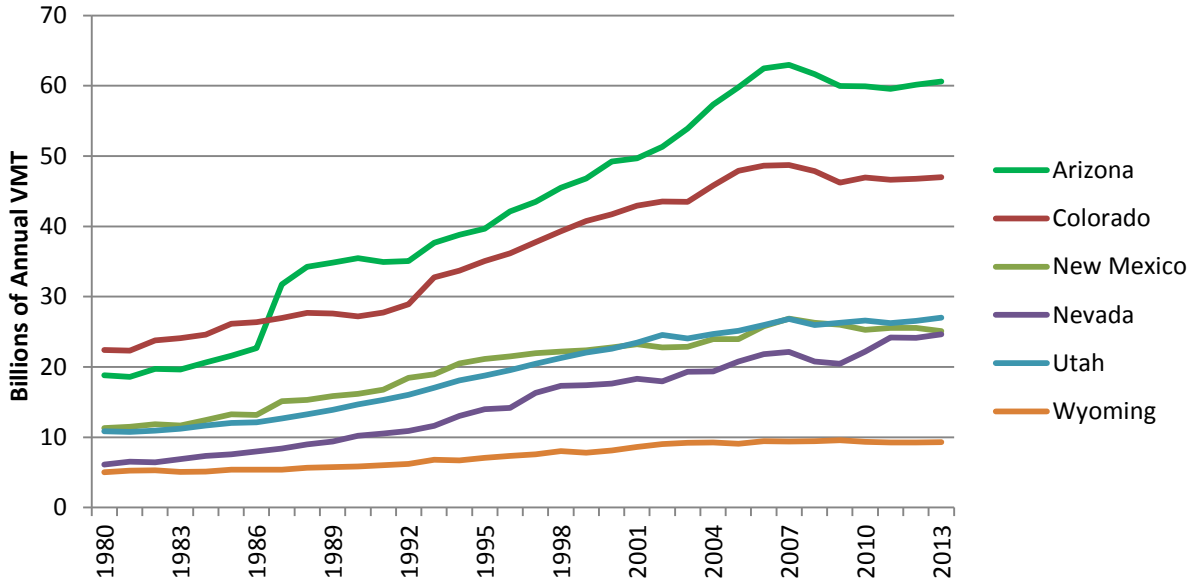


Figure 3 | VMT per Capita in each Southwestern State, 1980-2013

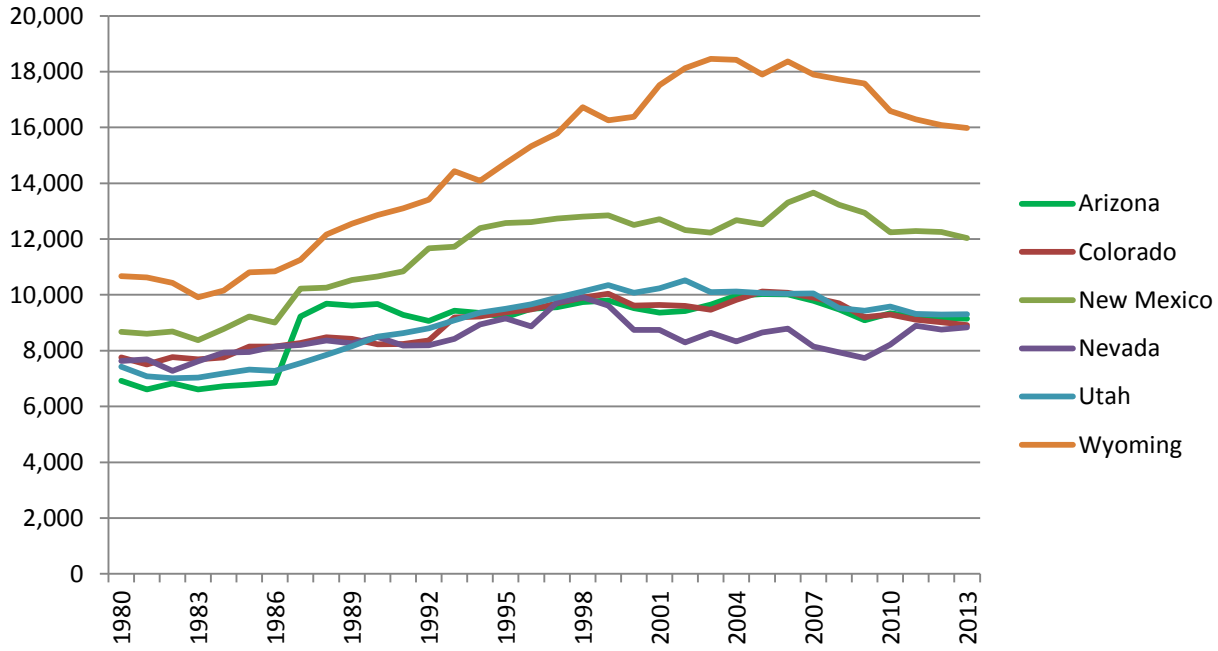


Figure 4 | Percent Decline in VMT per Capita since Peak in Southwestern States, as of 2013

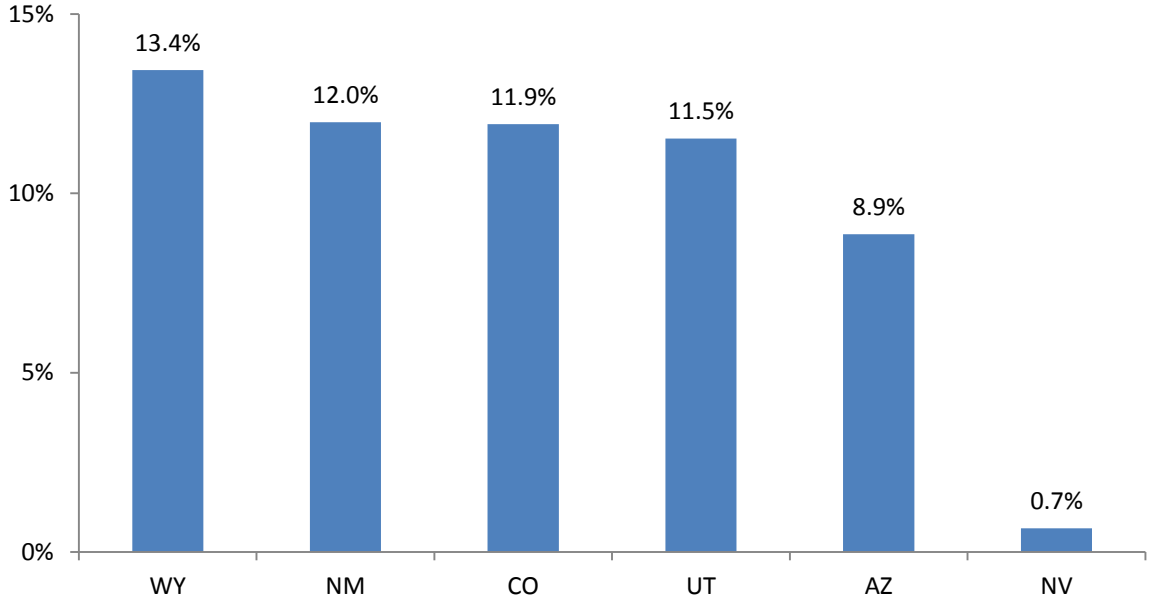


Figure 5 | Average Annual Percent Change in VMT per Capita, 1980-2006 and 2006-2013

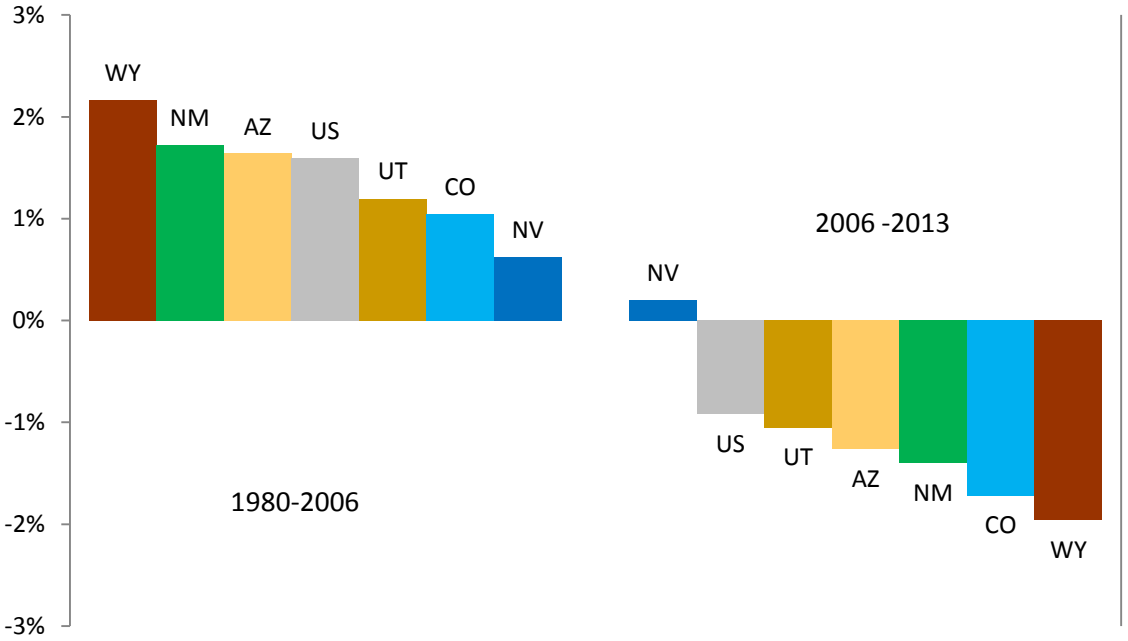
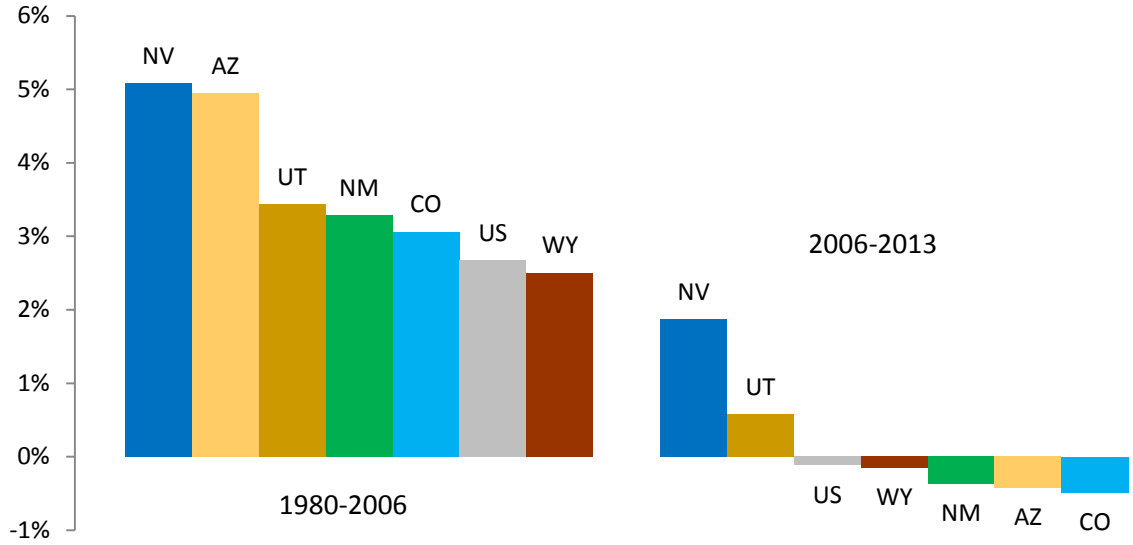
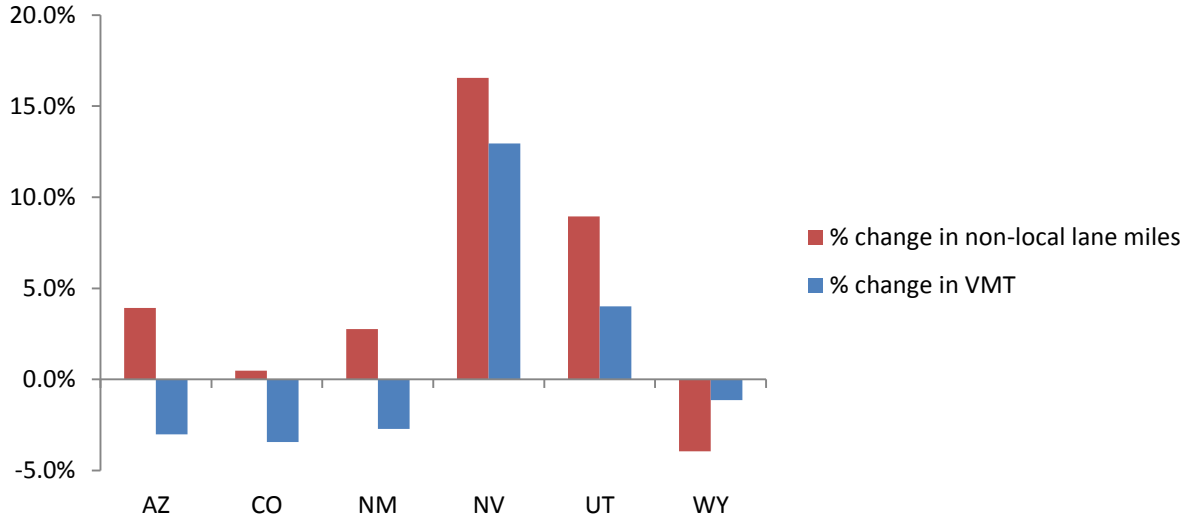


