

# Denver Car Share Program 2015 Program Summary

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Apex Design Reference No. P130145, Task Order #20

**March 15, 2016**

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## **1. Introduction**

In May of 2013, the City and County of Denver (the City) adopted rules and regulations pertaining to private operators providing car sharing to Denver residents, employees, and visitors. Under the arrangement, car share operators provide a fleet of vehicles that individuals may use for personal or business trips, provided they are registered members with the car share provider. The Denver Car Share Program allows qualified car share operators to purchase permits to either dedicate a parking space in the ROW for the operator's use or purchase an area permit that allows the vehicle to park at meters without payment, park in exemption of two hour or greater time limits, and park in Residential Parking Permit areas. Permit fees cover the cost of lost meter revenue and the value of on-street space as well as program administration costs. Such an arrangement adds to the attractiveness of the service because it increases the number of on-street parking options available to car share members.

The City outlined a series of goals for the program in the rules and regulations, including reducing parking demand, reducing vehicle miles traveled, and enhancing mobility options for car share members. The rules and regulations required that each service provider conduct an annual survey of their membership to gauge the program's effectiveness in meeting these goals. Each car share provider distributed their own survey language to their respective car share members. Participating car share providers at the time of this report included eGo Car Share, car2go, Zipcar, and Enterprise CarShare. This report summarizes the results of the program's second year of operation (2014-2015), and provides a comparison to the program's first year of operation (2013-2014) where applicable.

## **2. Program Overview**

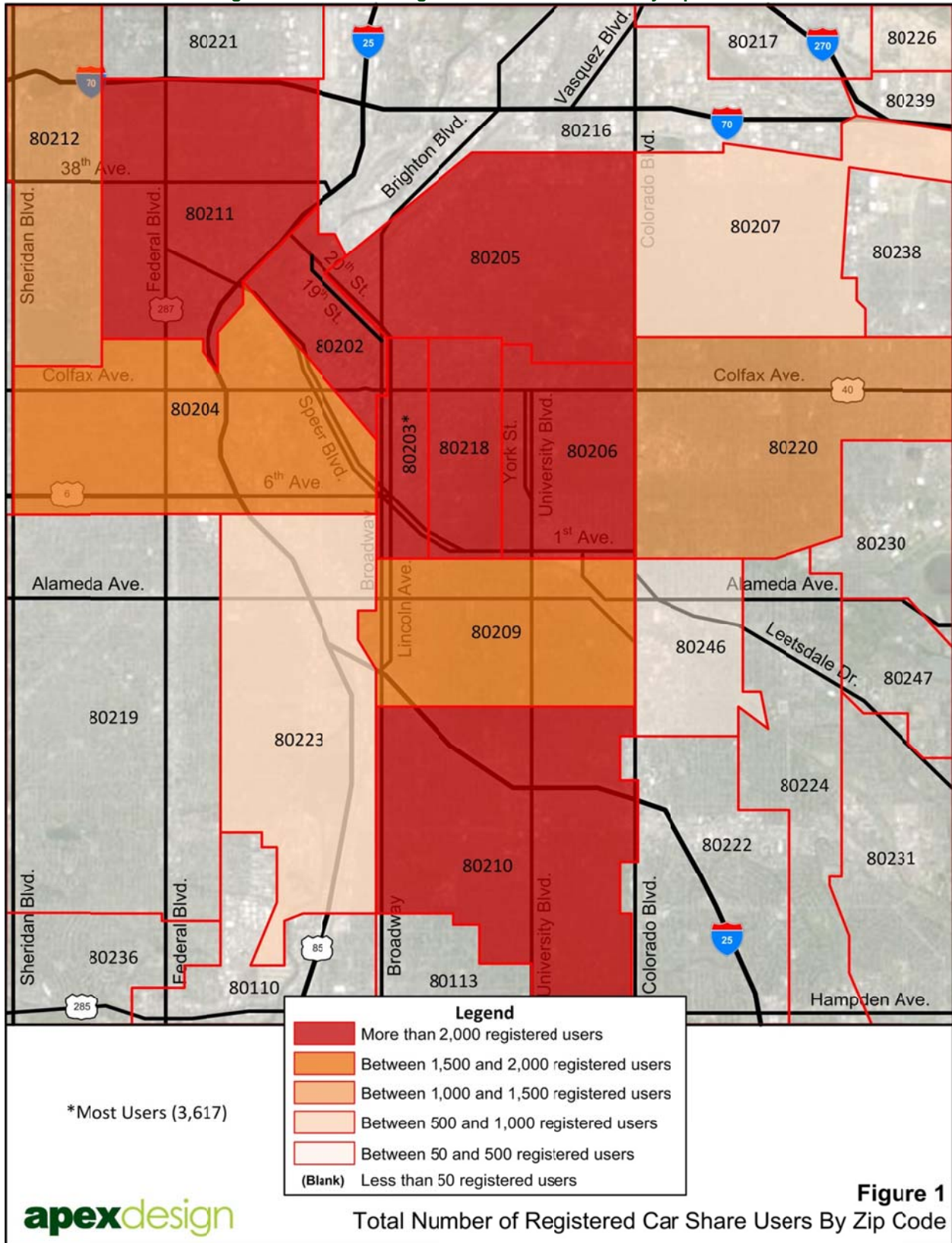
The membership survey included questions about travel habits, modes, and types of trips made using a car share. This section provides an overview of members and their travel habits.

