

2012 US 36 Mobility Report

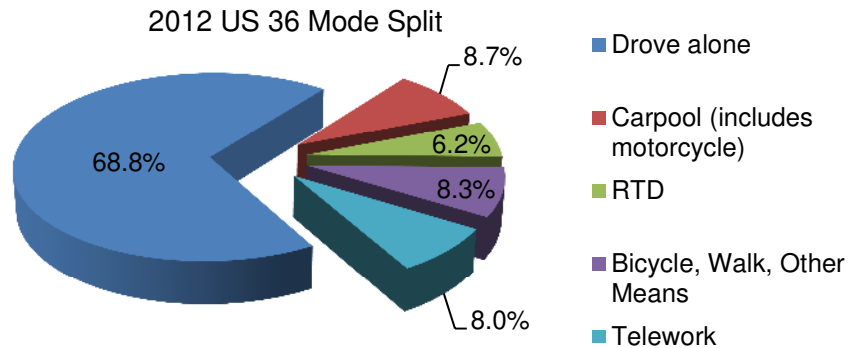


Table of Contents

I. Executive Summary	3
II. US 36 Transportation Mode Share	4
III. Trip Characteristics by Mode	6
A. Transit Ridership	6
B. Carpooling and Vanpooling	10
C. I-25 Express Lanes	11
D. Bicycling	11
E. Solo Drivers	11
IV. Mitigating Congestion	13
A. RTD EcoPass	13
B. DRCOG TDM Partnership	14
C. TDM Pool	15
D. US 36 Commuter Incentive Program	15
V. Conclusion	16
VI. Appendix	17

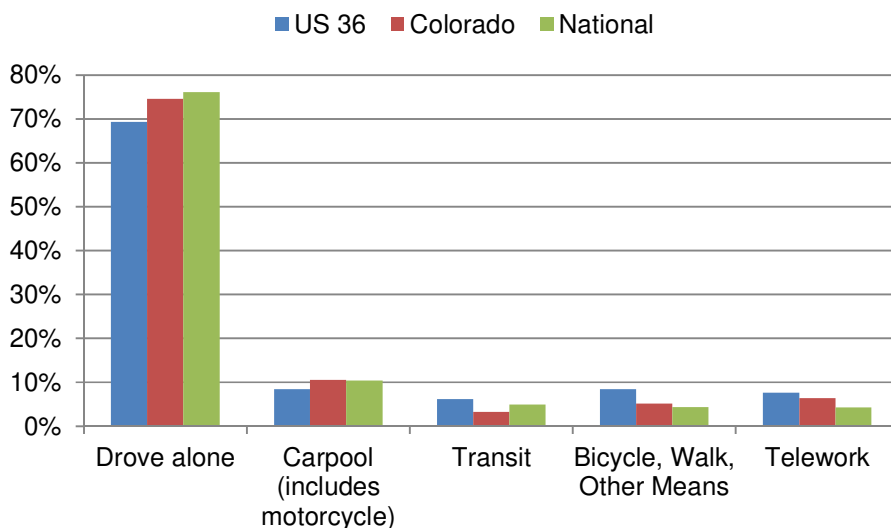
I. Executive Summary

This report provides a comparison of how people usually traveled to work within the US 36 corridor in 2012 and years prior, including information on all modes of transportation including transit riders, High Occupancy Vehicle (HOV)/ High Occupancy Toll (HOT) drivers (carpoolers and vanpoolers), bicyclists, and solo drivers.



US 36, between I-25 in Adams County and Foothills Parkway in Boulder, is one of the busiest transportation corridors in Colorado. US 36 is the link to major universities, federal laboratories, and retail and employment centers in Boulder, Denver and in between. In addition, growing residential areas and heavy tourism have increased congestion and travel demand.

In September 2012, Phase 1 of the US 36 Express Lanes Project from 88th Street in Louisville – Superior to I-25 started, rebuilding five (5) bridges, constructing the US 36 Bikeway, and adding a managed lane in each direction to provide BRT service and HOV/HOT lanes directly into downtown Denver.



US 36 exhibits lower Single Occupant Vehicle (SOV) mode share and higher transit, bicycling and telework mode share than those shown both nationally and statewide.