Figure 6 | Average Annual Percent Change in VMT, 1980-2006 and 2006-2013



Despite this slowing in the growth rate of total VMT, states are still adding roadway lane-miles at rates greater than that of VMT growth. Figure 7 compares the cumulative change in VMT and lane-miles from 2006 and 2013, showing that all states except Wyoming have seen roadway lane-miles grow faster than VMT. To avoid the possibility that growth in roadway miles reflected developers simply turning over local roads to local governments rather than the addition or expansion of larger roads, local roads (as classified by the Federal Highway Administration (FHWA)) have not been included.

Figure 7 | Percent Change in VMT and Roadway Lane-Miles between 2006 and 2013



Comparison of Metropolitan Planning Organizations

There are indications that the metropolitan planning organizations (MPOs) in the major urban areas are beginning to adjust their forecasts of future travel demand to reflect the recent trend in slower VMT growth and falling VMT per capita. Table 1 shows how VMT per capita forecasts for each MPO have changed between their two most recent Regional Transportation Plans (RTPs). RTPs typically project 25 years into the future and are updated every five years. The table also shows (where sufficient data is available) the annual average percent change in VMT per capita experienced by each region since 2006.

Table 1 | Shift in VMT per capita Growth Rates Forecast by Major Southwestern MPOs

MPO	Previous RTP	Most Recent RTP	Historic VMT/capita Growth Rate 2006-2013
Phoenix, AZ (MAG)	0.67%	0.30%	-0.07%
Tucson, AZ (PAG)	0.43%	0.29%	-0.27%
Denver, CO (DRCOG)	0.26%	-0.20%	-0.28%
Colorado Springs, CO (PPACG)	0.40%	-0.21%	
Albuquerque, NM (MRCOG)	0.44%	-0.001%	-1.33%
Salt Lake City, UT (WFRC)	NA	0.38%	0.76%
Clark County, NV (RTC-SN)*	2.1%	1.5%	2.2%
Washoe County, NV (RTC-WC)*	2.3%	1.3%	0.2%

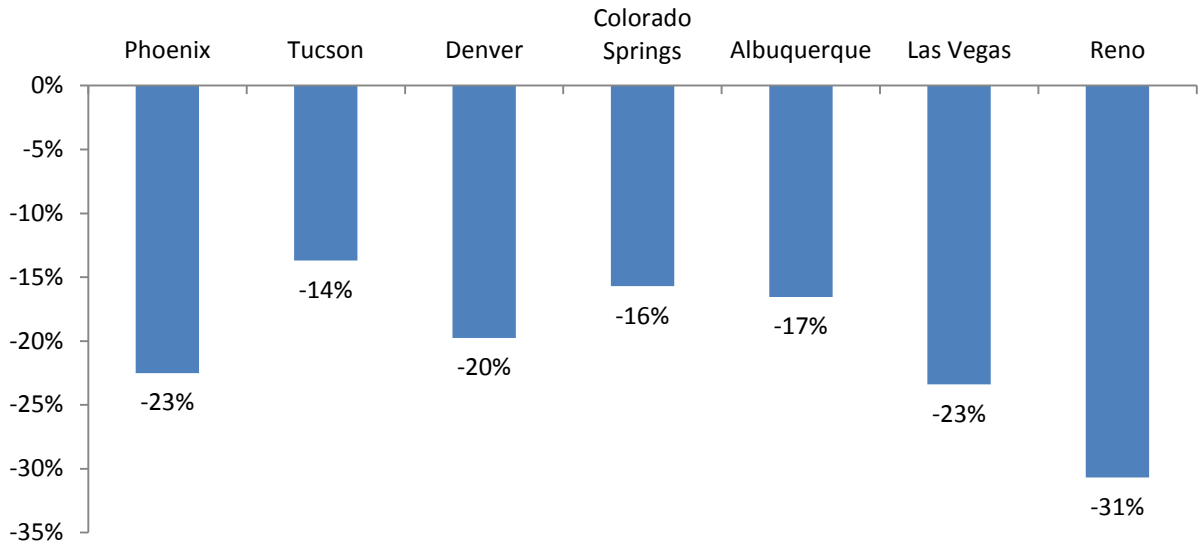
**Rates for Clark and Washoe County Nevada are for change in VMT growth rate, not VMT per capita growth rate.*

Figure 8 shows the percent decrease in total VMT forecast by the MPOs between their previous and most recent RTPs. Each MPO has significantly reduced the total amount of daily VMT forecast for the final year of their RTP, with reductions between 14 and 31 percent. The latest forecasts assume many millions less of daily VMT in the metropolitan areas.

It should be noted that the preliminary data from FHWA shows that in 2014, VMT per capita is expected to increase in every southwestern state except Arizona.[7] The increase in driving may be linked to the significant drop in gasoline prices seen in the second half of the year. Nationally, VMT grew 0.4 percent during the first part of the year compared to the first half of 2013; after gasoline prices dropped, VMT grew 2.1 percent compared to the second half of 2013.[8] In the Southwest, VMT growth in 2014 (compared to 2013 levels) increased from 2.1 percent during the first half of the year to 3.0 percent during the second half.

[7] Federal Highway Administration. 2015. Travel Monitoring and Traffic Volume. http://www.fhwa.dot.gov/policyinformation/travel_monitoring/15martvt/page6.cfm.
[8] Federal Highway Administration. 2015. Travel Monitoring and Traffic Volume. http://www.fhwa.dot.gov/policyinformation/travel_monitoring/15martvt/page6.cfm.

Figure 8 | Percent Change in Forecast Total VMT from Previous to Most Recent RTP[9]



DRIVING DATA AND TRANSPORTATION BUDGETS IN INDIVIDUAL STATES AND MAJOR METROPOLITAN AREAS

Arizona

Statewide, Arizona has seen its total annual VMT decline from a peak of 62.9 billion in 2007 to 60.5 billion in 2013, near the levels experienced in 2005.[10] VMT per capita peaked in 2006 at just over 10,000 VMT per person per year and has fallen or remained flat since then. As of 2013, it had declined to the 1995 level of 9,143.[11]

Statewide, between 1980 and 2006, VMT per capita grew at an average annual rate of 1.6 percent. Since 2006, VMT per capita has fallen at an average annual rate of 1.3 percent.

[9] To make an equitable comparison between RTPs, data from the previous RTP, which usually has an earlier final year (2030 rather than 2035 for the most recent RTP), was extended using the same average annual rate of growth for the previous years. For example, DRCOG's 2011 RTP forecast 119 million daily VMT by 2035, with a 1.9% growth rate in total VMT between 2010 and 2035. The 1.9% growth rate was applied to the years 2035 to 2040 to line up the final year in the most recent RTP, 2040.
[10] Federal Highway Administration. 2014. Highway Statistics Series. Table 5.4.1. Vehicle miles of travel by functional system. http://www.fhwa.dot.gov/policyinformation/statistics.cfm.
[11] Ibid. Table 6.3.1. Licensed drivers – Ratio of licensed drivers to population. http://www.fhwa.dot.gov/policyinformation/statistics.cfm.

At the same time that total VMT has fallen, the number of non-local roadway lane miles in the state has increased by 3.9 percent since 2006.[12]

Figure 9 | Percent Change in Total VMT and Non-local Roadway Lane Miles in Arizona since 2006

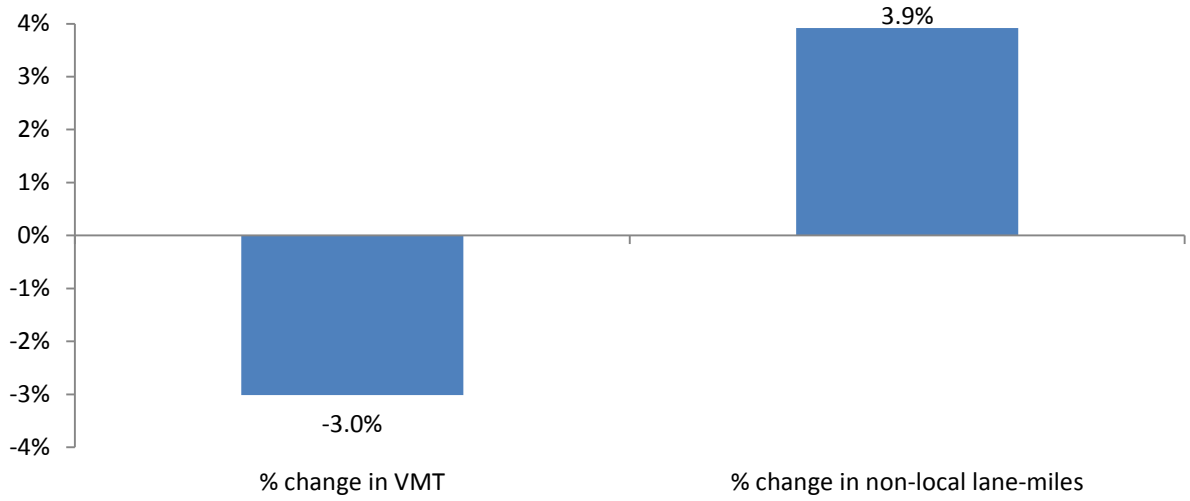
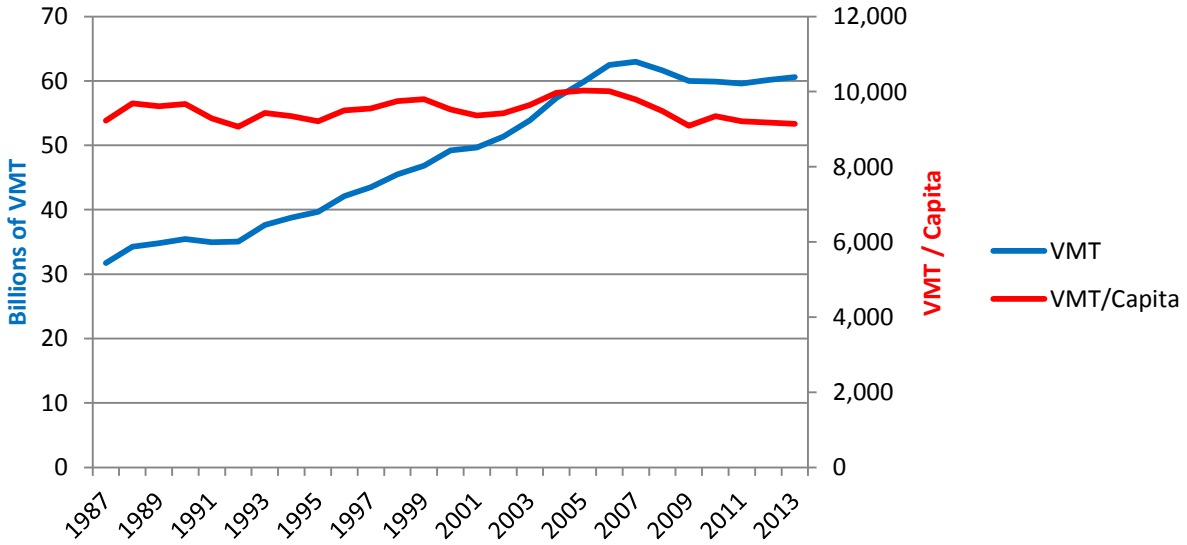


Figure 10 | Total Annual VMT and VMT per Capita in Arizona, 1987-2013[13]



[12] Ibid. Table 4.4.1.4. Estimated lane-miles by functional system. http://www.fhwa.dot.gov/policyinformation/statistics.cfm.

