



# 2014 Capital Bikeshare Member Survey Report



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## EXECUTIVE SUMMARY

### Overview

This report presents the results of the November 2014 Capital Bikeshare Customer Use and Satisfaction Survey conducted for the Capital Bikeshare program (Capital Bikeshare), a program jointly owned and sponsored by the District of Columbia, Arlington County, VA, the City of Alexandria, VA, and Montgomery County, MD, and operated by Motivate International, Inc. Capital Bikeshare offers short-term use of more than 2,500 bicycles to registered members and day-pass users at more than 350 stations in the District of Columbia, Arlington County and the City of Alexandria in Virginia, and Montgomery County in Maryland. Users register for an annual or 30-day membership and receive a Capital Bikeshare key that allows them to unlock a bike at any station. Users can return the bike to the same station or to any other station in the network, facilitating both return and one-way trips.

Capital Bikeshare's management was interested in examining users' experience with the program and bikeshare's impact on users' travel patterns. The survey was conducted for the following primary purposes; to explore:

- Demographic characteristics of Capital Bikeshare users
- Characteristics of Capital Bikeshare trips
- Travel changes made in response to Capital Bikeshare availability
- Users' satisfaction with Capital Bikeshare features

On October 23, 2014, Capital Bikeshare staff sent an email to all of the approximately 27,600 annual/30-day members, informing them of the online survey and providing the link to the survey website. The email indicated that Capital Bikeshare would enter members who completed the survey entry into a drawing for one of five annual memberships. To increase the response rate further, Capital Bikeshare sent a reminder in the monthly e-newsletter that is distributed to all members. During the approximately four-week period that the survey website was active, 4,314 members completed the survey, for a total response rate of 16%.

### Key Conclusions

Several overall conclusions, generally related to the personal travel benefits and travel impacts of bikesharing rise to the top of importance.

- **Capital Bikeshare (CB) members benefit through easier, faster access to destinations and access to a wider range of destinations** – Half of the respondents had made a trip in the past month that they would not have made without bikeshare. Of these respondents, 65% said they would not have made the trip because it was too far to walk, so bikeshare broadened their travel destination options. Other respondents reported reasons related to the difficulty of travel or disadvantages of driving to a particular destination or at a particular time of day. For these members, bikeshare expands their easy and convenient travel options.
- **The “transit access” role that bikeshare offers expands travel range even further** – Nearly two-thirds (64%) of respondents said at least one of the bikeshare trips they made last month either started or ended at a Metro-rail station; 21% had used bikeshare six or more times for this purpose. About a quarter (24%) of respondents used Capital Bikeshare to access a bus in the past month.
- **Capital Bikeshare makes travel fun and more flexible** – More than three-quarters of members said they were motivated to join Capital Bikeshare to have access to a new travel option or a one-way travel option (84%), or simply because biking is a fun way to travel (77%). The opportunity to make one-way trips by bikeshare is particularly valuable to many members, who now have a wealth of travel options – bikeshare, transit, taxi, walking, carshare – that they can choose “in the moment,” increasing their travel flexibility.
- **Bikeshare serves both work-related and personal travel needs** – More than eight in ten (85%) respondents reported that they at least occasionally used bikeshare for social/entertainment trips. Respondents used bikeshare for other non-work trips at nearly as high a rate; personal appointments (79%), shopping/errands

(78%), and to go to a restaurant/out for a meal (77%). But use of bikeshare was nearly as high for commuting; 74% of respondents at least occasionally used bikeshare to go to or from work. And commuting was a particularly frequent bikeshare purpose for these respondents; 49% commuted by bikeshare three or more times per month and 36% rode bikeshare to or from work six or more times per month.

- **Bikeshare allows members to give up the cost and hassle of car ownership and driving** – Four in ten Capital Bikeshare members didn't have access to a car or other personal vehicle. Eight percent of all members surveyed had sold a household vehicle since joining CB and 81% of these members said bikeshare was a factor in their decision to sell the vehicle. A quarter (24%) of respondents said they reduced their driving miles since joining Capital Bikeshare. Across all respondents, the average driving reduction was 158 miles per year, equating to about 4.4 million fewer driving miles by the 27,600 bikeshare members (in November 2014).



- **Bikeshare members shift some trips to bicycle from taxi, transit, and walking** – Eighty-six percent of respondents increased their use of bicycling since joining Capital Bikeshare and 50% said they ride a bike much more often. By comparison, respondents reduced use of all other transportation modes; 55% drove a car less often, 59% used a taxi less often, 58% rode Metrorail less often, 52% rode a bus less often, and 51% decreased their use of walking, suggesting some shifts to each of these modes to biking.
- **Bikeshare members who used Capital Bikeshare frequently reported the greatest reduction in use of non-bicycle modes** – For example, 70% of respondents who made 11 or more CB trips in the past month reduced their use of Metrorail, compared with 46% of respondents who made between one and five CB trips in the past month, a net additional reduction of 28 percentage points for frequent riders. The results were similar for other non-bike mode groups; the share of respondents who reduced use of a non-biking mode since they joined Capital Bikeshare increased steadily as their bikeshare use increased.
- **Capital Bikeshare members save on personal travel cost** – Respondents reported saving an average of \$13.65 per week on personal transportation costs as a result of their bikeshare use, about \$710 over the course of the year. Across the estimated 27,600 Capital Bikeshare members in November 2014, the collective saving was nearly \$20 million each year.
- **Respondents give high marks to most bikeshare features** – More than six in ten gave ratings of 4 or 5 (Excellent) to safety of stations, Capital Bikeshare website, call center, mechanical repair of bikes, and maps at Capital Bikeshare stations. Respondents were least satisfied with the availability of bikes when they want to pick-up a bike and availability of open docks when they want to return it; only about four in ten respondents rated these features as 4 or 5.
- **CB members were eager for expansion of Capital Bikeshare** – The most noted expansion need appeared to be for more docks at existing stations; 54% of respondents chose this option for greater access to bikes in popular