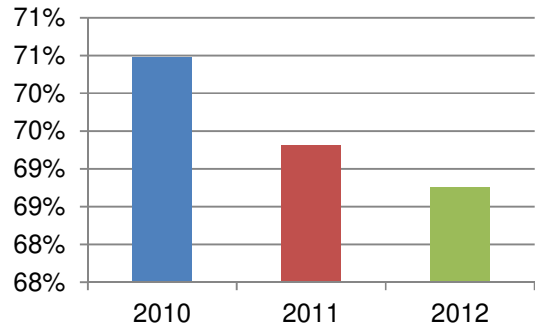
Source: 2007-11, American Community Survey, US Census Bureau

II. US 36 Transportation Mode Share

The following is a summary of the modes “commuters”, or someone travelling to work, from residents of the communities of Boulder, Louisville, Superior, Broomfield and Westminster from 2007-2011:

- 68.8% of trips are by solo drivers.
- 8.7% of trips are by carpoolers/motorcyclists
- 6.2% of trips are by transit
- 8.3% of commuters are cyclists, pedestrians or “other means”
- 8% of trips are by telework
- Overall, daily traffic volumes are higher on the east end of US 36, with approximately 64,000 more vehicles traveling the east end of the corridor compared to the west end. Boulder employees have the best access to RTD EcoPasses, with twice as many EcoPasses per employee as Denver.

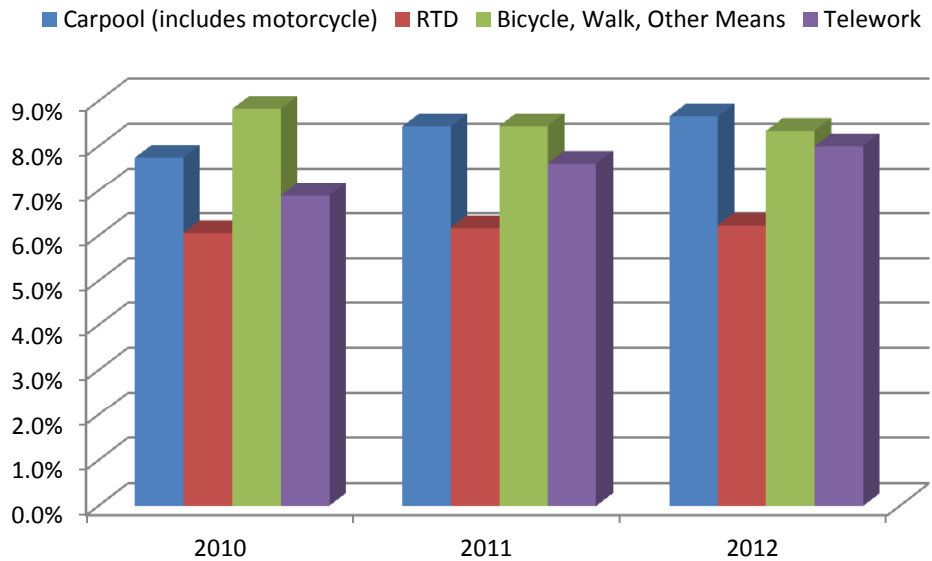
Single Occupant Vehicle (SOV) Mode Share



Between 2010 and 2012 publishing years, the 5-year ACS report showed SOV mode share decline from 70.5% to 68.8%, a reduction of 4,000 SOV travelers.

Source: 2007-11, American Community Survey, US Census Bureau

Between 2010 and 2012, carpooling mode share increases from 7.7% to 8.7% and telework increased from 6.9% to 8% of overall mode share in US 36 Communities.



Source: 2007-11, American Community Survey, US Census Bureau

The number of US 36 commuters in the charts above is estimated from American Community Survey data, which also roughly approximates the number of commuters who drive alone, carpool, ride transit, walk, bike, and telework. The Census data is supplemented by primary source data from the Denver Regional Council of Governments (DRCOG), the North Front Range Metropolitan Planning

Organization (NFRMPO), the Colorado Department of Transportation (CDOT), and the Regional Transportation District (RTD), which is illustrated later in the report.

Based on data from the US Census Bureau's American Community Survey, total commute trips increased slightly from the previous year by 1,311 trips. Concurrently, increases in mode share occurred in areas of carpooling, transit and telework, whereas solo drivers decreased by 1% of the total trip mode share. Total trip increases were somewhat expected with the recovering economy, but mode share rises shown above suggest the public's increasing desire to travel by other means than driving solo.

Considering only a minority of commuters are using transit, carpooling/vanpooling, and biking adjacent to the US 36 corridor, their overall impact to reduce Vehicle Miles Traveled (VMT) is significant. For every person who uses one of these modes, there is one less vehicle travelling the US 36 corridor. Even if the percentage of people using these modes were to increase slightly in future years, it would contribute to a significant reduction in both VMT, traffic congestion and air pollution. A change in this direction will be especially important as growing population and employment centers in the US 36 corridors will only increase transportation demand.