[13] There is an unexplained large jump (40%) in VMT between 1986 and 1987 that may be due to a change in measurement rather than an actual huge increase in driving. This is why this figure begins in 1987.

Maricopa County, home to Phoenix and 61 percent of the state's population, has experienced a similar trend with total daily VMT[14] staying relatively flat since 2007 and daily VMT per capita peaking at 23.7 miles in 2004.[15] While driving levels around Phoenix have remained flat, between 2006 and 2013 total transit use (in passenger miles traveled) has increased by 32 percent.[16]

Pima County, home to Tucson and 15 percent of the state's population, saw its total daily VMT peak in 2007 and its daily VMT per capita peak in 2006.[17] Even while total VMT has not increased, use of Tucson's transit system (in passenger miles traveled) has grown 26 percent from 2006 to 2013.[18]

Figure 11 | Daily VMT per Capita in Maricopa and Pima Counties, 2000-2013

Maricopa Association of Governments (MAG)

While the state does not release VMT forecasts, the two major MPOs in Arizona do make forecasts as part of their Regional Transportation Plans (RTPs). In the 2035 RTP (released in January of 2014), MAG predicted that between 2011 and 2035 regional daily VMT would increase from 75.6

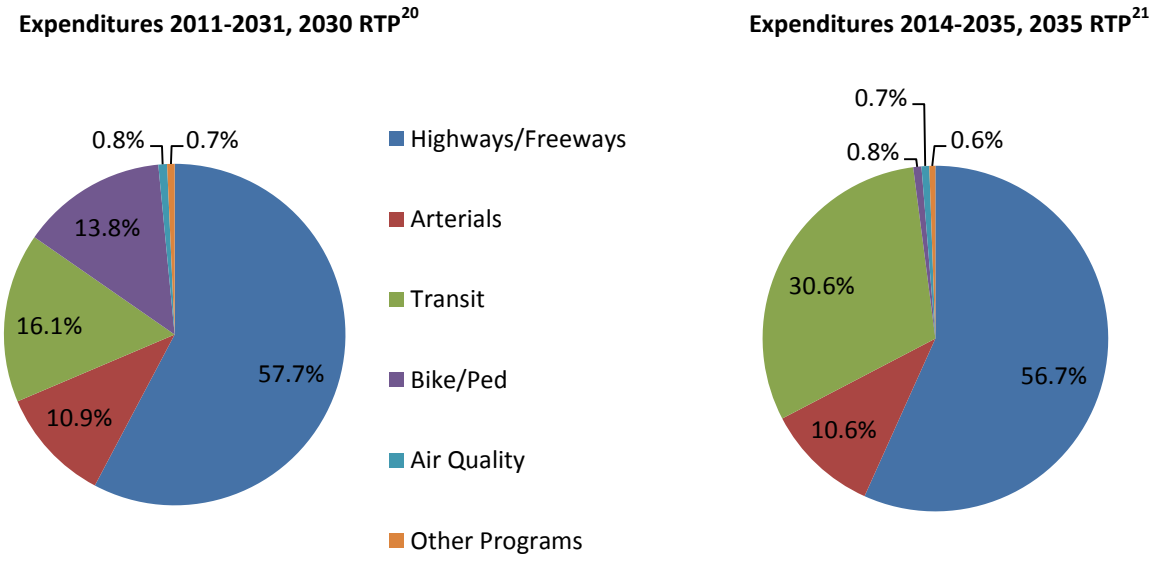
[14] MPOs report daily VMT to reflect traffic on an average weekday whereas state DOTs report annual VMT.
[15] Arizona Department of Transportation. 2014. Data and Analysis. Daily Vehicle Miles of Travel by County. http://azdot.gov/planning/DataandAnalysis/highway-performance-monitoring-system.
[16] National Transit Database. 2015. TS2.2 Service Data and Operating Expenses Time-Series by System, http://www.ntdprogram.gov/ntdprogram/data.htm.
[17] Arizona Department of Transportation. 2014. Data and Analysis. Daily Vehicle Miles of Travel by County. http://azdot.gov/planning/DataandAnalysis/highway-performance-monitoring-system.
[18] National Transit Database. 2015. TS2.2 Service Data and Operating Expenses Time-Series by System, http://www.ntdprogram.gov/ntdprogram/data.htm.

million to 122.9 million and that daily VMT per capita would increase from 18.4 to 19.8 miles.[19] These growth rates assume that VMT per capita would grow at an annual rate of 0.3 percent annually. This is close to the trend from 2000-2013, when VMT per capita grew at an average rate of 0.23 percent and different from the trend from 2005-2013 when VMT per capita declined at an average rate of -0.41 percent annually.

Table 2 | Comparison of Daily VMT Projections by MAG

RTP	Projected VMT	Projected VMT/Capita	Average Annual VMT/Capita Growth Rate
2030 RTP	139.7 million (by 2030)	21.9	0.67%
2035 RTP	122.9 million (by 2035)	19.8	0.30%

Figure 12 | Comparison of Spending Priorities between MAG's Two Most Recent RTPs



[19] Maricopa Association of Governments. 2014. 2035 Regional Transportation Plan. https://www.azmag.gov/Documents/RTP_2014-01-30_Final-2035-Regional-Transportation-Plan-(RTP).pdf.
[20] Maricopa Association of Governments. 2010. 2010 Regional Transportation Plan. https://www.azmag.gov/addons/MAG/download.asp?ID=9056
[21] Maricopa Association of Governments. 2014. 2035 Regional Transportation Plan. https://www.azmag.gov/Documents/RTP_2014-01-30_Final-2035-Regional-Transportation-Plan-(RTP).pdf

Compared to the previous RTP published in 2010,[22] the 2035 RTP (released in 2014) makes less aggressive assumptions about total VMT and VMT per capita growth and estimates significantly reduced VMT in the MAG region. The 2035 RTP projects 122.9 million daily VMT by 2035, almost 17 million less than the 2030 RTP projected by 2030.[23] If the VMT growth rate in the 2030 RTP were extended to 2035, it would estimate 158.6 million VMT, which is 35.7 million VMT more than the most recent estimate.

Despite the significant drop in projected VMT, there was virtually no shift in the percentage of expected expenditures on roads; the 2030 RTP allocated 68.6 percent to highways, freeways and arterials, while the 2035 RTP allocated 67.3 percent. The biggest shift was that in the 2035 RTP the funding for bike and pedestrian projects was mostly eliminated and more funding was put into transit projects.

Pima Association of Governments (PAG)

For Pima County, VMT per capita is expected to increase from 22.7 miles per day in 2011 to 24.8 miles per day in 2040, assuming an annual increase of 0.29 percent. Since 2006, the VMT per capita has declined an average of -0.29 percent annually. The previous RTP forecast VMT per capita to grow at a rate of 0.43 percent; if that VMT growth trend were extended to 2040, it would have forecast 54.5 million daily VMT. The more recent RTP estimates 14 percent less VMT in the region by 2040.

Table 3 | Comparison of VMT Projections by PAG

RTP	Projected VMT	Projected VMT/capita	Average Annual VMT/capita Growth Rate
2030 RTP[24]	42.2 million (by 2030)	25.2	0.43%
2040 RTP[25]	47.1 million (by 2040)	24.8	0.29%

PAG does not provide a breakdown of expenditures by category from their 2030 RTP so it is difficult to see if expenditures were allocated differently between the two RTPs.

[22] The RTP referenced in this report is the Regional Transportation Plan 2010 Update. For ease of comparison between the two RTPs, the 2010 Update is referred to by its end year (like the most recent RTP) of 2030.

[23] Maricopa Association of Governments. 2010. 2010 Regional Transportation Plan. https://www.azmag.gov/addons/MAG/download.asp?ID=9056.

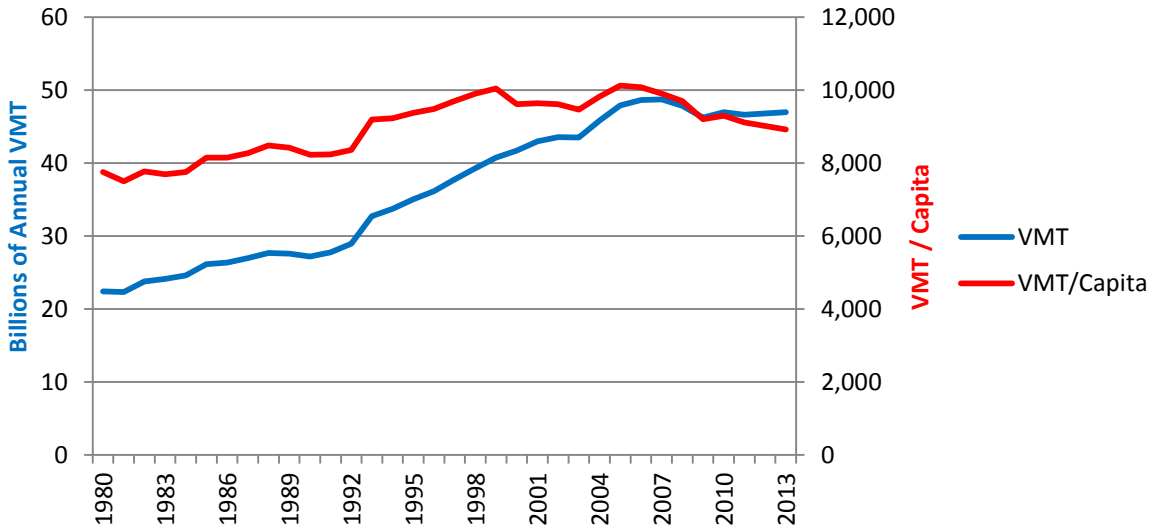
[24] Pima Association of Governments. 2006. 2030 Regional Transportation Plan. http://www.pagnet.org/tabid/382/default.aspx.

[25] Pima Association of Governments. 2012. 2040 Regional Transportation Plan. http://www.pagnet.org/Programs/TransportationPlanning/2040RegionalTransportationPlan/tabid/809/Default.aspx.

Colorado

Colorado hit its peak level of vehicle travel in 2007 with 48.7 billion annual VMT.[26] Annual VMT per capita peaked in 2005 at 10,123 and has declined each year since then, reaching just under 9,000 in 2013, a level last seen in 1993.[27]

Figure 13 | Total Annual VMT and VMT per capita in Colorado, 1980-2013

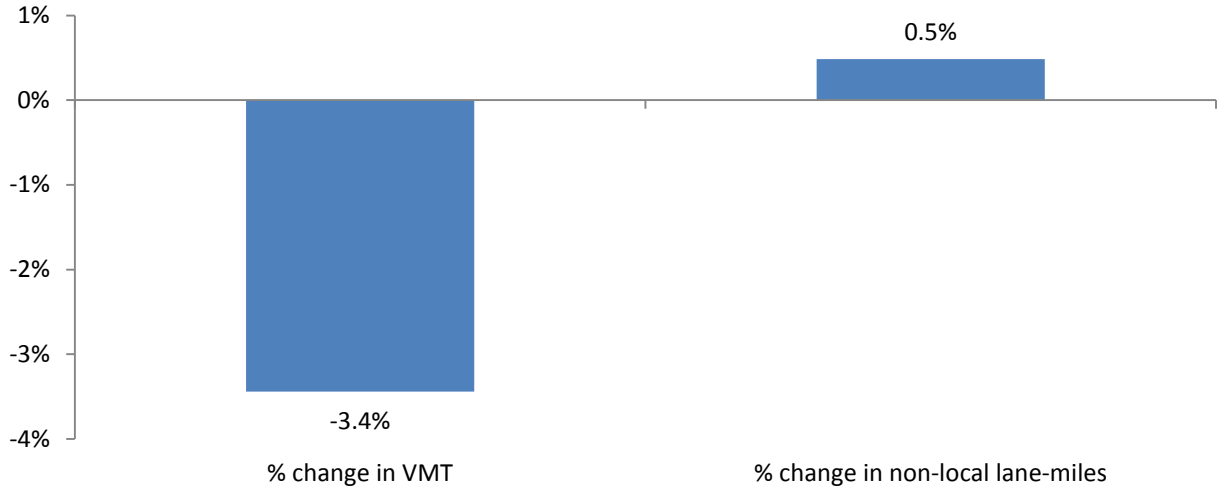


Statewide, between 1980 and 2006, VMT per capita grew at a rate of 1.0 percent annually. Since 2006, VMT per capita has averaged a decrease of 1.7 percent per year, resulting in a cumulative decline of 11.5 percent.