bikeshare pick-up and drop-off locations. The second highest priority was for new stations in residential neighborhoods (44%), perhaps indicating a desire for greater access to bikeshare for short trips within or from a home neighborhood. About the same share (43%) also noted a need for expansion within the existing service area (greater infill or density of stations). A third (32%) of respondents said they wanted expansion to areas that bikeshare doesn't serve now (greater coverage).

## **Bikeshare Users Demographic and Membership Characteristics**

**Bikeshare users did not mirror the adult population of the Washington metropolitan region** – More than nine in ten survey respondents were employed, while the U.S. Census reports that only about seven in ten adults in the Washington region are employed. But bikeshare survey respondents also differed from the general employed population. Compared with all commuters in the region, they were, on average, considerably younger, more likely to be male, Caucasian, and slightly less affluent.

**Bikeshare visibility and referrals were important marketing tools for Capital Bikeshare** – Respondents were most likely to have learned about Capital Bikeshare by seeing a CB station (30%) or through a referral from a friend or family member (26%). These two sources have become more important as the program has matured; 35% of members who joined CB in 2014 mentioned seeing a station, compared with only 11% who joined in 2010 and 24% who joined in 2011. Referrals also have grown, with 35% of 2014 new members mentioning this source, compared with 11% of members who joined in 2010 and 24% of member who joined in 2011.



**The primary motivations for joining Capital Bikeshare were for greater access and one-way travel flexibility** – Ninety-four percent of respondents said they were motivated by the ability to get around more easily or more quickly. Eight in ten (84%) were motivated by having a new travel option or a one-way travel option. But 77% were motivated simply by the enjoyment of biking and because it was a fun way to travel. About six in ten cited a desire for exercise (60%) or a desire to save money on transportation (57%).

## **Bikeshare Use Characteristics**

**Capital Bikeshare use was distributed evenly across frequency categories, showing demand for the service at many use levels** – About 20% of respondents had made two or fewer bikeshare trips in the month before the survey, 21% made between three and five trips, and 19% made between six and ten trips. About 40% were frequent users, making 11 or more trips in the past month. Respondents made an average of 13 trips in the past month.

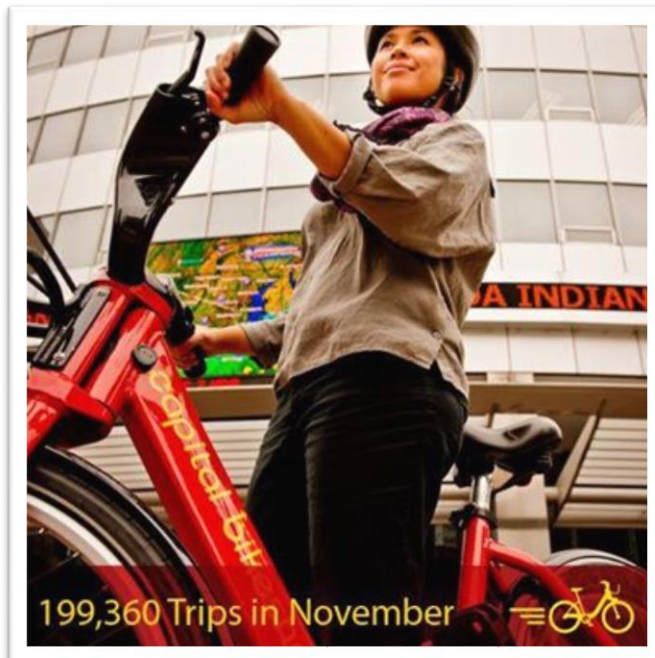
**The top bikeshare trip purposes overall were for personal/non-work trips** – Eighty-five percent of respondents reported that they at least occasionally used bikeshare for social/entertainment trips and four in ten used bikeshare three or more times per month for this purpose. Eight in ten respondents used bikeshare for three other personal or non-work trip purposes: to reach personal appointments, shopping/errands, and restaurants/meals and about one-quarter of respondents used bikeshare for each of these purposes at least three times per month.

**A large share of members used bikeshare for their trip to work** – Commuting was an important bikeshare purpose also; 74% of respondents used bikeshare to commute to or from work at least occasionally. But commuting was a particularly frequent bikeshare purpose for these respondents; 49% commuted by bikeshare three or more times per month and 36% rode bikeshare to or from work six or more times per month.

**Capital Bikeshare also served as a feeder service to reach transit stops** – Two-thirds (64%) of respondents said that at least one of the Capital Bikeshare trips they made last month either started or ended at a Metrorail station and 21% had used bikeshare six or more times for this purpose. About a quarter (24%) of respondents used Capital Bikeshare to access a bus in the past month.