Table 1 demonstrates the transportation mode ratios for each community adjacent to US 36. The data represents residents and not employees of Boulder, Louisville, Superior, Broomfield, and Westminster. Not all residents of these five communities use US 36 for their daily commutes. However, this data gives an estimate of the mode split in these communities and by virtue of their proximity, along US 36. This general mode split is supplemented by primary source data, which is discussed in greater detail in the rest of the US 36 Mobility Report.

Table 1: Mode Share by Community

	Residents (16 years +)	Drove Alone	Carpooler	Transit Riders	Biked, Walked, or Other	Telework
Boulder	51,181	27,049 52.8%	3,426 6.7%	4,894 9.6%	10,255 20.0%	5,557 10.9%
Louisville	9,810	7,341 74.8%	779 7.9%	470 4.8%	216 2.2%	1,004 10.2%
Superior	6,885	4,754 69.0%	879 12.8%	259 3.8%	67 1.0%	926 13.4%
Broomfield	28,262	21,705 76.8%	2,361 8.4%	1,349 4.8%	726 2.6%	2,121 7.5%
Westminster	55,340	43,315 78.3%	5,668 10.2%	2,464 4.5%	1,374 2.5%	2,519 4.6%
Total	151,478	116,721	12,557	9,436		12,127
Corridor Average	100%	68.6%	8.7	6.2%	8.3%	8%

Source: 2007-2011, American Community Survey, US Census Bureau

III. Trip Characteristics by Mode

A. Transit Ridership

In 2012, there were nearly 3.1 million trips taken on RTD routes serving the US 36 corridor (Table 2).

Route	2010	2011	2012	2010-12 % Change
AB	348,756	316,931	350,883	0.60%
B	1,658,519	1,706,586	1,769,616	6.70%
DD	46,496	28,713	18,521	-60.20%
DM	70,262	83,175	83,016	18.20%
HX	136,778	146,836	142,780	4.40%
L	309,793	329,351	299,373	-3.40%
S	52,355	58,560	62,924	20.20%
T	35,201	34,425	40,408	14.80%
86X	283,355	292,248	302,439	6.70%
Total	2,941,515	2,996,825	3,069,960	4.40%

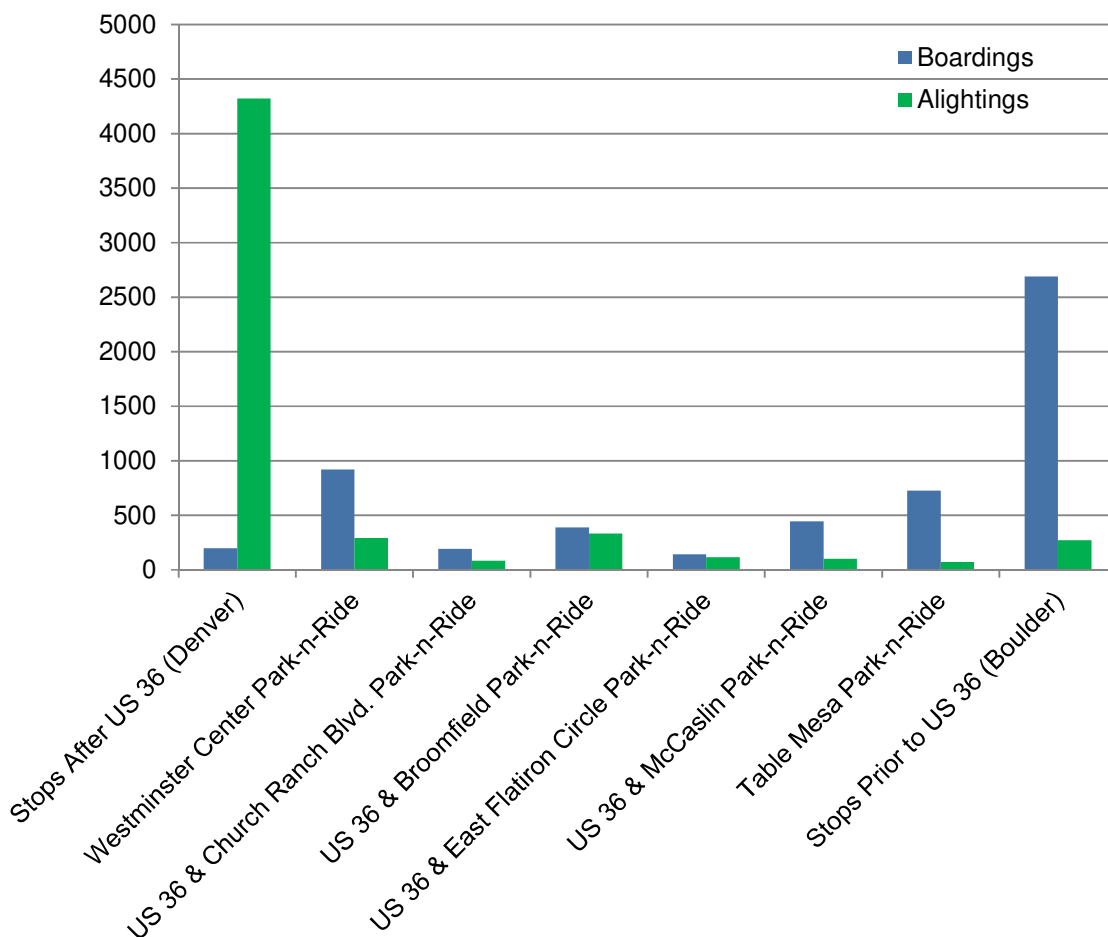
Route	Weekday by Route				Weekend by Route			
	2010	2011	2012	2010-12 % Change	2010	2011	2012	2010-12 % Change
AB	249,267	221,195	259,842	4.2%	99,489	95,736	91,041	-8.5%
B	1,456,253	1,493,047	1,544,516	6.1%	202,266	213,539	225,100	11.3%
DD	46,496	28,713	18,521	-60.2%	-	-	-	-
DM	70,262	83,175	83,016	18.2%	-	-	-	-
HX	136,778	146,836	142,780	4.4%	-	-	-	-
L	305,454	323,368	293,192	-4.0%	4,339	5,983	6,181	42.5%
S	52,355	58,560	62,924	20.2%	-	-	-	-
T	35,201	34,425	40,408	14.8%	-	-	-	-
86X	283,355	292,248	302,439	6.7%	-	-	-	-
Total	2,635,421	2,681,567	2,747,638	4.3%	306,094	315,258	322,322	5.3%