Despite the decline in total VMT, the number of roadway lane-miles in the state has continued to grow. Since 2006, the state has increased non-local lane miles by 0.5 percent while VMT has fallen 3.4 percent.[28]

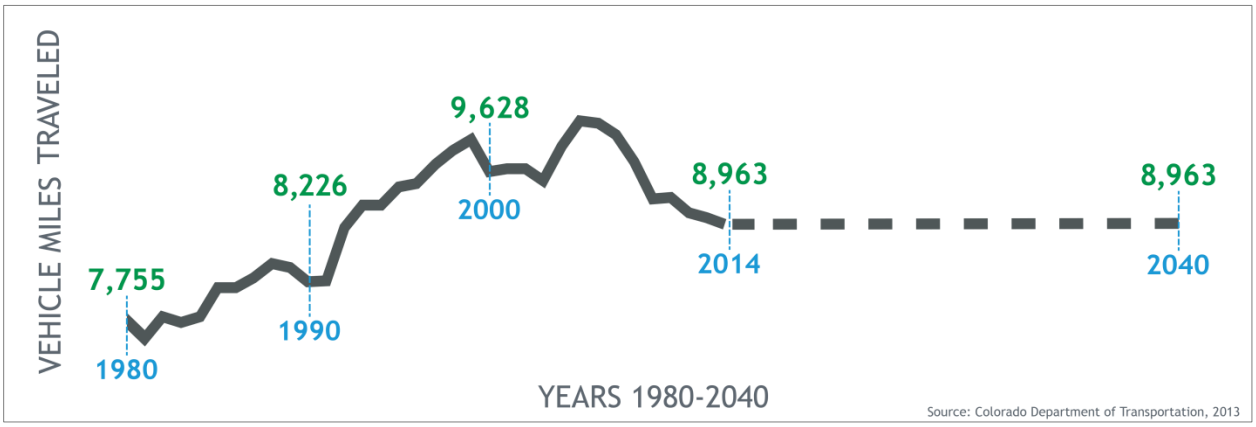
[26] Federal Highway Administration. 2014. Highway Statistics Series. Table 5.4.1. Vehicle miles of travel by functional system. http://www.fhwa.dot.gov/policyinformation/statistics.cfm.
[27] Ibid. Table 6.3.1. Licensed drivers – Ratio of licensed drivers to population. http://www.fhwa.dot.gov/policyinformation/statistics.cfm.
[28] Federal Highway Administration. 2014. Highway Statistics Series. Table 4.4.1.4.Estimated lane-miles by functional system. http://www.fhwa.dot.gov/policyinformation/statistics.cfm

Figure 14 | Percent Change in Total VMT and Non-Local Roadway Lane Miles in Colorado, since 2006



In 2014, the Colorado Department of Transportation released VMT and VMT per capita projections that assume that VMT will grow at the same rate as the state's population.[29] Of all the state DOTs in the Southwest, Colorado is the only one to have publically released their VMT and VMT per capita forecasts.

Figure 15 | VMT Per Capita in Colorado 1980-2040[30]



Graphic reprinted courtesy of Colorado Department of Transportation.

While VMT per capita remaining flat at 2014 levels may not reflect the trend over the last eight years, it seems to be a much more realistic VMT forecast than those made in recent years by USDOT and other state DOTs, which assume that VMT per capita will immediately start rising next year.[31]

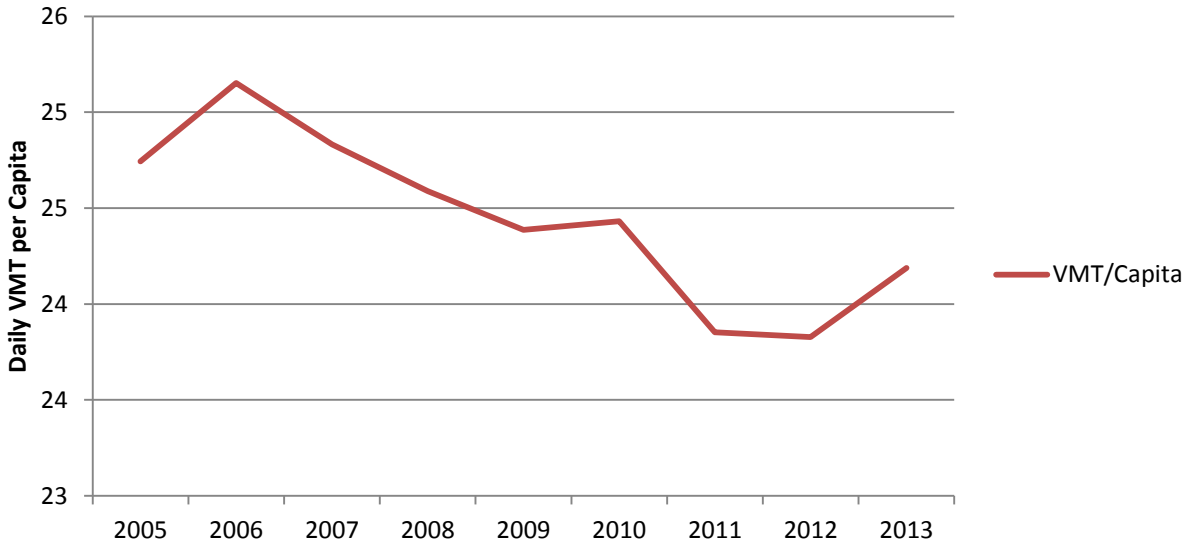
[29] Colorado Department of Transportation. 2014. Mobility. http://coloradotransportationmatters.com/data/mobility/.
[30] Ibid.

One inconsistency is that CDOT is still using older VMT forecasts for decision making on major highway projects. Most notably, CDOT is engaged in an Environmental Impact Study (EIS) for the rebuilding and expansion of I-70 within the eastern part of Denver. Their traffic modeling uses the older, much higher estimates of increasing per capita VMT.[32] In this case, CDOT is planning to spend over $1 billion dollars to rebuild a short section of I-70 and add two tolled lanes in each direction, basing their evaluation on out-of-date estimates of future traffic levels that are substantially higher than current estimates. We would recommend that CDOT use updated VMT projections for the I-70 final EIS.

Denver Regional Council of Governments (DRCOG)

The Denver metro area has experienced a flattening in VMT growth and a decline in VMT per capita as well. Regional VMT per capita peaked in 2006 at 25.15 miles per day and has fallen or remained relatively flat up through 2013 when it was 24.19 miles per day.[33, 34] In contrast to stagnant levels of driving, transit use (in passenger miles traveled) increased 30 percent between 2006 and 2013.[35]

Figure 16 | Daily VMT per Capita in the DRCOG Region, 2005-2013



[31] U.S. PIRG. 2015. U.S. Department of Transportation. Forecasts of Future Driving vs. Reality. http://www.uspirg.org/resources/usp/us-dept-transportation-forecasts-future-driving-vs-reality
[32] Southwest Energy Efficiency Project and Conservation Colorado. Joint Comments Submitted on the I-70 east SDEIS.
[33] MPOs report daily VMT to reflect traffic on an average weekday whereas state DOTs report annual VMT.
[34] Denver Regional Council of Governments. 2014. Regional Snapshot: Metro Vision 2035 Goals. https://drcog.org/sites/drcog/files/resources/Regional%20Snapshot%20-%20Metro%20Vision%202035%20Goals.pdf.
[35] National Transit Database. 2015. TS2.2 Service Data and Operating Expenses Time-Series by System. http://www.ntdprogram.gov/ntdprogram/data.htm.

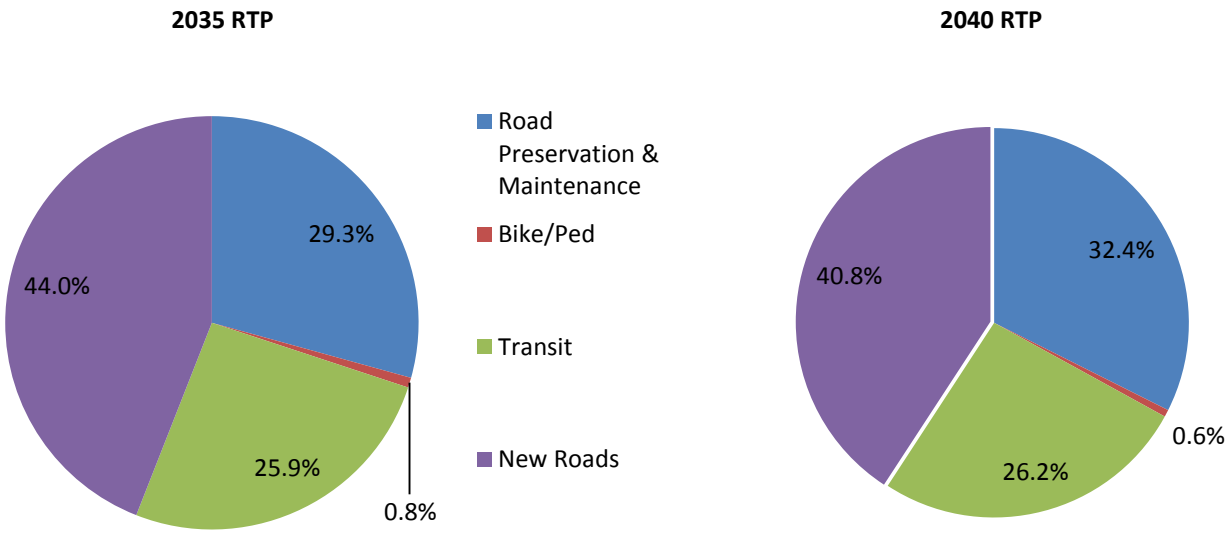
The most recent VMT forecast from DRCOG in their 2040 Regional Transportation Plan actually forecasts daily VMT per capita decreasing from 25.4 in 2015 to 24.3 by 2040.[36] This is generally in line with the last eight years of VMT growth in the region.

Compared with DRCOG's 2035 Regional Transportation Plan (adopted in February 2011) the new RTP makes much more conservative forecasts of VMT growth. In the 2035 RTP, daily regional VMT in 2035 was forecast to be 119 million and VMT per capita 27.4 miles per day.[37] If the VMT growth rates from the 2035 RTP (about 1.9% annually) were extended to 2040, VMT in that year would have been expected to reach 130.8 million. In the most recent 2040 RTP, however, VMT in 2040 is forecast to be 105 million and VMT per capita 24.3 miles per day. This represents a 20 percent decrease in forecast VMT in just over a four year period. Despite the significant drop in projected VMT, there was little shift in overall expenditures by category from the 2035 RTP to the 2040 RTP.

Table 4 | Comparison of VMT Forecasts in DRCOG's RTPs

RTP	Projected VMT	Projected VMT/capita	Average Annual VMT/capita Growth Rate
2035 RTP[38]	119.0 million (by 2035)	27.4	0.26%
2040 RTP[39]	105.0 million (by 2040)	24.4	-0.20%

Figure 17 | Comparison of Spending Priorities between DRCOG's Two Most Recent RTPs



[36] Denver Regional Council of Governments. 2014. 2040 Fiscally Constrained Regional Transportation Plan.
[37] Denver Regional Council of Governments. 2011. 2035 Metro Vision Regional Transportation Plan. https://www.drcog.org/planning-great-region/metro-vision-2035.
[38] Ibid.
[39] Denver Regional Council of Governments. 2014. 2040 Fiscally Constrained Regional Transportation Plan.