### **2.1. Membership**

The typical car share member lives downtown or in one of the neighborhoods adjacent to downtown, has a commute of less than five miles, does not typically drive to work, and uses car share for personal use. Figure 1 shows the total number of members living in each zip code in and around the downtown Denver area, while Figure 2 shows the percentage of the total population in each zip code that are registered car share members. As shown, the highest number of car share members resides in the Capitol Hill neighborhood, but all of the neighborhoods surrounding downtown show higher membership numbers. These neighborhoods also have the highest percentage of car share members in their total population. This represents a change from 2014, when the highest number of car share members resided in the Highlands area, and the greatest percentage of a population with car share members was in the downtown area. Overall there has been a significant increase in the number of car share members in Denver, with approximately 28,500 in 2015. This is over a 60 percent increase from the approximately 17,500 members reported in 2014. These 28,500 car share members took over 591,500 car share trips in 2015.

## Denver Car Share Program 2014-2015 Assessment

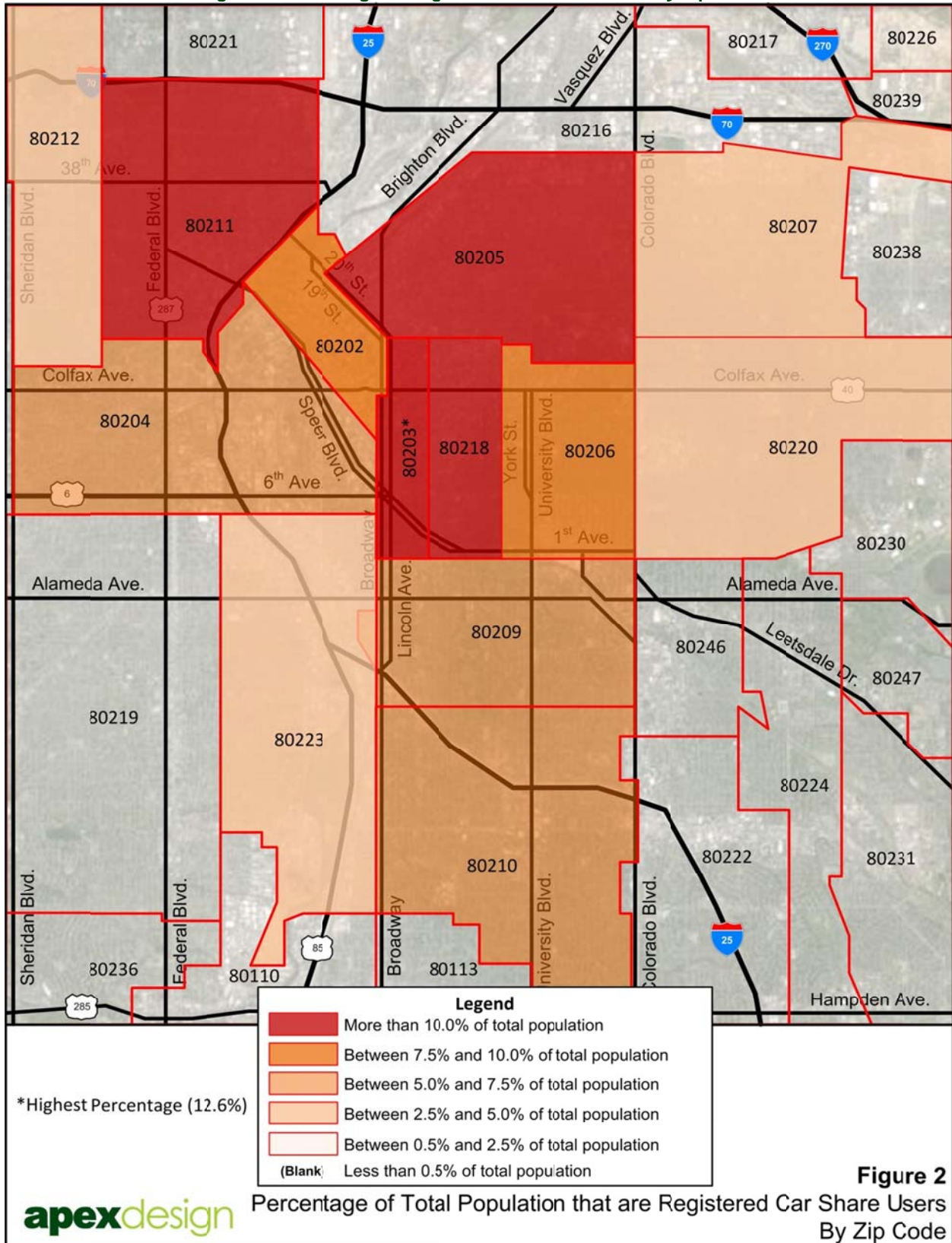
Figure 1: Number of Registered Car Share Users by Zip Code