Some fluctuations in ridership are due to service changes, not noted in the table. Regardless, US 36 corridor routes increased their total ridership by 4.4% between 2010 and 2012, or 128,445. Only routes L (Longmont/Denver) and DD (Boulder / Colorado Blvd.) experienced a decline during this period. In the case of the DD, the decrease in ridership can be explained by significant service cuts initiated in 2011.



Transit ridership along US 36 routes is highly directional (below). Most weekday transit riders board and alight at RTD stops either before the Westminster Center Park-n-Ride or after the Table Mesa Park-n-Ride in Boulder. The most utilized transit stops along the US 36 corridor are at the Table Mesa Park-n-Ride, Broomfield Park-n-Ride and the Westminster Center Park-n-Ride. However, these transit riders are only a small portion of the riders using the US 36 corridor, so there is a significant opportunity for increased ridership.

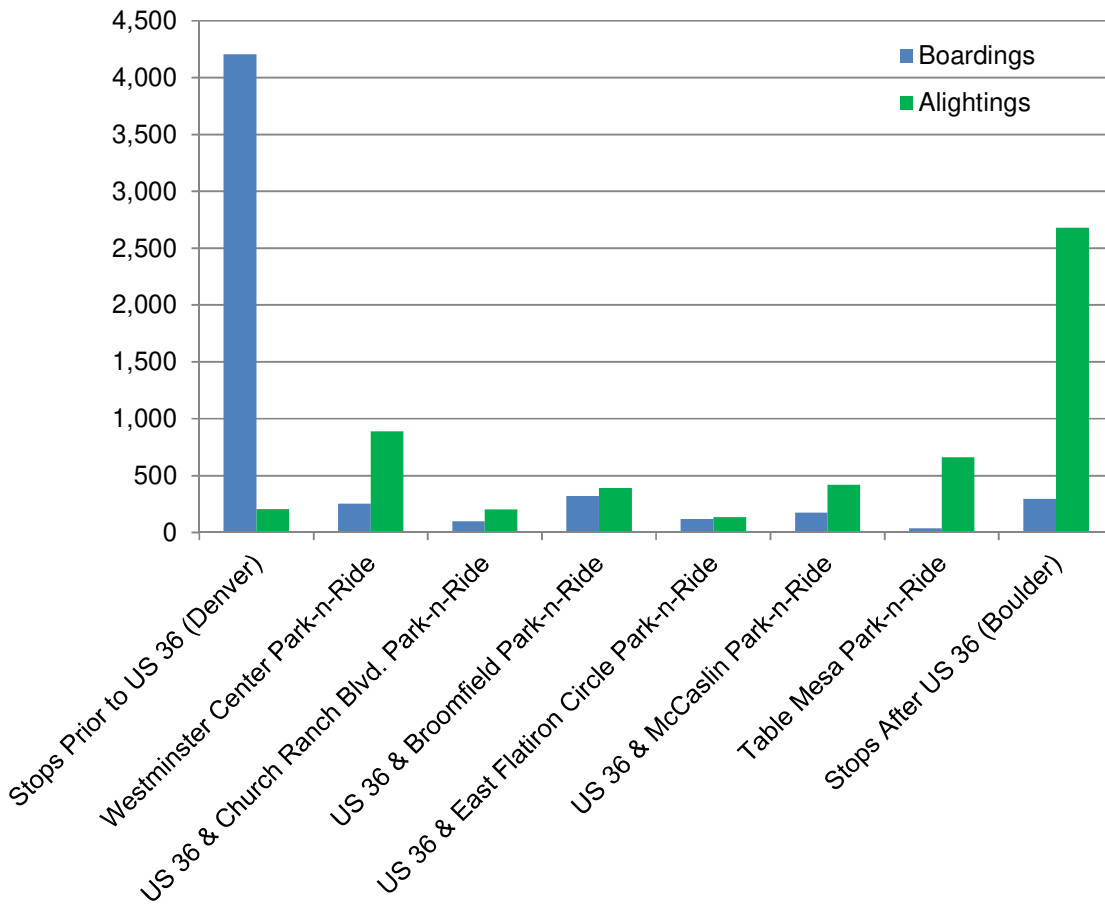
Average Daily Transit Ridership at US 36 Stops, Eastbound Weekday



Source: RTD



Average Daily Transit Ridership at US 36 Stops, Westbound Weekday



Source: RTD

Table 4: 2012 Average Weekday Transit Ridership at US 36 Park-n-Rides				
	Westbound		Eastbound	
	Boardings	Alightings	Boardings	Alightings
Stops Prior to US 36 (Denver)	4,205	207	182	4,165
Westminster Center Park-n-Ride	253	887	910	193
US 36 & Church Ranch Blvd. Park-n-Ride	98	204	141	50
US 36 & Broomfield Park-n-Ride	322	393	353	311