**Respondents' recent bikeshare trips were evenly divided between work and non-work trip purposes** – The single most common recent trip purpose overall was to go to or from work; 46% of respondents noted this purpose. The most common recent non-work trip purposes were social/entertainment and personal appointment, mentioned by 19% and 9% of respondents, respectively. As noted above, a slightly smaller share of respondents reported using bikeshare for commuting than for non-work travel. But a larger share of respondents reported using bikeshare frequently for commuting than reported frequent use for any individual non-work purpose.

**Bikeshare was the choice for most recent trips because it was the fastest and easier way to travel** – Eight in ten (80%) respondents chose bikeshare for the recent trip because it was a faster or easier way to reach their destination. Four in ten said the destination was too far to walk and an equal share said bicycling was the least costly option. Respondents also noted other issues related to characteristics of the destination or the time of day they were traveling; 23% said public transportation was not available or inconvenient to reach that destination, 21% said that parking was very limited at that destination, and 20% said that transit service didn't operate or was inconvenient at that time of day. About one-quarter used bikeshare because they didn't have a car.

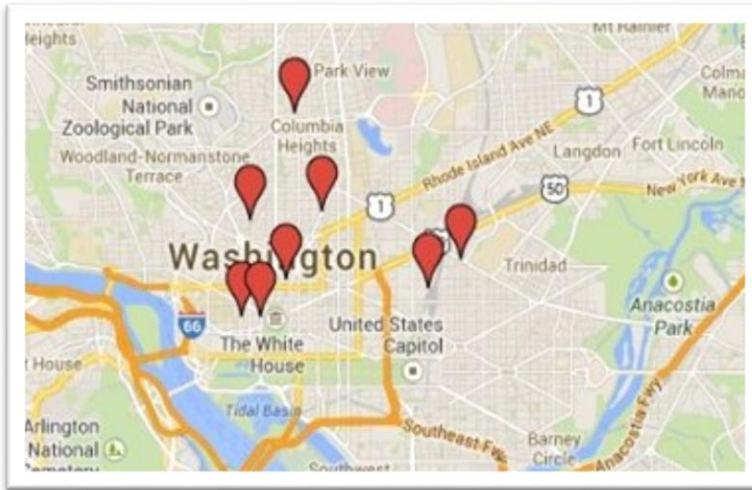


**Bikeshare offered a new travel option for members who didn't have a car and an alternative to driving for those who did** – Young respondents and respondents with lower incomes were more likely to say they chose bikeshare for a recent trip for reasons related to their lack of transportation options: too far to walk, unavailable or inconvenient transit, or lack of a car. These respondents also noted reasons related to the time and cost advantage of Capital Bikeshare in comparison with other travel options. For these members, bikeshare expanded the range of destinations to include locations that were otherwise difficult to reach. Older respondents, those with higher incomes, and respondents who had a personal vehicle were more likely to mention reasons related to the disadvantages of driving to a particular destination. For these respondents, Capital Bikeshare made the destination more attractive or less of a bother to reach than it otherwise would be.

**Forty percent of respondents would have ridden a bus or train if Capital Bikeshare had not been available for the most recent trip** – Another four in ten (37%) would have walked to their destination. Only 6% of respondents would have driven or ridden in a personal vehicle, but since 43% of respondents did not have a personal vehicle regularly available, this would not be an easy option for many. Six percent would have used a taxi and 5% would have ridden a personal bike.

**Respondents' alternate mode choices for these trips differed by the type of trip they were making** – More than half of respondents whose last trip was to go to or from work would have used transit for the trip. Respondents whose last trip was for shopping/errands and exercise/recreation were more likely to say they would have walked than were respondents generally, suggesting they would have substituted a trip to a local shop for a trip to a shop farther away. Taxi would have been the choice for a higher than average share of social/entertainment and personal appointment trips.

## Use of Capital Bikeshare to “Induce” Trips

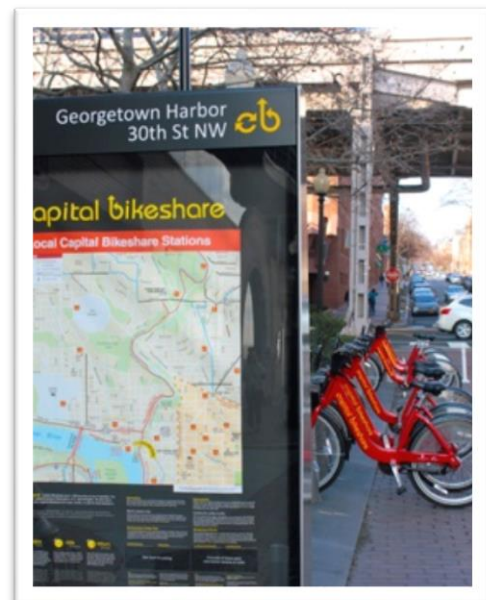


**In the past month, 49% of respondents used bikeshare to make at least one trip they would not have made (“induced” trips) if bikeshare had not been available** – Nearly all induced trips were made for non-commute trip purposes. One-quarter made an induced social/entertainment trip and 21% made a shopping/errand trip. Respondents also reported making induced trips to restaurants (16%), for personal appointments (14%), and for exercise/recreation (13%). Only 9% said they made an induced trip to go to or from work, indicating these trips were typically not considered discretionary trips.