## Denver Car Share Program 2014-2015 Assessment

Figure 2: Percentage of Registered Car Share Users by Zip Code



## 2.2. Personal Mobility

The typical car share member owned one or two vehicles and drove less than 10,000 miles per year prior to joining a car share. The vast majority of car share members walk to a car share location when using their membership, are not Denver B-cycle members, and do not have an RTD Eco Pass. Once they arrive at the car share location, they generally drive between 2-5 miles to their destination. Over 20 percent of car share members surveyed have given up a vehicle and almost another 20 percent have considered giving up a vehicle as a result of becoming a car share member. Prior to becoming a member, 41 percent of those surveyed never commuted by car and 31 percent commuted by car five days a week. After becoming members, the number stayed fairly consistent for those never commuting by car, but those commuting by car five days a week dropped to 26 percent. As shown in Table 1, these findings are similar to the 2014 survey results.

**Table 1: Commuting Habits**

Commuting Habits	2014		2015	
	Before Membership	After Membership	Before Membership	After Membership
Never Commute by Car	39%	36%	41%	40%
Commute by Car 5 Days/Week	31%	26%	31%	26%

Additionally, car share membership has been shown to result in changes to members' personal mobility choices. After joining a car share, members walked, took public transit, and rode their bikes more often than prior to becoming members. On the other hand, members drove alone, carpooled, used B-Cycle, and used motorcycles or scooters less than prior to becoming members. Membership did not significantly impact working from home. These mobility choices are further discussed in Section 3.3 Enhanced Mobility and summarized in Table 7.

## 2.4. Trip Purpose

Members use car share most frequently for entertainment-related trips (theater, concert, etc.), with over 60 percent of members indicating they have used it for entertainment at least a few times a year, and over 30 percent indicating they have used it for entertainment at least once a month. Personal errands came in second for the most frequent trip purpose, with just under 60 percent of members indicating they have used it for personal errands at least a few times a year. Commuting, visiting friends, and recreation all had just under 45 percent of members indicating they use car share for those types of trips at least a few times a year. Other frequent uses include work-related trips (38 percent), grocery shopping (35 percent), retail shopping (33 percent), sporting events (32 percent), giving someone a ride (26 percent), and healthcare (24 percent). Members very rarely use car share for education (9 percent), moving/hauling (9 percent), and trips to the airport (8 percent). As shown in Table 2, these findings are all relatively similar to the results of the 2014 survey. It should be noted that a change in phrasing of the questions between the 2014 and 2015 surveys may have resulted in overall higher percentages reported in 2014 (in 2015 the "rarely" category was changed to "a few times a year").