US 36 & East Flatiron Circle Park-n-Ride	120	136	99	98
US 36 & McCaslin Park-n-Ride	176	420	375	80
Table Mesa Park-n-Ride	36	660	675	39
Stops After US 36 (Boulder)	297	2,681	2,402	143
Total	5,507	5,589	5,139	5,136
Average Total Daily	5,548		5,137	
Total within US 36 Park-n-Rides	1,005	2,701	2,554	772

Source: RTD, average daily transit ridership on routes BV/BF/BMX/BX, DD, DM, HX, L/LX/LNX/LSX, S, T, AB, 86X.

Table 5: 2012 Average Daily Boardings					
Route	Weekday	Weekend	Total	Total Operating Days	Daily Boardings
AB	259,842	91,041	350,883	365	961
B	1,544,516	225,100	1,769,616	365	4848
DD	18,521	-	18,521	255	73
DM	83,016	-	83,016	255	326
HX	142,780	-	142,780	255	560
L	293,192	6,181	299,373	308	972
S	62,924	-	62,924	256	246
T	40,408	-	40,408	255	158
86X	302,439	-	302,439	225	1344
Total	2,747,638	322,322	3,069,960	282	9,488

Although transit only accounts for a small portion of the daily vehicle trips along US 36, the impact in reducing Vehicle Miles Traveled (VMT) is significant. The **9,488¹** daily transit riders resulted in an average VMT reduction of over **118,600per day**. In total, the **3,069,960 annual transit trips** along US 36 routes resulted in a VMT reduction of over **38.8 million²** (Table 6).

¹ Average daily transit boardings on defined US 36 RTD Routes - BV/BF/BMX/BX, DD, DM, HX, L/LX/LNX/LSX, S, T, AB, 86X

² Vehicle Miles Traveled Reduction calculated using an average trip distance of 12.5 miles, as defined by DRCOG.