**Two-thirds (65%) of respondents said they would not have made the induced trips without Capital Bikeshare because it was too far to walk** – This suggests respondents might have substituted some induced trips to a distant destination for trips they might have made to locations closer to their origin location. In this way, Capital Bikeshare broadened the travel destination options. Other common reasons were related to characteristics of the destination or time of travel; 48% said bicycle was a faster or easier way to reach the destination and substantial percentages reported that public transportation was either not available or inconvenient to reach that destination (37%) or at that time of day (23%). One-quarter (25%) didn’t have a car and 18% wanted to get exercise.

**Capital Bikeshare access made establishments more attractive to Bikeshare members** – More than eight in ten respondents said they were either much more likely (34%) or somewhat more likely (48%) to patronize an establishment that was accessible by Capital Bikeshare.

**Respondents who gave high ratings for the value of bikeshare access made induced trips at a much higher rate than did those who gave lower ratings** – Among respondents who were much more likely to patronize a CB-accessible establishment, 96% made at least one bikeshare trip last month, compared with 91% of those who were not more likely. But a more interesting finding is that respondents who said they were much more likely were the most frequent users of the Capital Bikeshare service; 50% made six or more trips, compared with about one-third of those who were somewhat more likely or not more likely to patronize the bikeshare-accessible establishment. This suggests that the decision to make some, and perhaps many, of the induced trips was motivated by the establishments’ accessibility.



## Change in Mode Use Since Joining Capital Bikeshare

**Bikeshare members substantially increased their bicycle use and substantially reduced their car and taxi use since they joined Capital Bikeshare** – More than eight in ten respondents said they bicycled more often since joining; 34% said they bicycled “somewhat more often” and 50% bicycled “much more often.” More than half (55%) of all survey respondents drove a car less often. Six in ten (59%) said they used a taxi less often than before they joined Capital Bikeshare. Bikeshare members also substantially reduced their use of public transit; 58% rode Metrorail less often and 52% rode a bus less often. And 51% of respondents decreased their walking trips.

**Bikeshare members who used Capital Bikeshare frequently reported the greatest reduction in use of non-bicycle modes** – For example, 74% of respondents who made 20 or more CB trips in the past month said they reduced their use of Metrorail, compared with 46% of respondents who made fewer than six CB trips, a net additional reduction of 28 percentage points. The results were similar for other non-bike mode groups; the share of respondents who reduced use of a non-biking mode since they joined Capital Bikeshare increased steadily as their bikeshare use increased. The change was most pronounced for Metrorail and bus (net differences of 28 points



and 26 points, respectively). The differences were less dramatic for use of walking (11 points), driving a car (12 points), and taxi (8 points), suggesting that bikeshare was substituted less often for these modes.

### **A quarter of respondents reduced their annual driving miles**

– Respondent also were asked approximately how many miles they drove per year in the Washington region at the time of the survey and how many miles they drove in the year before they joined Capital Bikeshare. A quarter (24%) reduced their driving miles; 8% reduced driving by more than 1,000 miles. Two-thirds (64%) of respondents who reported their mileage made no change in driving miles and only 12% increased their driving miles.

**Capital Bikeshare members reduced 4.4 million driving miles annually** – On average, survey respondents who reported both a current and pre-Capital Bikeshare mileage drove about 2,830 miles per year before joining Capital Bikeshare and 2,672 miles per year at the time of the survey, for a reduction of about 158 miles annually. When these survey results were applied to the estimated 27,600 bikeshare member population in November 2014, the month in which the survey was conducted, the results were as follows:

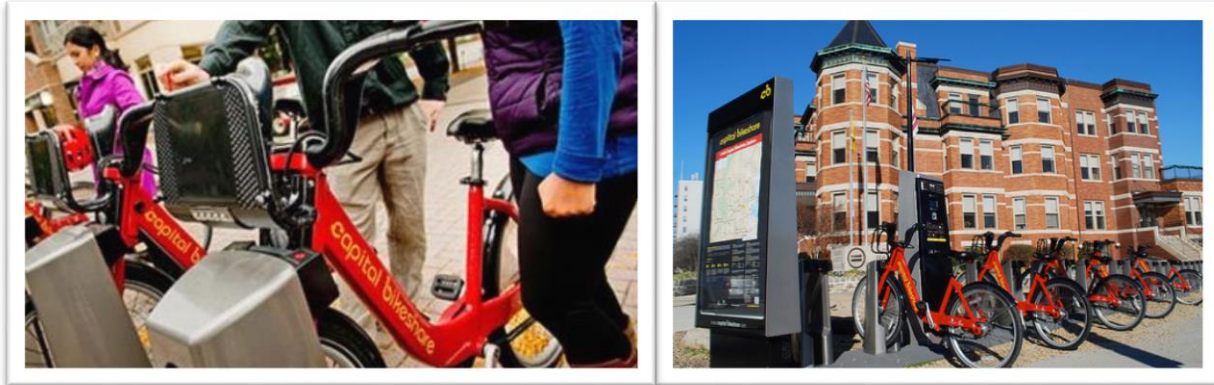
- Number of Capital Bikeshare members (November 2014) 27,600
- Estimated annual VMT reduced per member 158
- Estimated total annual VMT reduced 4,360,000 annual miles (rounded)

**On average, each Capital Bikeshare member saved \$710 per year on personal travel cost** – More than eight in ten (83%) respondents said they saved money on weekly travel costs by using Capital Bikeshare. About six in ten said they saved between \$1 and \$20 per week, 16% saved between \$21 and \$40, and 5% saved more than \$40. Across all respondents, the average weekly saving would be \$13.65, or about \$710 annually. Collectively, the estimated 27,600 Capital Bikeshare members in November 2014 were saving nearly \$20 million per year:

- Number of bikeshare members (November 2014) 27,600
- Estimated annual cost saving per member \$710
- Estimated total annual cost saving \$19,600,000 annually (rounded)

## **Bikeshare Members' Commute Travel Patterns**

**Bikeshare members traveled an average of 6.2 miles to work one-way, well under the average 16.0 miles distance of commuters region-wide** – Two in ten bikeshare respondents traveled fewer than two miles to work and 61% traveled fewer than five miles. By contrast, only 17% of all regional commuters traveled fewer than five miles.