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**Table 2: Trip Purpose**

Trip Purpose	2014 Percent of Car Share Members <sup>1</sup>	2015 Percent of Car Share Members <sup>2</sup>
Entertainment (theater, concert, etc.)	76%	62%
Personal Errands	73%	60%
Commuting	59%	45%
Visiting Friends	60%	44%
Recreation	57%	43%
Work Related Trips	47%	38%
Grocery Shopping	45%	35%
Retail Shopping	42%	33%
Sporting Events	N/A <sup>3</sup>	32%
Giving Someone a Ride	36%	26%
Healthcare	37%	24%
Education	12%	9%
Moving/Hauling	14%	9%
Trips to the Airport	11%	8%

*1. The percent of car share members shown from 2014 are those that used car share for the type of trip listed anywhere from rarely to more than five times a month.*

*2. The percent of car share members shown from 2015 are those that used car share for the type of trip listed anywhere from a few times a year to more than twice a week.*

*3. This option was not included as a possible response in the 2014 survey.*

### 2.5. Reasons for Using Car Share

About two-thirds of members surveyed cited convenience/increased mobility options as one of the reasons why they joined a car share (66 percent). Parking flexibility was also a very common reason members joined a car share service (61 percent). Other common reasons include alternative modes of transportation (42 percent), cost savings (32 percent), lack of a personal vehicle (29 percent), and environmental awareness (22 percent). These findings are discussed further in Section 3.3 and summarized in Table 6.

### 2.6. Parking

The vast majority (86 percent) of car share members surveyed have not changed their personal parking habits since becoming members. Two-thirds of car share members surveyed that do own a personal vehicle predominately park off-street, with the remaining one-third predominately parking on-street.

### 2.7. Car Share and Additional Vehicle Ownership

The survey included a question about whether members would consider giving up a car because of becoming a car share member. One in five members surveyed cited that they either gave up a car before becoming a member or gave up a car after becoming a member (22 percent), while another one in five cited that they have considered giving up a car (19 percent) but have not yet done so. Similarly, the majority of members surveyed cited that they would not purchase a new vehicle if car sharing disappeared (55 percent). One-fifth of members surveyed are unsure if they would purchase an additional vehicle if car share disappeared (20 percent), and almost another one-fifth would purchase an additional vehicle (17 percent). As shown in Table 3, these results are similar to those from the 2014 survey.

## Denver Car Share Program 2014-2015 Assessment

**Table 3: Car Share and Additional Vehicle Ownership**

Vehicle Ownership	2014 Percent of Respondents	2015 Percent of Respondents
Either gave up a car before becoming a member or gave up a car after becoming a member	23%	22%
Have considered giving up a car	22%	19%
Would not purchase a new vehicle if car sharing disappeared	58%	55%
Unsure if they would purchase an additional vehicle if car share disappeared	27%	20%
Would purchase an additional vehicle	15%	17%

### 3. Program Assessment

Per the City's Rules and Regulations, the intent of the Denver Car Share Program is to provide the opportunity to reduce parking demand, reduce vehicle miles traveled, and enhance mobility options for members. This section assesses how well the program is meeting these three metrics after the second year of operation.

#### 3.1. Reduce Parking Demand

Members were asked how many days a week they drove to work or school prior to joining a car share and how many days a week they drove to work or school after joining the program. As Table 4 indicates, prior to joining, the 28,484 current car share members generated a combined parking demand of 68,639 vehicles per week. After joining the program, those same members generated a parking demand of 63,838 vehicles per week, thereby reducing demand by seven percent. This is an improvement on the four percent parking reduction reported in the 2014 survey. These results suggest that members parking demand is decreased after joining the program.