DRCOG has adopted policy goals on VMT. The adopted 2035 Metro Vision Plan set a goal of 10 percent reduction in per capita VMT between 2010 and 2035 along with these other goals:

- Increase urban density by 10 percent
- Locate 50 percent of new housing and 75 percent of new employment in urban centers
- Protect a total of 880 square miles of state and local parks and open space
- Cut greenhouse gas emission by 60 percent
- Reduce single-occupant vehicle (SOV) trips to work from 74 percent to 65 percent

The draft Metro Vision 2040 Plan would update this to a 10 percent drop between 2015 and 2040. These goals fit within a suite of supportive goals, which provide a good model for other MPOs in the southwest.

Pike's Peak Area Council of Governments (PPACG)

In the 2035 Moving Forward Update (adopted in January 2012), the Pikes Peak Area Council of Governments (PPACG) forecast that daily VMT in the Colorado Springs metro area would reach 18.6 million by 2035 and estimate that VMT per capita will decrease from 20.2 in 2010 to 19.1 in 2035.[40] This is a more conservative estimate than was made in the original 2035 Moving Forward Plan (adopted in 2008) which had forecast that total VMT would reach 22.1 million by 2035 and that VMT per capita would increase to 22.7 by 2035.[41] The Update forecasts 16 percent less VMT by 2035, compared to the previous Moving Forward plan.

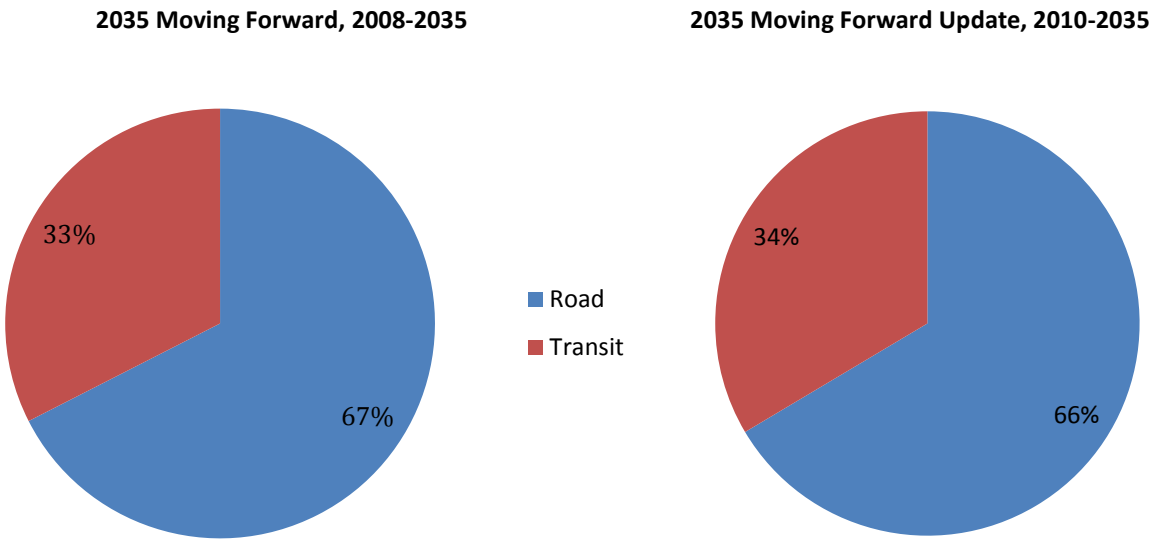
Despite the decreased forecast of 3.5 million VMT, however, there was almost no shift in how expenditures were allocated between roadways and transit.

Table 5 | Comparison of VMT Forecasts by PPACG

RTP	Projected VMT	Projected VMT/capita	Average Annual VMT/capita Growth Rate
2035 Moving Forward	22.1 million (by 2035)	22.7	0.40%
2035 Moving Forward Update	18.6 million (by 2035)	19.1	-0.21%

[40] Pike's Peak Area Council of Governments. 2012. 2035 Moving Forward Update. http://www.ppacg.org/transportation/regional-transportation-plan/2035-moving-forward-update.
[41] Pike's Peak Area Council of Governments. 2008. 2035 Moving Forward.

Figure 18 | Comparison of Spending Priorities between PPACG's Two Most Recent RTPs



Nevada

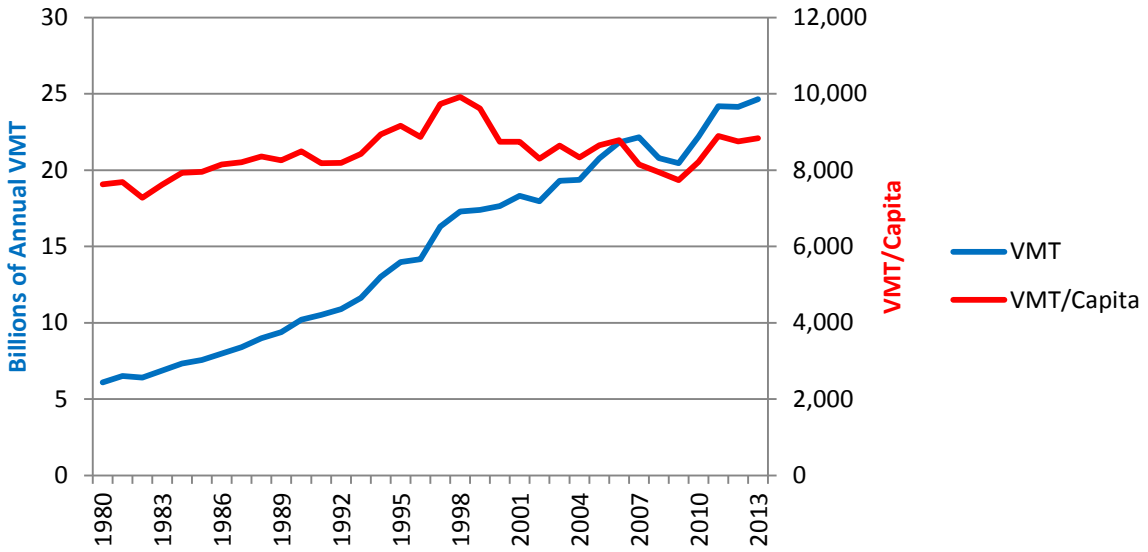
The state of Nevada has been the outlier among southwestern states regarding its VMT and VMT per capita trends. It began to see declining VMT per capita starting in 1998, well before most other southwestern states. But as other states began to see their own VMT per capita fall, Nevada's has actually increased in recent years. While per capita VMT in Nevada was well below the other southwestern states for many years, its increases in recent years have brought it to a similar level as Arizona, Colorado and Utah.

Total annual VMT in Nevada peaked in 2013 at 24.6 billion.[42] VMT per capita was highest in 2011 at 8,893 miles per year.[43]

Statewide, between 1980 and 2006, VMT per capita grew at a rate of 0.6 percent annually; Nevada was the only southwestern state to see growth below one percent. Since 2006, VMT per capita has averaged an increase of 0.2 percent; Nevada is the only southwestern state to experience an average increase over this period.

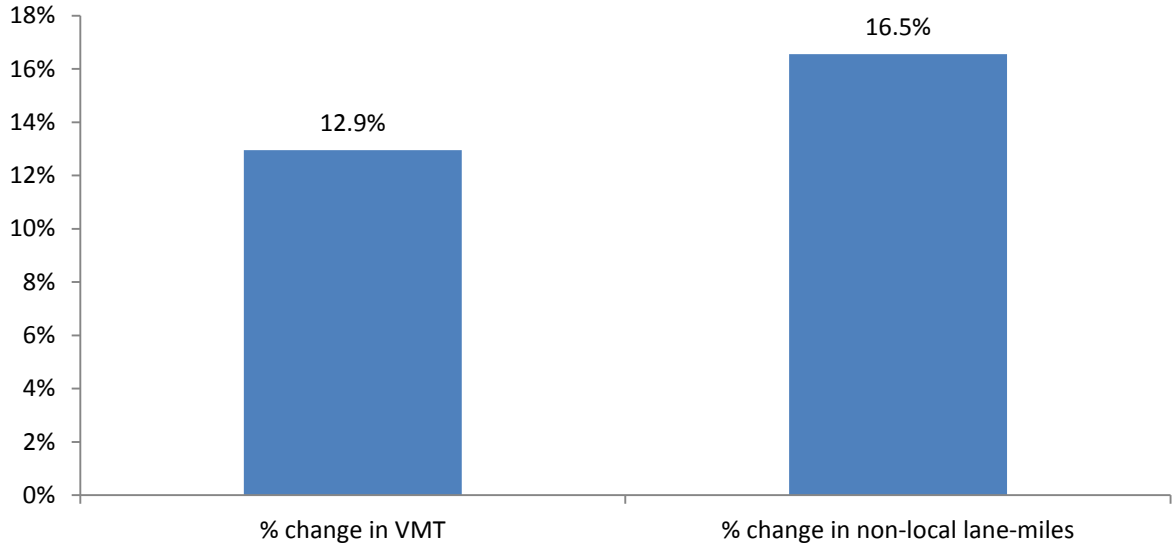
[42] Federal Highway Administration. 2014. Highway Statistics Series. Table 5.4.1. Vehicle miles of travel by functional system. http://www.fhwa.dot.gov/policyinformation/statistics.cfm.
[43] Ibid. Table 6.3.1. Licensed drivers – Ratio of licensed drivers to population. http://www.fhwa.dot.gov/policyinformation/statistics.cfm

Figure 19 | Total Annual VMT and VMT per capita in Nevada, 1980-2013



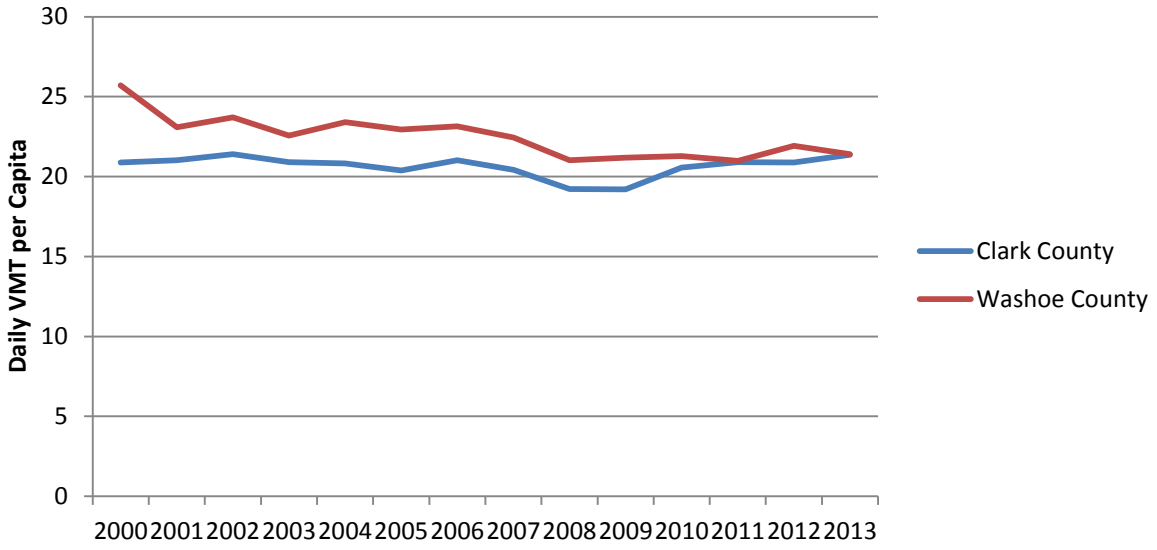
The number of roadway lane-miles in the state has grown faster than the growth of VMT. Since 2006, the state has increased total non-local roadway lane-miles by 16.5 percent while VMT has increased by 12.9 percent.[44]

Figure 20 | Percent Change in Total VMT and Non-local Roadway Lane-Miles in Nevada since 2006



[44] Ibid. Table 4.4.1.4. Estimated lane-miles by functional system. http://www.fhwa.dot.gov/policyinformation/statistics.cfm

Figure 21 | Daily VMT per Capita in Clark and Washoe Counties, 2000-2013



As in the state as a whole (of which it represents 64 percent of the VMT and 73 percent of the population), Clark County has seen VMT and VMT per capita increase since their lowest levels in 2009 and 2008 respectively. Since 2006, total VMT in Clark County has increased 10 percent while transit use (measured in passenger miles traveled) has increased four percent.[45] Washoe County has seen generally declining VMT per capita since 2000 and flat total VMT since 2006.[46, 47] While total driving in Washoe County has remained stable since 2006, transit use (measured in passenger miles traveled) has increased by 16 percent between 2006 and 2013.[48]

The state of Nevada does not publish VMT forecasts.