**Capital Bikeshare members drove alone to work much less than did commuters region-wide** – The overwhelming majority of employed respondents used a non-drive-alone mode of travel to get to work: 43% of CB members primarily used public transit to get to work, 29% primarily biked to work, and 12% commuted by walking. Only 11% primarily drove alone to work. Bike commute use was particularly high for members who lived close to work; among CB members who traveled less than five miles to work, 39% primarily rode a bicycle.

**About three in ten employed respondents started or increased use of biking for their trip to work since joining Capital Bikeshare** – Thirteen percent started or increased use of bicycle as their primary mode, the mode they used most often for commuting. Another 19% started using bike as a secondary mode, defined as a mode they used one or two days per week or as a way to access their primary mode. As a result of this increased use of bike, the share of respondents who primarily biked to work increased from 9% of employed respondents to 29%.

**Access to bicycle support services appeared to influence use of bicycle for work travel** – Bikeshare survey respondents were twice as likely to report that their employers offered bike racks, showers, personal lockers, and other bicycle-support services (56%) as were all commuters region-wide (27%). They also were more likely to have bicycle services than were other commuters in the jurisdictions where they worked. Respondents who had access to bicycle-support services biked to work at a higher rate than did respondents who did not have access to these services; 35% of respondents who said bicycle services were available bicycled to work, compared with 23% of those who did not have bicycle services.

## **Satisfaction with Capital Bikeshare**

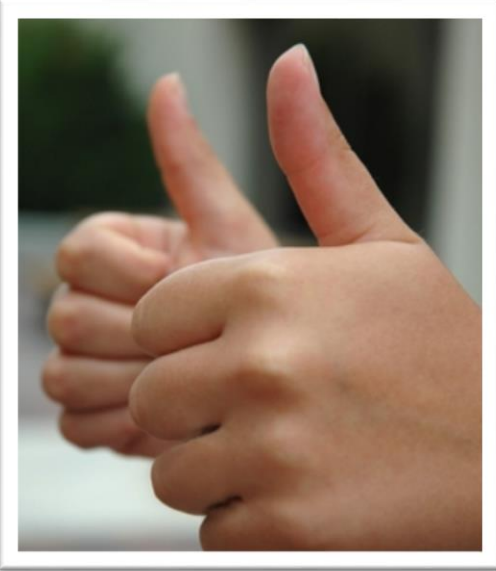
**Respondents gave generally high marks to bikeshare features** – At least six in ten gave ratings of 4 or 5 (Excellent) to safety of stations, Capital Bikeshare website, call center, mechanical repair of bikes, and the map at Capital Bikeshare stations. Respondents were least satisfied with the availability of bikes at docks and the availability of open docks when they were returning bikes; these features were rated as a 4 or 5 by only 39% and 38% of respondents, respectively.

**About two-thirds of respondents reported some problem with using Capital Bikeshare services** – Thirty-five percent had a mechanical issue with the bike, 34% said they had an issue with the bike dock, and 28% encountered issues accessing a bike with the membership key.



**Respondents expressed substantial interest in a card that could be used to access both Capital Bikeshare and public transit**

Ninety-one percent of respondents said they would be somewhat interested (31%) or very interested (60%) in a Capital Bikeshare fob or SmarTrip card that they could use to access both Capital Bikeshare and public transit service. Only 6% said they were not interested in this service. Members were less interested in a no annual fee, pay-per-ride membership option; only 32% were either somewhat interested (25%) or very interested (7%) in this option. But an additional 28% said their interest would depend on the cost per ride.

**CB members wanted both more bikes at existing locations and expansion of Capital Bikeshare to new destinations**

The most often noted expansion need was for more docks at existing stations; 54% of respondents selected this option for greater access to bikes in popular bikeshare pick-up and drop-off locations. The second highest priority was for new stations in residential neighborhoods (44%), perhaps indicating a desire for greater access to bikeshare for short trips within or from a home neighborhood. A similar percentage (43%) indicated a need for expansion within the existing service area (greater infill or density of stations and 32% of respondents said they wanted expansion to areas that bikeshare doesn't serve now (greater coverage).