Table 6: 2012-2010 US 36 Annual Transit Trips		
Year	Annual RTD Transit Trips	Vehicle Miles Traveled Reduction (VMTR)
2010	2,941,515	36,768,937
2011	2,996,825	37,460,312
2012	3,069,960	38,868,412
Change	5.7%	5.4%

Source: RTD, 2010-12

B. Carpooling and Vanpooling

Using American Community Survey Data from the US Census Bureau of the estimated daily commuters using US 36, a likely 12,557, or 8.7%, were carpoolers. Presently, the primary source for formal carpooling and vanpooling data, regional ridesharing databases, only captures a portion of the actual carpooling that is likely occurring on US 36.



The Way to Go database is managed by the Denver Regional Council of Governments (DRCOG), and allows Denver metro residents to search for carpool and vanpool matches.

SmartTrips, managed by the North Front Range Metropolitan Planning Organization (NFRMPO) provides a similar service for commuters coming from North Front Range communities, matching US 36 commuters into carpools, and vanpools through the VanGo program.

Although only a small portion of the overall carpooling and vanpooling population is actually registered in the Way to Go or SmartTrips databases, these trips result in significant annual Vehicle Miles Traveled Reduction (VMTR). These 722 carpool and 17 vanpool trip resulted in an annual savings of over 1.6 Million VMTR (Table 7). Increases shown in carpooling from 2010-2012 can likely be attributed to increased marketing of the Way To Go program in the US 36 corridor along with the cost savings and convenience accompanying carpooling.

Table 7: 2012-2010 US 36 Annual Registered Carpool/Vanpool						
	Way To Go & SmartTrips Trips			Vehicle Miles Traveled Reduction (VMTR)		
	2010	2011	2012	2010	2011	2012
Carpool	367	917	722	714,581	1,785,479	1,405,797
Vanpool	35	14	17	563,310	225,324	273,608
Total				1,277,891	2,010,803	1,679,405

Source: Denver Regional Council of Governments (DRCOG), North Front Range Metropolitan Planning Organization (NFRMPO).

C. I-25 Express Lanes

US 36 includes a portion of a High Occupancy Vehicle (HOV)/High Occupancy Toll (HOT) lane that connects to the I-25 HOV/HOT lanes. In the eastbound direction, the US 36 HOV/HOT lane begins just south of Sheridan Boulevard and connects to the I-25 southbound HOV/HOT lanes at the I-25 interchange. The westbound HOV/HOT lane that vehicles use transitioning from northbound I-25 ends east of Federal Boulevard. Presently, CDOT does not collect information specifically about HOV/HOT lane use on US 36. However, data collected from the I-25 portion of the HOV/HOT lane yields a monthly average number of trips for 2012 of 279,828 trips, and a daily average of 11,225 trips.³ Roughly 25% of I-25 HOV/HOT lane users travel the US 36 corridor.

D. Bicycling

Currently, the number of bicycles traveling the US 36 corridor is difficult to measure, and for reporting purposes, the number of bicyclists that registered for Bike to Work Day and rode in the US 36 corridor has been used to calculate usage and Vehicle Miles Traveled savings for all bicycle commuters in the corridor. In 2012, 9,013 bicyclists, registered for Bike to Work Day and traveled to, from, or through the US 36 corridor (Table 8), which if extrapolated, would account for nearly 6% of all commuters in the corridor⁴.



The number of Bike to Work Day participants underestimates the number of bicyclists expected by using American Community Survey data, which extrapolates that 8.3%, or 12,638, US 36 commuters travel by bike, walk, or other for commuting purposes. This may be because not all bicyclists who commute by bike registered for Bike to Work Day prior to the event. Conversely, cyclists who are not cycling regularly may elect to do so only on Bike to Work Day.

Table 8: 2010-2012 US 36 Bike to Work Day Participants

	Bike to Work Day Registered Participants	Vehicle Miles Traveled Reduction (VMTR)
2010	6,647	515,589
2011	7,288	565,310
2012	9,013	699,116
Change (2010-12)	35.6%	

Source: Denver Regional Council of Governments (DRCOG).

³ Monthly and Daily averages are based on HOV/HOT data presented for January-June of 2011, presented in the monthly HTPPE Progress Report <http://www.coloradodot.info/travel/tolling/i-25-hov-express-lanes>.

⁴ Bike to Work Day participant data may be inconsistent with annual data as it is a special event in which participants may or may not be cycling through the year or conversely, may not have registered for Bike to Work Day activities and be counted.

E. Solo Drivers

Colorado Department of Transportation (CDOT) data shows that, on average, 97,167 vehicles traveled at points along the US 36 corridor each day between Foothills Parkway in Boulder and Federal Boulevard in Westminster. The east end of the corridor carried substantially more traffic than the west end, with Pecos Street and eastward carrying the most daily vehicle trips at 139,000, accounting for 66,000 more vehicles than the west end of the corridor (Table 9). These vehicle counts also include traffic in the HOV/HOT lanes, which end near Federal Boulevard in the westbound direction, and begin near Sheridan Boulevard in the eastbound direction. It is important to recognize CDOT's vehicles counters do not exclude carpools, vanpools or transit vehicles commuting on US 36, so the not all vehicles counted represent SOV's.