**Table 4: Weekly Parking Demand Created by Car Share Members before and after Joining the Denver Car Share Program**

Days/Week Driving to Work/School	Before Joining Car Share		After Joining Car Share	
	Number of Members	Parked Vehicles/Week	Number of Members	Parked Vehicles/Week
0	11,726	0	11,401	0
1	1,461	1,461	2,454	2,454
2	1,746	3,492	2,088	4,176
3	1,649	4,946	2,066	6,199
4	2,129	8,515	2,260	9,040
5	8,911	44,555	7,521	37,605
6	367	2,203	493	2,956
7	495	3,465	201	1,409
<b>Total</b>	<b>28,484</b>	<b>68,639</b>	<b>28,484</b>	<b>63,838</b>
			<b>Percent Reduced, 2015</b>	
			<b>7.0%</b>	
			<b>Percent Reduced, 2014</b>	
			<b>4.0%</b>	



### 3.2. Reduction in Vehicle Miles Traveled

Members were asked approximately how many miles they drove per month prior to joining a car share and how many miles they now drive per month after joining the program. As Table 5 indicates, prior to joining a car share, members drove an average of approximately 7,350 miles per year, and after joining they drove approximately 6,450 miles per year, a 12 percent reduction. This corresponds to approximately 25.6 million fewer vehicle miles traveled by car share members in the past year. These results suggest that member's vehicle miles traveled is reduced after joining the program.

**Table 5: Annual Vehicle Miles Traveled by Car Share Members Before and After Joining the Denver Car Share Program**

Average Annual Mileage Before Joining Car Share	Average Annual Mileage After Joining Car Share	Net Average Reduction in Mileage
7,350	6,450	900
<b>Total Car Share Members</b>		<b>28,484</b>
<b>Approximate Total Mileage Reduction</b>		<b>25,635,600</b>

### 3.3. Enhanced Mobility

Members were asked to identify the reasons they use car share. As Table 6 indicates, 66 percent of the respondents in 2015 identified convenience and increased mobility options as one of the reasons for joining the program. This level of response would indicate that the members believe that the program meets the stated intent of enhancing mobility options. It should also be noted that the Convenience and Increased Mobility Options response did drop rather significantly between 2014 and 2015, from 91 percent to 66 percent. In fact, the percent of respondents that selected each reason for using car share dropped from 2014 to 2015. The exception was the Alternative Modes of Transportation Do Not Meet All Mobility Needs response, which in 2014 listed as Lack of Alternative Transportation. The drop in responses across the board may be due to more options being provided and respondents only choosing a limited number. It is suggested that the 2016 survey include the exact same response options as the 2015 survey to more accurately evaluate changes in the survey results.

**Table 6: Reasons Members Use the Denver Car Share Program**

Reason	2014 Percent of Respondents <sup>1</sup>	2015 Percent of Respondents <sup>1</sup>
Convenience and Increased Mobility Options	91%	66%
Parking Flexibility	76%	61%
Alternative Modes of Transportation (Transit, Biking, etc.) Do Not Meet All Mobility Needs	29% <sup>2</sup>	42%
Cost Savings	45%	32%
Lack of a Personal Vehicle	N/A <sup>3</sup>	29%
Environmental Awareness	35%	22%
Variety of Vehicle Choices	36%	11%
Other	N/A <sup>3</sup>	18%

1. Members were asked to select all of the options that applied to them, so the percentages shown add up to greater than 100.

2. This response was listed as "Lack of Alternative Transportation" in the 2014 survey.

3. This option was not included as a possible response in the 2014 survey.

## Denver Car Share Program 2014-2015 Assessment

A second way of assessing the program’s effect on enhancing mobility is to examine how members’ travel modes changed after they joined the program. Table 7 summarizes the responses to the various travel mode questions posed in the member survey. As indicated, members drove alone significantly less after joining a car share, and were also less likely to carpool, use a motorcycle or scooter, and use B-cycle. On the other hand, members increased their frequency of walking, taking public transit, and biking. Based on these results, it would appear that the program continues to be moderately effective in getting members to use other transportation options for their trips, instead of just switching their personal vehicle with a car share vehicle. Overall, the 2015 results are similar to those from 2014, with the notable exception that members’ frequency of using public transit after becoming members rose in 2015, as opposed to dropping in 2014.