## TABLE OF CONTENTS

<b>SECTION 1 – INTRODUCTION</b>	<b>1</b>
OVERVIEW AND SURVEY OBJECTIVES	
SURVEY METHODOLOGY SUMMARY	
SURVEY ANALYSIS	
<b>SECTION 2 – SURVEY RESULTS</b>	<b>3</b>
DEMOGRAPHIC CHARACTERISTICS	3
PARTICIPATION AND PROGRAM MEMBERSHIP CHARACTERISTICS	8
TYPICAL BIKESHARE USE	14
MOST RECENT BIKESHARE USE	25
USE OF CAPITAL BIKESHARE TO “INDUCE” TRIPS	31
CAPITAL BIKESHARE ENCOURAGING PATRONAGE OF BIKESHARE-ACCESSIBLE ESTABLISHMENTS	35
CHANGES IN USE OF BIKING AND NON-BIKING MODES SINCE JOINING CAPITAL BIKESHARE	37
CHANGES IN VEHICLE OWNERSHIP AND DRIVING MILES SINCE JOINING CAPITAL BIKESHARE	42
WORK TRAVEL OF BIKESHARE USERS AND CHANGES SINCE JOINING CAPITAL BIKESHARE	49
SATISFACTION WITH BIKESHARE	64
<b>APPENDIX A – SURVEY QUESTIONNAIRE</b>	<b>76</b>

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## SECTION 1 INTRODUCTION

### Overview and Survey Objectives

This report presents the results of the November 2014 Capital Bikeshare Customer Use and Satisfaction Survey conducted for the Capital Bikeshare program (Capital Bikeshare), a program jointly owned and sponsored by the District of Columbia, Arlington County, VA, the City of Alexandria, VA, and Montgomery County, MD. The service, which is operated by Motivate International, Inc., offers short-term use of more than 2,500 bicycles to registered members and day-pass users at nearly 350 stations in the District of Columbia, Arlington County, the City of Alexandria, and Montgomery County.

Users register for an annual or 30-day membership and receive a bikeshare key that allows them to unlock a bike at any station. Use of a bike is free for the first 30 minutes of any trip. Trips lasting longer than 30 minutes incur trip fees that increase as the length of the trip increases. This pricing system encourages the use of bikes for short trips. Users can return the bike to the same station or to any other station in the network, facilitating both return and one-way trips.

Several governmental and community organizations in the Washington Metropolitan region, including the District of Columbia Department of Transportation, Arlington County Commuter Services, goDCgo, BikeArlington, the City of Alexandria, Local Motion, the Virginia Department of Rail and Public Transportation, and the Federal Highways Administration, sponsor or support Capital Bikeshare. These entities were interested in learning more of bikeshare users' experience with the program and exploring Capital Bikeshare's impact on users' travel patterns. The survey was conducted for the following primary purposes, to examine:

- Demographic characteristics of Capital Bikeshare users
- Characteristics of Capital Bikeshare trips
- Travel changes made in response to Capital Bikeshare availability
- Users' satisfaction with Capital Bikeshare features

### Survey Methodology Summary

#### Sample Selection

On October 23, 2014 Capital Bikeshare staff sent an email to the approximately 27,600 annual/30-day members. The email informed them of the online survey and provided the link to the survey website. The email indicated that Capital Bikeshare would enter members who completed the survey entry into a drawing for one of five annual memberships. To increase the response rate further, Capital Bikeshare sent a reminder in the monthly e-newsletter to all members. During the approximately one-month period that the survey website was active, 4,314 members completed the survey, for a total response rate of 16%.

#### Questionnaire Development

The survey questionnaire was developed jointly by Capital Bikeshare staff and the consultant. A copy of the final questionnaire is presented in Appendix A. The questionnaire, which was designed for online self-administration, collected data on the following major topics:

- Capital Bikeshare participation background and motivation for registering
- Capital Bikeshare use patterns
- Details of most recent Capital Bikeshare trip
- Trips made by Capital Bikeshare that would not have been made without the service
- Role of Capital Bikeshare in influencing use of bike and other types of transportation
- Changes in vehicle ownership and driving miles since joining Capital Bikeshare

- Work travel patterns and changes in work travel pattern changes since joining Capital Bikeshare
- Ratings for quality of Capital Bikeshare features
- Issues encountered while using Capital Bikeshare bikes and stations
- Barriers to bicycling in the Washington region
- Suggestions for Capital Bikeshare expansion and other improvements
- Demographics

## **Survey Analysis**

Section 2 presents key results of the survey. The findings present the percentages of respondents who gave each response. Figures and tables also show the base for the percentages, the number of respondents who actually answered the question, presented as (n=\_\_\_).

The total number of completed survey interviews (4,314) was substantial enough that it was possible to examine results for various sub-groups of the total respondent population. Several respondent characteristics, including age, sex, home location, year in which the respondent joined Capital Bikeshare, frequency of Capital Bikeshare use, and other characteristics, were found to be important in this analysis.

When comparable data were available, results also are presented from the State of the Commute survey conducted by the Commuter Connections program of the Metropolitan Washington Council of Governments in 2013 (2013 SOC). Although the SOC survey interviewed only employed residents of the Washington metropolitan region, it provides a reasonable dataset for demographic comparisons because 96% of the Capital Bikeshare survey respondents said they were employed.

## SECTION 2 SURVEY RESULTS

This section presents an overview of the survey findings. The survey collected data in several primary topic areas. Results for these topics are presented below:

- Demographic characteristics
- Capital Bikeshare participation and membership characteristics
- Typical Capital Bikeshare use
- Most recent Capital Bikeshare trip
- Trips made by Capital Bikeshare that would not have been made without the service
- Role of Capital Bikeshare in influencing use of bike and other types of transportation
- Vehicle ownership and driving miles
- Work travel patterns and travel changes
- User satisfaction ratings and service issues

### Demographic Characteristics

The demographic characteristics of respondents are presented below. When data were available, results also are presented from the State of the Commute survey conducted by the Metropolitan Washington Council of Government's Commuter Connection program in 2013 (2013 SOC).