Regional Transportation Commissions of Southern Nevada (RTC-SN)

The most recent VMT forecast from the RTC-SN's 2035 Regional Transportation Plan projects daily VMT increasing from 47.7 million in 2015 to 65.3 million by 2035.[49] This assumes an average annual growth rate in VMT of 1.6 percent.[50]

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[45] National Transit Database. 2015. TS2.2 Service Data and Operating Expenses Time-Series by System, http://www.ntdprogram.gov/ntdprogram/data.htm.
[46] Nevada Department of Transportation. 2015. Annual Vehicle Miles of Travel. http://nevadadot.com/About_NDOT/NDOT_Divisions/Planning/Roadway_Systems/Annual_Vehicle_Miles_of_Travel.aspx.
[47] Nevada State Demographer. 2015. Estimating Nevada's Populations. http://nvdemography.org/data-and-publications/estimates/.
[48] National Transit Database. 2015. TS2.2 Service Data and Operating Expenses Time-Series by System. http://www.ntdprogram.gov/ntdprogram/data.htm.
[49] MPOs report daily VMT to reflect traffic on an average weekday whereas state DOTs report annual VMT.

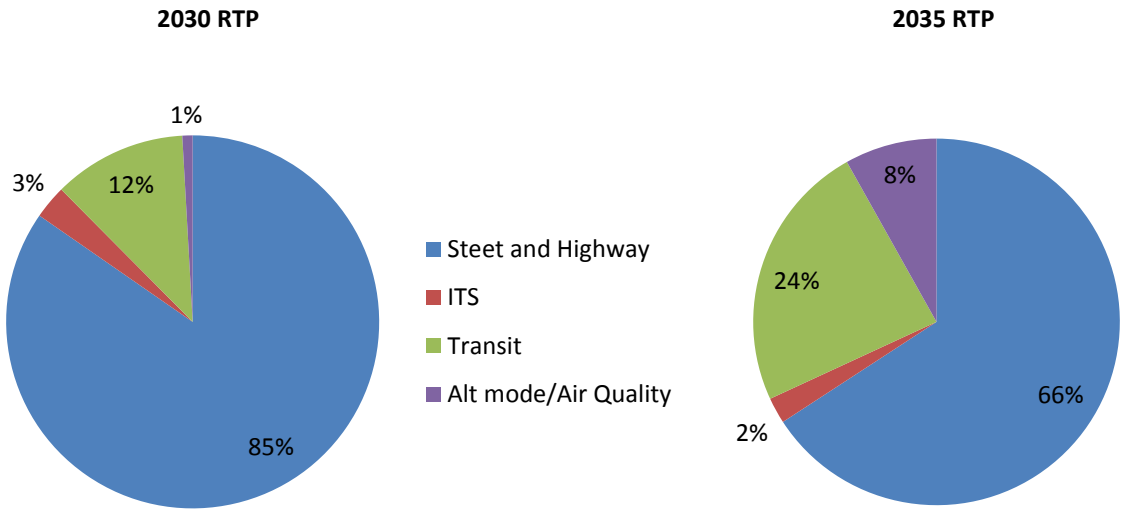
Compared with RTC-SN's 2030 Regional Transportation Plan (adopted in 2009) the new RTP adopted in 2013 makes much more conservative forecasts of VMT growth. In the 2030 RTP, daily VMT in 2030 was forecast to be 76.8 million.[51] If the VMT growth rates from the 2030 RTP (about 2.1 percent annually) were extended to 2035, VMT in that year would have been expected to reach 85.3 million. This represents a 23 percent decrease in forecast VMT in just over a four year period.

Table 6 | Comparison of VMT Projections by RTC-SN

RTP	Projected VMT	Average Annual VMT Growth Rate
2030 RTP	76.8 million (by 2030)	2.1%
2035 RTP	65.3 million (by 2035)	1.6%

Between these two RTPs, there was some shift in overall expenditures by category with less funding going towards streets and highways and greater funding going to transit and other alternative modes.

Figure 22 | Comparison of Spending Priorities between RTC-SN's Two Most Recent RTPs



[50] Regional Transportation Commission of Southern Nevada. 2013-2035 Regional Transportation Plan. http://www.rtcsnv.com/planning-engineering/transportation-planning/2013-2035-regional-transportation-plan-update/.
[51] Regional Transportation Commission of Southern Nevada. 2009-2030 Regional Transportation Plan.

Regional Transportation Commission of Washoe County (RTD-WC)

The most recent VMT forecast from the RTC of Washoe County's 2035 Regional Transportation Plan (adopted in 2013) forecasts VMT in northern Nevada increasing from 7 million in 2015 to 9.2 million by 2035.[52] This assumes an average annual growth rate in VMT of 1.4 percent.

Compared with RTC of Washoe County's 2030 Regional Transportation Plan (adopted in 2008) the new RTP makes much more conservative forecasts of VMT growth. In the 2030 RTP, daily VMT in 2030 was forecast to be 11.8 million.[53] If the VMT growth rates from the 2030 RTP (about 2.3% annually) were extended to 2035, VMT in that year would have been expected to reach 13.2 million. The revised estimates in the 2035 RTP represent a 30 percent decrease in forecast VMT in just over a five year period.

The 2030 RTP includes local, regional and state projects in its expenditures summary, while only regional projects are included in the 2035 RTP. This makes a comparison between the two RTPs as far as spending priorities unfeasible.

Table 7 | Comparison of VMT Projections by RTC of Washoe County

RTP	Projected VMT	Average Annual VMT Growth Rate
2030 RTP	11.8 million (by 2030)	2.3%
2035 RTP	9.2 million (by 2035)	1.4%

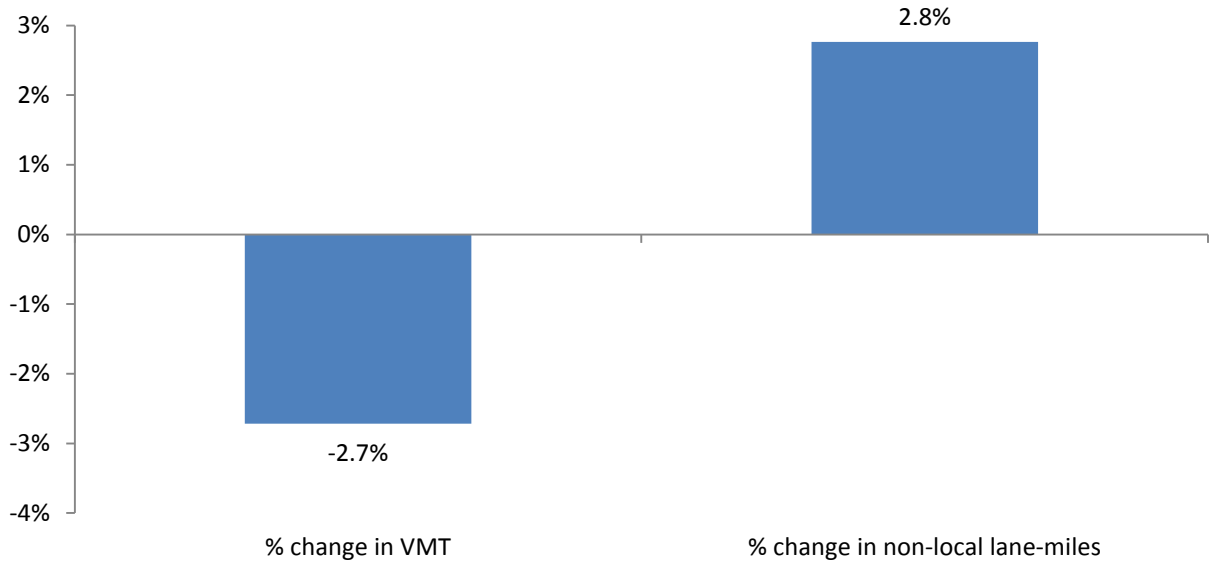
New Mexico

New Mexico's total annual VMT reached a peak of 26.8 billion in 2007 and fell to just over 25 billion in 2013.[54] VMT per capita also peaked in 2007 at 13,668 miles per year and has fallen or remained flat since, reaching 12,030 in 2013.[55]

Statewide, between 1980 and 2006, VMT per capita grew at an average annual rate of 1.7 percent. Since 2006, VMT per capita has declined by 9.6 percent.

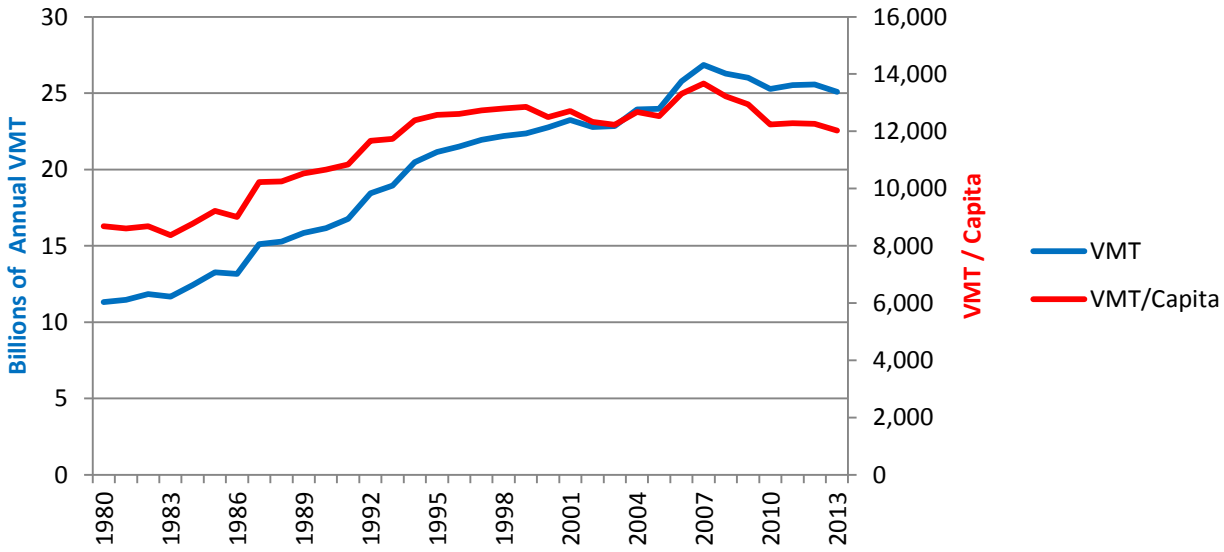
[52] Regional Transportation Commission of Washoe County. 2013. 2035 Regional Transportation Plan. http://www.rtcwashoe.com/planning-7.
[53] Regional Transportation Commission of Washoe County. 2008. Regional Transportation Plan 2008. http://www.rtcwashoe.com/planning-7.
[54] Federal Highway Administration. 2014. Highway Statistics Series. Table 5.4.1. Vehicle miles of travel by functional system. http://www.fhwa.dot.gov/policyinformation/statistics.cfm.
[55] Ibid. Table 6.3.1. Licensed drivers – Ratio of licensed drivers to population. http://www.fhwa.dot.gov/policyinformation/statistics.cfm.