**Table 7: Travel Mode Use after Joining the Denver Car Share Program**

Travel Mode	2015				2014
	Less	Same	More	Net Change	Net Change
Walk	9%	57%	30%	+21%	+15%
Public Transit	15%	58%	20%	+5%	-5%
Bicycle	10%	65%	15%	+5%	+7%
Work at Home	6%	61%	9%	+3%	0%
B-Cycle	14%	72%	6%	-8%	-2%
Motorcycle/Scooter	15%	73%	3%	-12%	-6%
Carpool	18%	69%	4%	-14%	-11%
Drive Alone	38%	51%	4%	-34%	-37%

### 4. Downtown Denver Partnership Survey

Each fall, the Downtown Denver Partnership (DDP) surveys employees working in downtown Denver to examine the trends and habits of Downtown commuters. The Downtown Denver Commuter Survey measures a sample of the downtown employee population to analyze commuting patterns, explore the attractiveness of transportation benefits and determine how commuters currently travel to their downtown work destinations. This survey differs from the Denver Car Share Program survey because it represents a cross-section of all employees in the downtown area, rather than just car share members.

Since 2012, the DDP survey has included several questions about car share membership, whether it is employer-provided or something the employee has elected to do on their own. This section summarizes the responses to car share-related questions from the DDP survey.

#### 4.1. Downtown Employee Car Share Membership

In the 2015 survey, 14 percent of downtown employees indicated that they were members of a car share. This percentage has increased in each of the past four years. In 2012, the first year the question was asked, only 1.5 percent of downtown employees were car share members. In 2013, when the City adopted regulations that allowed car share providers to purchase parking permits and provide “free” on-street parking to members, membership increased to 7 percent. In 2014, membership increased to 12 percent. This positive trend would appear to indicate that car share continues to grow in popularity with downtown employees and is marketing itself well to that user group (80 percent of downtown employees are familiar with the program).

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**Table 8: Downtown Employee Car Share Membership**

Year	Car Share Membership (as Percent of Total Downtown Employees)
2012	1.5%
2013	7%
2014	12%
2015	14%

### 4.2. Car Share as an Employer-Provided Benefit

Although employee membership has increased each year, very few employers have embraced it as an employer-provided benefit, and even fewer employees have elected to participate in it through their company. As of 2015, only seven percent of employees indicated it was a service offered by their employer, and only one percent of the employees indicated that they elected to receive it as a benefit. Instead, most employees elect to receive benefits such as transit passes and subsidized parking (45 percent use transit and 36 percent drive alone). As shown in Table 9, the 2015 results are similar to those reported in 2014.

**Table 9: Employer-Provided Transportation Benefits**

Transportation Benefits Offered by Downtown Employers	Percent of Downtown Employees Offered Benefit <sup>1</sup>		Percent of Downtown Employees Using Benefit	
	2014	2015	2014	2015
Car Share Membership and/or Usage Fees	8%	7%	1%	1%
Parking Space	62%	61%	30%	31%
Transit Pass	85%	81%	56%	54%
B-Cycle Membership and/or Usage Fees	17%	14%	3%	2%
Secure Bicycle Parking	57%	53%	12%	11%

*1. This includes employers that offer the benefits regardless of how much of the cost is covered.*

## 5. Summary and Recommendations

The survey results suggest that the Denver Car Share Program continues to be successful in achieving the three-pronged intent of reducing parking demand (car share members reduced their weekly parking impact by seven percent after joining the program), reducing vehicle miles traveled (car share members reduced their annual vehicle miles traveled by 12 percent after joining the program), and enhancing the mobility options for its users (66 percent of the members identified increased mobility as one of the reasons they joined the program). Furthermore, the Downtown Denver Partnership's annual survey indicates that the Denver Car Share Program is becoming increasingly popular with downtown employees, with 14 percent of all downtown employees indicating they are car share members (up from 12 percent in 2014, and up from 1.5 percent in 2012 when the question was first asked).

Given the positive results, it is recommended that the City continue to support the Denver Car Share Program through the provision of parking permits. However, to better measure the program's effectiveness at meeting the intent of reducing parking demand, reducing vehicle miles traveled, and enhancing mobility options for members, it is recommended that the car share providers be required to ask the exact questions in their surveys as the ones provided to them by the City. Additionally, for those respondents that indicated they gave up a car either before or after joining the program, a follow-up question should be provided about how many cars they had before they gave one up.