In general, bikeshare users did not mirror the adult population of the Washington metropolitan region. More than nine in ten bikeshare survey respondents were employed, while the U.S. Census reports that only about seven in ten Washington metropolitan region adults are employed. But bikeshare survey respondents also differed from the general employed population. Compared with all commuters in the region, they were, on average,

- Considerably younger
- More likely to be male
- More likely to be Caucasian
- Slightly less affluent than the regional employee population
- Much more likely to live and work in the urban core of the region – Washington DC, Arlington County, VA, or Alexandria, VA

### Employment / Student Status

Nearly all (96%) respondents said they were employed; 91% were employed full-time and 5% were employed part-time. The remaining 4% said they were not currently employed. The survey also asked respondents if they were a full-time or part-time student. One in ten respondents said they were students, with 5% reporting full-time student status and 6% reporting part-time student status.

### Home and Work Locations

Table 1 presents the distributions of Capital Bikeshare survey respondents by their home and work jurisdictions. In the November 2014 survey, three-quarters of respondents said they lived in the District of Columbia. Arlington County, VA was home to about 10% of respondents. Smaller percentages of respondents said they lived in Montgomery County, MD, Fairfax County, VA, Prince George's County, MD, or the City of Alexandria, VA. The distribution of respondents by work jurisdictions was essentially the same as for home location.

**Table 1**  
**Home and Work Locations**  
**2011, 2012, and 2014 Capital Bikeshare Surveys**

State/County	2011 Survey	2012 Survey	2014 Survey
<b>Home Location</b>	(n = 5,159)	(n = 5,367)	(n = 3,600)
District of Columbia	83%	78%	<b>75%</b>
Arlington County (VA)	7%	11%	<b>10%</b>
Montgomery County (MD)	3%	4%	<b>6%</b>
Fairfax County (VA)	2%	2%	<b>3%</b>
Alexandria City (VA)	1%	2%	<b>3%</b>
Prince George's County (MD)	1%	1%	<b>1%</b>
Other *	3%	2%	<b>2%</b>
<b>Work Location</b>	(n = 4,931)	(n = 4,821)	(n = 3,395)
District of Columbia	80%	77%	<b>76%</b>
Arlington County (VA)	6%	10%	<b>10%</b>
Montgomery County (MD)	7%	5%	<b>6%</b>
Fairfax County (VA)	3%	3%	<b>3%</b>
Prince George's County (MD)	<1%	2%	<b>2%</b>
Alexandria City (VA)	2%	2%	<b>2%</b>
Other *	1%	1%	<b>1%</b>

\* Each response in the "Other" category was mentioned by less than one percent of respondents.

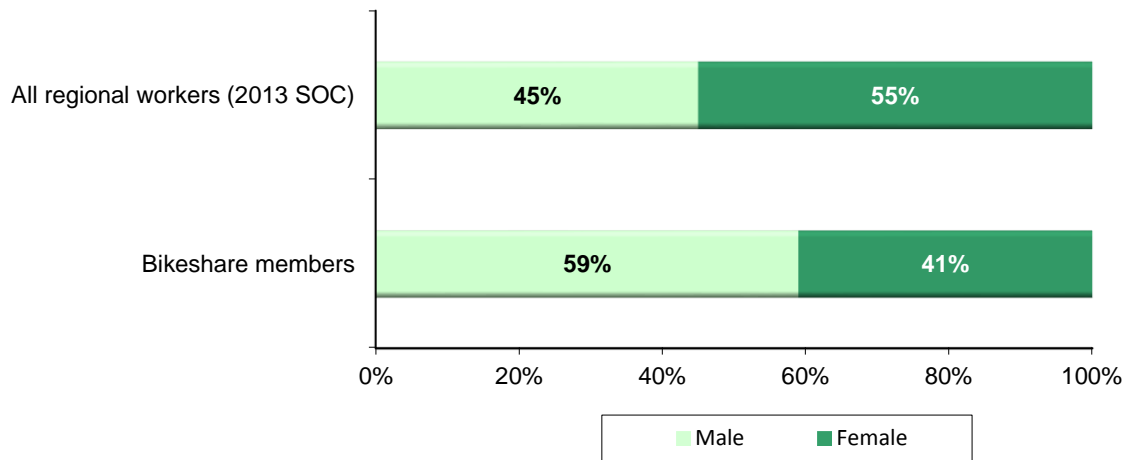
The distribution also is shown for the November 2012 and November 2011 Capital Bikeshare surveys. The share of respondents who lived in the District of Columbia fell slightly between 2012 and 2014, reflecting the growth in bikeshare stations and bicycles in jurisdictions outside the District during the past two years. But the drop in the District was distributed among the other jurisdictions; no single other jurisdiction reported a statistically significant increase.

### **Sex**

Nearly six in ten (59%) bikeshare survey respondents were male; 41% were female (Figure 1). This was the opposite of the 2013 SOC distribution, in which 55% of employed residents were female.