Table 9: 2010-2011, Average Annual Daily Traffic (AADT) along US 36 (one-direction)

Point Description along US 36	2010	2011	2012	% Change
Foothills Pkwy, Boulder	71,000	72,000	73,000	1.4%
Interlocken Loop East, Broomfield	72,500	73,500	78,000	6.1%
Flatiron Circle, Broomfield	81,000	82,000	82,000	0.0%
104 th Avenue, Westminster	82,000	86,000	86,500	0.6%
Federal Blvd, Westminster	115,50	120,000	124,500	3.8%
East of Pecos Street, Adams County	138,00	136,000	139,000	2.2%
Corridor Average	90,500	94,917	97,167	1.4%

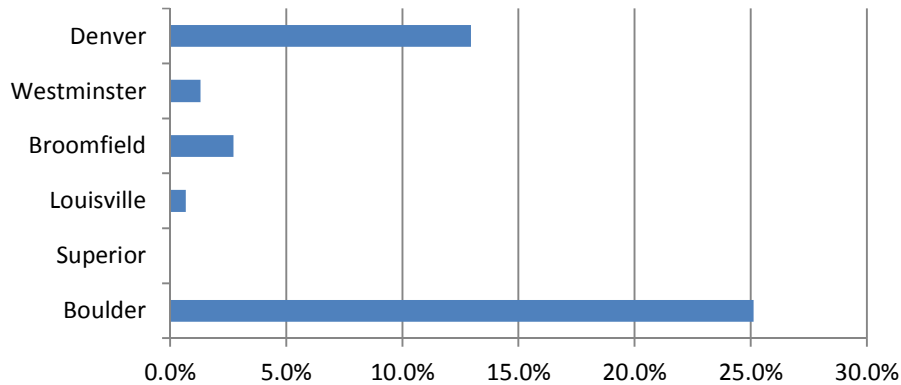
IV. Mitigating Congestion

A. RTD EcoPass

Several congestion mitigation programs are available to US 36 commuters, employers and employees. The **RTD EcoPass** program is an employer-provided transit benefit and EcoPasses are widely available to Boulder and Denver employees (below). Along the US 36 corridor, over 82,000 employees have access to an EcoPass. Additionally, RTD in coordination with the City of Boulder provides a Neighborhood EcoPass program. Over 8,800 Boulder residents have access to a Neighborhood EcoPass.



Percent of Total US 36 Corridor Employees with an Eco Pass



An RTD EcoPass is an unlimited use annual bus pass employers offer to their employees. With an EcoPass in hand, commuters are nearly seven times more likely to use transit (2005 Downtown Boulder survey). Analysis of 2012 RTD EcoPass data reveals the greatest percentage of employees with access to an RTD EcoPass is in Boulder, where over 25% of employees had access to an EcoPass (Table 10). This was twice that of the second highest employee EcoPass access group of Denver, where 13% of employees had access to an EcoPass. Further, the percentage of employees with access to an EcoPass at intermediate cities along US 36 was far lower than Boulder or Denver, with only 4.5% of employees in Broomfield and approximately 1% of employees in the remaining jurisdictions.

Table 10: 2012 RTD EcoPass Distribution By Jurisdiction

Jurisdiction	EcoPasses	Employment	Percent of Employees with an EcoPass
Boulder	21,683	86,303	25.1%
Superior	0	2,903	0.0%
Louisville	82	12,187	0.7%
Broomfield	868	31,949	2.7%
Westminster	481	36,569	1.3%
Denver	59,026	455,470	13.0%
Total	82,140	625,381	13.1%

Source: EcoPass - RTD. Employment - Denver Regional Council of Governments (DRCOG) 2009 Municipal Wage & Salary Employment Data.

The RTD Neighborhood EcoPass is a discounted annual transit pass purchased by a neighborhood organization for all members of participating households. In 2012, all participating neighborhoods were located in Boulder, where 12% of Boulder residents received a Neighborhood EcoPass decal.