Figure 23 | Percent Change in New Mexico's Total VMT and Non-local Roadway Lane-miles since 2006



At the same time that total VMT has declined or remained stable, the number of roadway lane-miles in the state has increased. Since 2006, non-local lane-miles have increased nearly three percent, while total VMT has fallen nearly three percent.[56]

Figure 24 | Total Annual VMT and VMT per Capita in New Mexico, 1980-2013

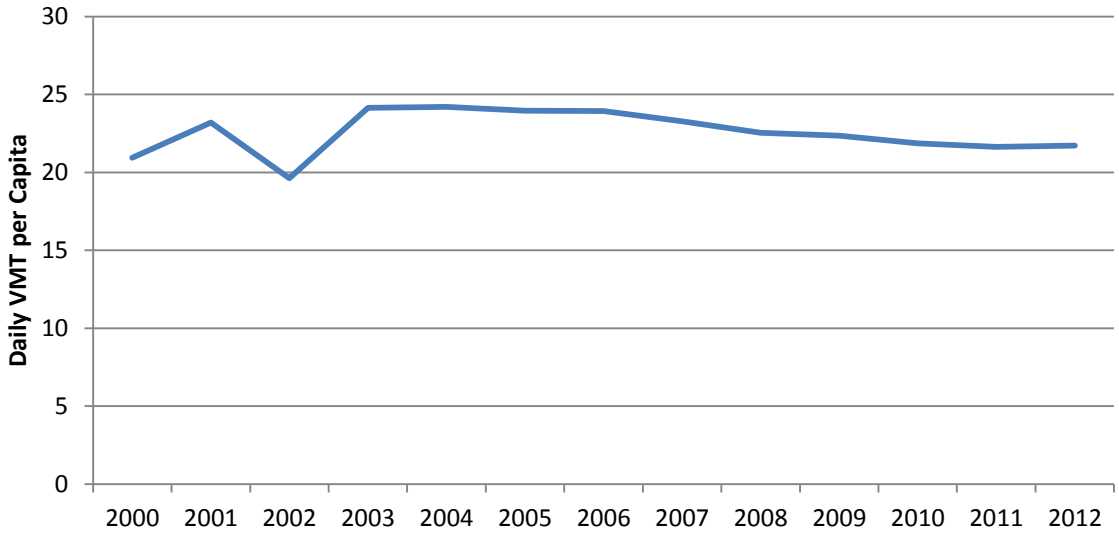


[56] Ibid. Table 4.4.1.4. Estimated lane-miles by functional system. http://www.fhwa.dot.gov/policyinformation/statistics.cfm.

Mid-Region Council of Governments (MRCOG)

The Albuquerque metropolitan area, home to 42 percent of the state's population, has seen falling VMT per capita since peaking at 24.2 miles per day in 2004. The latest data from MRCOG shows VMT per capita at 21.7, a 10 percent decline since the peak.[57] While people are driving less in the Albuquerque area, transit use (measured in passenger miles traveled) increased 56 percent between 2006 and 2013.[58]

Figure 25 | Daily VMT per Capita in the Albuquerque Metropolitan Area, 2000-2012



While the state does not release VMT forecasts, MRCOG does make forecasts as part of their Metropolitan Transportation Plans (MTPs). In the 2040 MTP (adoption pending), MRCOG predicted that, between 2012 and 2040, daily VMT[59] would increase from 20.3 million to 30.1 million and that VMT per capita would decrease from 23.1 to 22.8 miles per day.[60]

These estimates assume that VMT per capita would decrease at an annual rate of 0.0005 percent annually.

Compared to the previous 2035 MTP (published in April of 2011), the 2040 MTP makes less aggressive assumptions about VMT and VMT per capita growth, resulting in significantly lower forecast for VMT in the Albuquerque region. The 2040 MTP projects 30.1 million daily VMT by

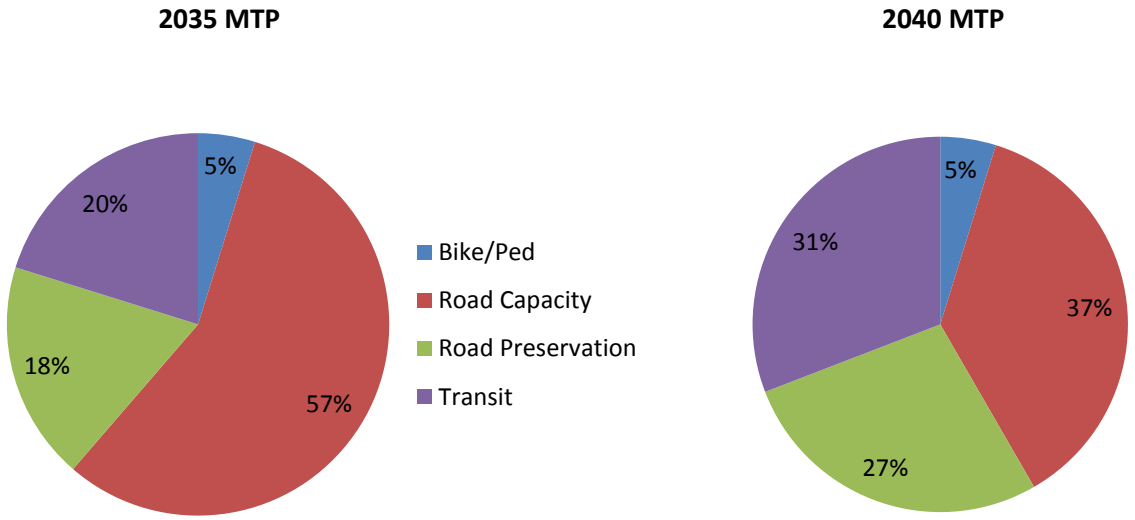
[57] Masek, Nathan. 2013. E-mail communication with the author.
[58] National Transit Database. 2015. TS2.2 Service Data and Operating Expenses Time-Series by System, http://www.ntdprogram.gov/ntdprogram/data.htm.
[59] MPOs report daily VMT to reflect traffic on an average weekday whereas state DOTs report annual VMT.
[60] Mid-Region Council of Governments. 2015. 2040 Metropolitan Transportation Plan. http://www.mrcog-nm.gov/transportation/metro-planning/long-range-mtp?showall=&start=2.

2040, almost 1.7 million less than the previous RTP projected by 2035.[61] If the growth rate in VMT in the 2035 MTP (2.5% annually) were extended to 2040, it would result in an estimate of 36 million VMT, a difference of nearly 6 million VMT. The estimates in the new MTP represent a 16% reduction in expected VMT in 2040.

Table 8 | Comparison of VMT Projections by MRCOG

RTP	Projected VMT	Projected VMT/capita	Average Annual VMT/capita Growth Rate
2035 MTP	31.8 million (by 2035)	24.0	0.44%
2040 MTP	30.1 million (by 2040)	22.8	-0.0005%

Figure 26 | Comparison of Spending Priorities between MRCOG's Two Most Recent MTPs



Between these two MTPs, there was a significant shift in how future transportation funding is expected to be allocated. The 2035 MTP dedicated 75 percent of funding to road capacity and preservation, with 20 percent going to transit and five percent to bike and pedestrian projects. In the 2040 MTP, 64 percent of funding is allocated to road capacity and preservation, while funding for transit increases to 31 percent. The significant increase in transit funding is mainly a result of the operation of the New Mexico Rail Runner Express, a commuter train serving Albuquerque and

[61] Mid-Region Council of Governments. 2011. 2035 Metropolitan Transportation Plan. http://www.mrcog-nm.gov/transportation/metro-planning/long-range-mtp?showall=&start=1.

Santa Fe, which has resulted in increased federal transit funding.[62] However, the City of Albuquerque has also made a decision to begin investing in Bus Rapid Transit.

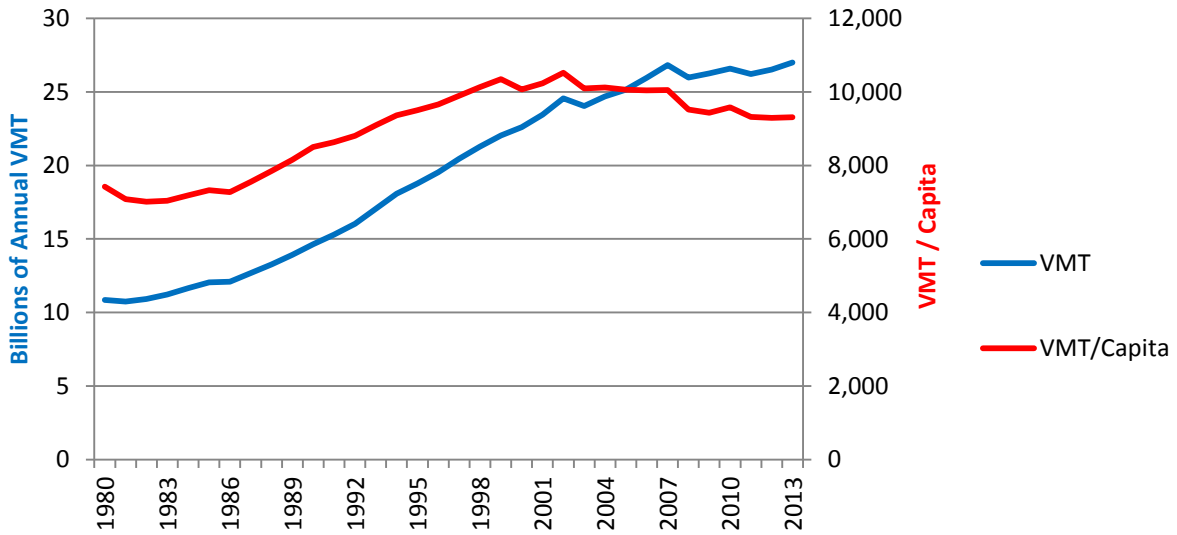
Utah

Unlike the other Southwestern states, Utah saw its highest year for total VMT in 2013, the most recent year that data is available.[63] VMT per capita peaked in 2002 at 10,522 and has consistently fallen since then reaching just under 9,309 in 2013, a level last seen in 1994.[64]

Statewide, between 1980 and 2006, VMT per capita grew at a rate of 1.2 percent annually. Since 2006, VMT per capita has averaged a decrease of 1.1 percent per year. Since its peak in 2002, VMT per capita has declined a total of 11.5 percent.

The total length of non-local roadway lane-miles in the state has increased 8.9 percent since 2006 compared to VMT growth of four percent.[65]

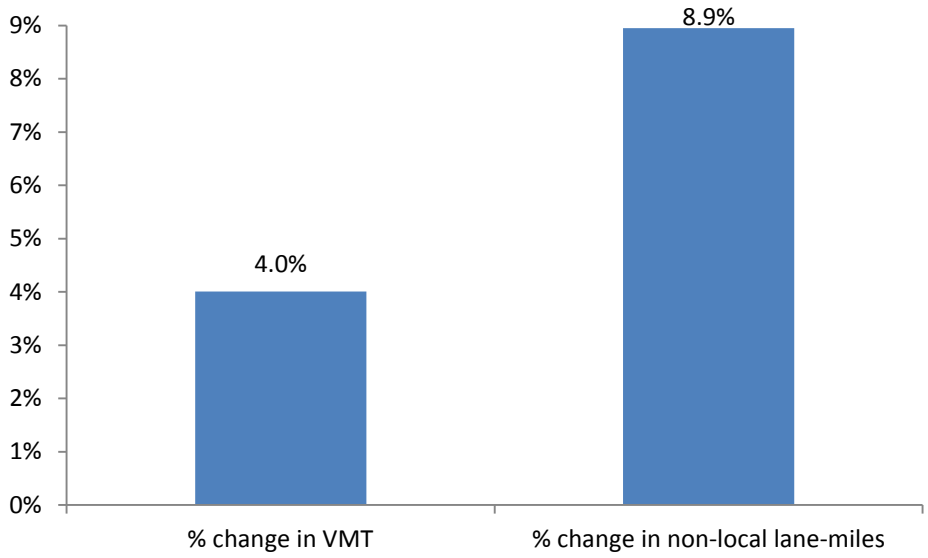
Figure 27 | Total Annual VMT and VMT per capita in Utah, 1980-2013



[62] Mid-Region Council of Governments. 2015. 2040 Metropolitan Transportation Plan. http://www.mrcog-nm.gov/transportation/metro-planning/long-range-mtp?showall=&start=2

[63] Federal Highway Administration. 2014. Highway Statistics Series. Table 5.4.1. Vehicle miles of travel by functional system. http://www.fhwa.dot.gov/policyinformation/statistics.cfm.
[64] Ibid. Table 6.3.1. Licensed drivers – Ratio of licensed drivers to population. http://www.fhwa.dot.gov/policyinformation/statistics.cfm.
[65] Ibid. Table 4.4.1.4. Estimated lane-miles by functional system. http://www.fhwa.dot.gov/policyinformation/statistics.cfm.