Table 11: 2012 RTD Neighborhood EcoPass Distribution By Jurisdiction

Jurisdiction	Participating Households	Residents with an EcoPass	Residents	Percent of Residents with a Neighborhood EcoPass
Boulder	8,661	11,866	98,903	12.00%

Source: Neighborhood EcoPass - Regional Transportation District (RTD), US Census Bureau, 2007-2011 American Community Survey

B. DRCOG TDM Partnership

The DRCOG TDM Partnership program, created in 2011 forms an alliance with six Transportation Management Associations (TMAs) to cooperatively promote responsible commute options region-wide. A new brand name was needed to represent these efforts and WAY TO GO was unveiled in 2013.

Along with the new brand, the partnership reveals its upcoming campaign to raise awareness of the issue – too many people driving alone – and to motivate people to think about how they commute. The campaign is titled “Stop Being an SOV,” a suggestive play on words to grab people’s attention.



Over the years, DRCOG and the TMA’s efforts have evolved to include promotion of a host of services, all focused on reducing SOV travel. DRCOG and the TMO’s are well known for organizing Bike to Work

Day, the second-largest event of its kind in the nation, and also for promoting transit ridership, telework and flex work schedules.

The six partner organizations working alongside DRCOG under this umbrella brand are 36 Commuting Solutions, Boulder Transportation Connections, Denver South TMA, Downtown Denver Partnership, Stapleton TMA and Transportation Solutions.

C. DRCOG TDM Pool

The TDM Pool program offers grant funding to local non-profits and governments entities to reduce SOV trips in the Denver region. This funding pool was established by DRCOG in the Transportation Improvement Program (TIP) to be funded through the federal Congestion Mitigation Air Quality (CMAQ) program. DRCOG staff along with stakeholders administers the selection of specific projects to be funded.

36 Commuting Solutions committed to two projects during the 2012-2013 grant cycles. The first, called Arista on the Move, provides the Arista community with transit passes (upon completion of a program application and a short survey) to encourage ridership and allow them to give RTD transit a try, free of charge.



The second program, called 36 Prize Riders, operates between June 1 and August 3 and provides US 36 commuters a chance to win attractive prizes when they ride transit. Passengers are entered into a weekly drawing and odds of winning are based upon the number of trips logged for that week. In 2012, the program led to a reduction of 401,071 vehicle miles traveled.



D. US 36 Commuter Incentive Program

As part of the US 36 Express Lanes Project and other funding sources, 36 Commuting Solutions implemented commuter resources and subsidies to reduce the number of solo drivers and increase the use of transit, vanpooling and telework during the construction cycle. The program focuses on shifting SOV travelers to commute options through three main incentives:

- RTD 10-Ride Ticketbooks
- Telework training and grant funding
- Tiered vanpool subsidies

The Commuter Incentive Program (CIP) will measure its success based on feedback from pre and post surveys collected from program applicants and commuters. 36 Commuting Solutions employed a comprehensive marketing and communications strategy to entice interest and participation in the program. The project goal is to have distributed 166 transit ticketbooks, subsidized 57 vanpoolers, hosted four Telework training and distributed \$2500 in telework training by the end of Phase 1 construction project in December 2014.

V. Conclusion

The 2012 US 36 Mobility Report helps to identify facts and trends related to transit ridership, carpooling, vanpooling, and bicycling along the corridor. As an advocacy organization, whose mission is, “to enhance the mobility of commuters along the US 36 corridor for today and the future”, we are heartened by the trends shown throughout this report which indicates falling demand for Single Occupancy Vehicle (SOV) travel, and increasing trends in transit, cycling, and ridesharing such as carpooling and vanpooling. These modes represent the power of Transportation Demand Management (TDM) to significantly increase the capacity of transportation corridors, without the need for expensive facility expansions.

Any questions regarding the information contained in the report can be directed to info@36commutingsolutions.org or 303-604-4383.

VI. Appendix – Data

The basic data used in this report was drawn from the 2007-2011 American Community Surveys, available through the US Census Bureau. Data was drawn from the cities along US 36: Boulder, Louisville, Superior, Broomfield, and Westminster, and is reflected as a corridor average (the numbers for all communities are available in Table 3). The census numbers focused on *commuters* rather than trips. Therefore, two individuals commuting together in one vehicle would count as two trips using census data.

Data drawn from RTD, CDOT, and DRCOG, was considered to be primary source data, and was used to validate the extrapolations made using census data, and for comparison where there was a great discrepancy. The numbers from regional agencies also allowed this report to estimate the impact to Vehicle Miles Traveled Reductions. CDOT data, which presented the number of vehicle trips along US 36 at different corridor segments counted trips by *vehicle*, not by user, and did not differentiate between a vehicle carrying one individual and a transit vehicle or carpool carrying many individuals.