Figure 28 | Percent Change in Total VMT and Non-local Roadway Lane-Miles in Utah since 2006



Wasatch Front Regional Council (WFRC)

The following graph shows the historical and projected daily VMT per capita in the Wasatch Front Area. VMT per capita increased steadily between 1994 and 2000 and again between 2005 and 2009.[66, 67] While total VMT in the region has remained stable since 2006, total transit use (measured in passenger miles traveled) has increased 14 percent between 2006 and 2013.[68]

The state does not release VMT forecasts.

In their most recent 2040 RTP, WFRC forecasts VMT per capita increasing from 23.9 in 2016 to 26.2 miles per day by 2040, with total daily VMT increasing from 43.4 million to 64.2 million over the same period. There is insufficient data to compare spending between the last two RTPs at this time.

The WFRC has not adopted specific VMT reduction targets, but as part of the 2040 Plan growth principles, they have adopted a goal to "support actions that reduce growth in per capita vehicle miles travelled."[69] In addition, the 2040 Plan elevates the importance of bicycle and pedestrian infrastructure, making this a third pillar of the Plan, along with highway and transit projects. However, the Plan does not yet include a shift in funding to build the prioritized bicycle and pedestrian infrastructure.

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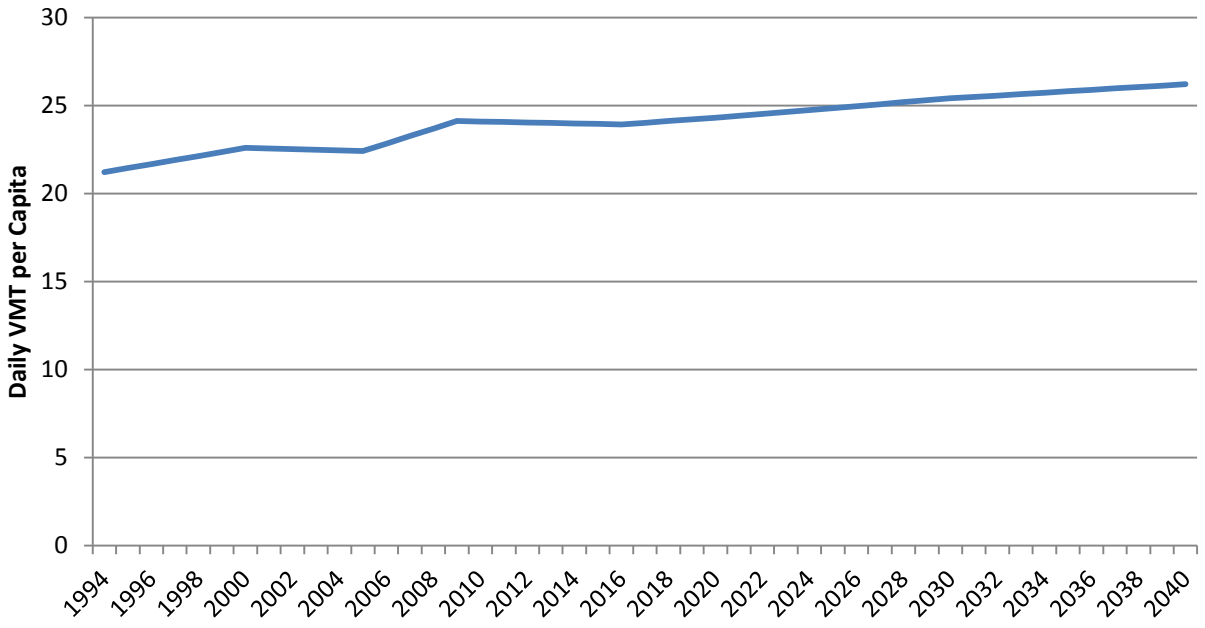
[66] MPOs report daily VMT to reflect traffic on an average weekday whereas state DOTs report annual VMT.
[67] WFRC provided data for the years: 1994, 2000, 2005, 2009, 2016, 2020, 2030 and 2040. Data for intermediate years was interpolated.
[68] National Transit Database. 2015. TS2.2 Service Data and Operating Expenses Time-Series by System, http://www.ntdprogram.gov/ntdprogram/data.htm.
[69] Wasatch Front Regional Council, 2015-2040 Regional Transportation Plan, p. 17, http://www.wfrc.org/publications/RTP-publications/Complete%202015-2040%20RTP.pdf.

Figure 29 | Historic and Forecast Daily VMT per Capita from WFRC, 1994-2040[70]



Wyoming

Statewide, total annual VMT in Wyoming peaked in 2009 with just over 9.5 billion.[71] VMT per capita peaked in 2003 at 18,457 miles per year and has generally declined since then, reaching 15,977 in 2013.[72] Wyoming does have a very high VMT per capita compared to the other southwestern states. This is not surprising, since Wyoming is the most rural of the states, with no large population centers (which tend to have lower VMT per capita).

Between 1980 and 2006, VMT per capita grew at an average annual rate of 2.2 percent. Since its peak in 2003, VMT per capita has fallen 13.4 percent.

Wyoming is the only southwestern state that has seen non-local lane-miles decrease at a greater rate than VMT. While total VMT has fallen 1.1 percent since 2006, total non-local lane miles have decreased 3.9 percent.[73]

[70] Larsen, Jon. 2014. E-mail communication with the author.
[71] Federal Highway Administration. 2014. Highway Statistics Series. Table 5.4.1. Vehicle miles of travel by functional system. http://www.fhwa.dot.gov/policyinformation/statistics.cfm.
[72] Ibid. Table 6.3.1. Licensed drivers – Ratio of licensed drivers to population. http://www.fhwa.dot.gov/policyinformation/statistics.cfm.
[73] Ibid.

Figure 30 | Percent Change in Total VMT and Non-local Roadway Lane-miles in Wyoming since 2006

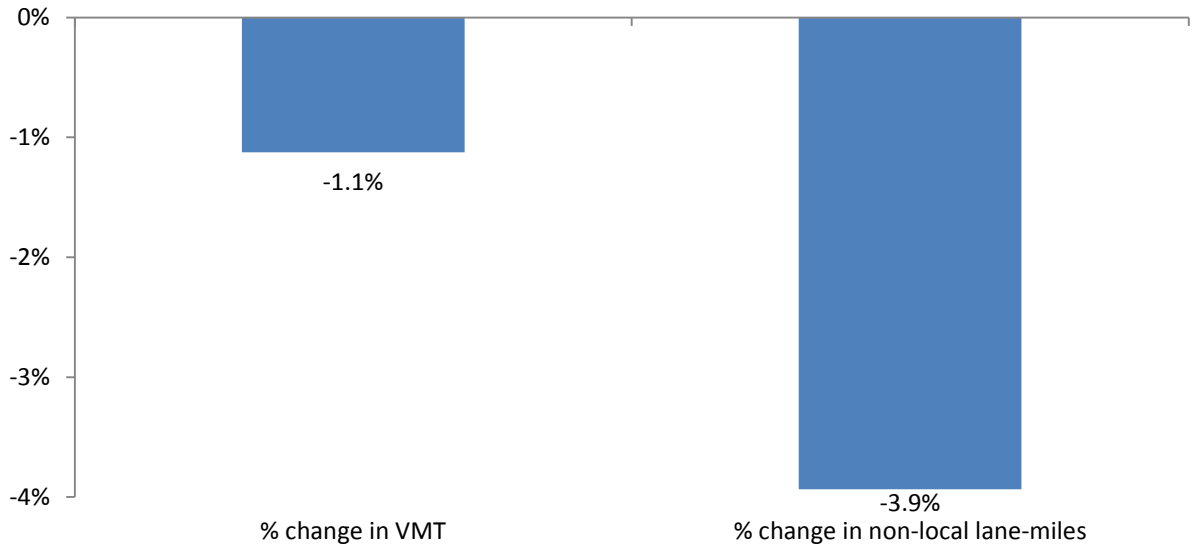
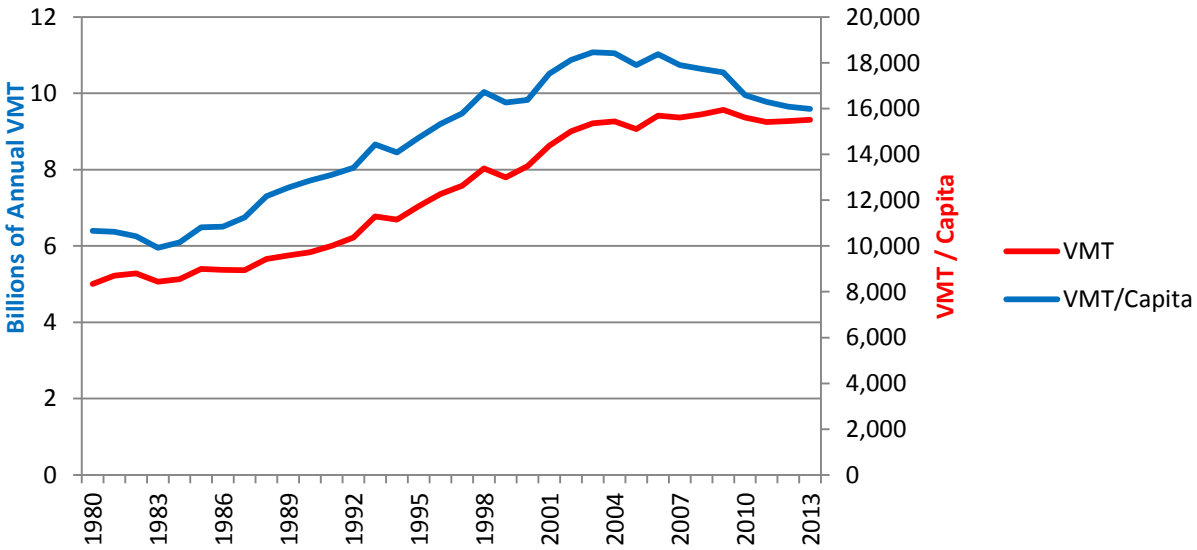


Figure 31 | Total VMT and VMT per capita in Wyoming, 1980-2013



CONCLUSION

Southwestern states (Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming) have experienced a dramatic shift in how much their residents drive over the last decade. Between 1980 and 2006, these states experienced an average annual increase of 3.8 percent in total miles driven and 1.2 percent in miles driven per capita. However, since then, total miles driven have remained relatively flat and miles driven per capita have steadily fallen (at least through the end of 2013, the last year for which annual numbers are available). Even while total driving has not increased, the region's major metropolitan areas have seen increasing levels of transit use.

These reductions in VMT growth have many positive impacts. Less driving reduces demand for new roadways and lessens wear and tear on existing roads, both of which lead to lower expenditures on roadway infrastructure. Reduced VMT also means reductions in consumption of gasoline, emissions of harmful air pollutants, and emissions of greenhouse gases. In addition, to the extent that reduced VMT is connected to changes in urban form and travel behavior that lead to more walking and biking, there are important direct health benefits. Thus, state DOTs and MPOs should not only respond to the trend towards lower VMT, but should direct transportation investments in ways that will support and enhance this trend.

Despite this decrease in driving, southwestern states have continued to expand their road networks. Since 2006, non-local roadway lane-miles have increased by 3.4 percent in southwestern states while total miles driven have fallen by 0.3 percent.

MPOs, which are responsible for transportation planning in the Southwest's major urban areas, have begun to incorporate this decrease in driving into their most recent set of RTPs. While not all RTPs reflect the recent trend in reduced driving, they all are making less aggressive forecasts regarding VMT growth and several forecast decreases in VMT per capita over the course of the plan.

Despite these less aggressive VMT forecasts resulting in many millions fewer daily VMT, the allocation of funding in the RTPs between roadways and driving alternatives such as transit, bike and pedestrian infrastructure has generally remained consistent with past RTPs, in which the vast majority of funding was directed at roadway related projects.

SWEEP recommends that MPOs and state DOTs should develop spending plans that shift investment away from roadway expansion and towards public transit, bikeways and pedestrian infrastructure.

We also recommend that DOTs and MPOs adopt specific goals for VMT reduction. For example, DRCOG has adopted a goal of a 10 percent reduction in per capita VMT over the next 25 years.

We also encourage other state DOTs to follow Colorado's lead and publish their estimates for future VMT. Currently, this information is not readily available in the Southwest. Providing these forecasts would allow the public to better understand how the DOTs perceive future demand for roadways in the state.