**Figure 1**  
**Respondent Sex Distribution – Bikeshare Members and All Regional Employees**

(Bikeshare n = 4,041, 2013 SOC n = 6,334)

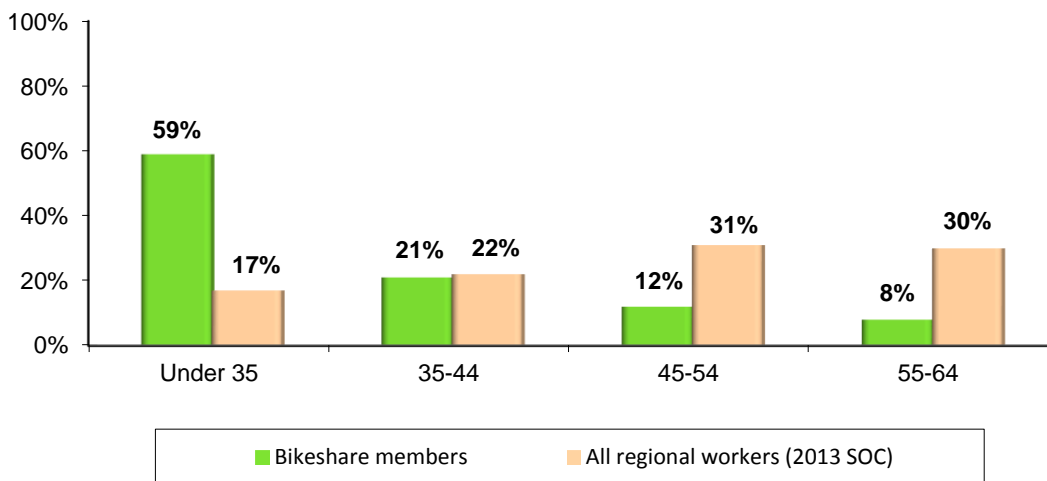


**Age**

Capital Bikeshare survey respondents were considerably younger than were all regional employees, as measured through the 2013 SOC survey (Figure 2). Six in ten (63%) bikeshare survey respondents were under 35 years old and nearly one in ten (8%) were under 25 years of age. By comparison, only 17% of the regional employee population was under 35 years of age.

**Figure 2**  
**Respondent Age Distribution – Bikeshare Members and All Regional Employees**

(2014 Bikeshare n = 4,005, 2013 SOC n = 6,334)





Age distributions also were examined for the two jurisdictions that represented the dominant share of bikeshare members, District of Columbia and Arlington, VA. The SOC survey found that 16% of all commuters who lived in Arlington and 19% of District resident commuters were younger than 35 years of age. These percentages were not statistically different from the 17% of commuters region-wide in this age group.

But the percentage of bikeshare members who were young was dramatically higher in both of these jurisdictions when compared with the total SOC respondents who lived in these two jurisdictions; 52% of Arlington bikeshare members and 63% of Washington bikeshare members were under 35 years old. Thus, with respect to age, bikeshare members were more like each other, regardless of their home area, than they were like other commuters in their home jurisdictions.

### **Ethnic Background**

Caucasians represented, by far, the largest ethnic group of November 2014 bikeshare survey respondents; accounting for 84% of respondents. Asian, Hispanic/Latino, and African-American respondents accounted for about 5%, 5%, and 3% of respondents, respectively (Table 2). The distribution was very similar to that observed in the November 2012 survey, in which 80% of respondents were White/Caucasian.

The table also shows the ethnic background distribution of all regional employees (2013 SOC). Bikeshare members were disproportionately Caucasian when compared with the regional employee population; African-Americans and Hispanics were underrepresented, compared with the regional employee population.

**Table 2**  
**Ethnic Background – Bikeshare Members and All Regional Employees**

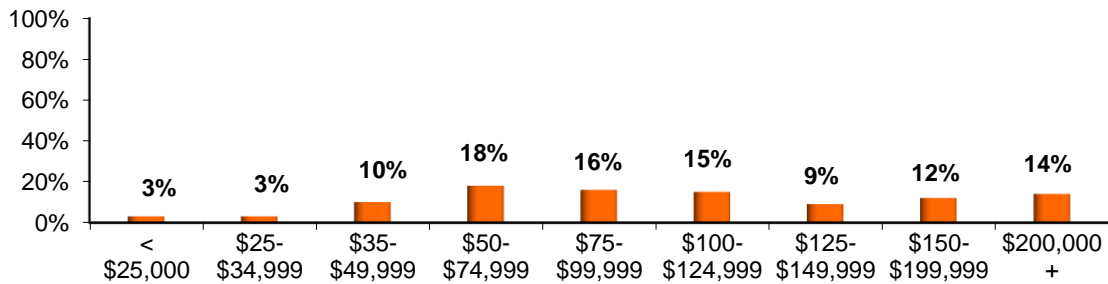
<b>Ethnic Group</b>	<b>2014 Bikeshare Survey (n = 3,743)</b>	<b>2013 SOC Survey (n = 6,334)</b>
White/Caucasian	84%	50%
Asian	5%	10%
Hispanic/Latino	5%	13%
African-American	3%	25%
Other / Mixed	3%	2%

### **Income**

Fewer than two in ten (16%) respondents reported household incomes of less than \$50,000 per year, 34% had incomes of \$50,000 to \$99,999, and 50% had incomes of \$100,000 or more per year (Figure 3). Bikeshare survey respondents had lower household incomes than did employees region-wide, as measured by the 2013 SOC survey. About two-thirds (68%) of all regional workers had incomes of \$100,000 or more, compared with 50% of bikeshare members.

**Figure 3**  
**Annual Household Income – Bikeshare Members**

(n = 3,506)



**Changing Member Profile** – It is reasonable to expect that the people who were attracted to bikeshare when it was new might be different in various respects from those who joined at a later time. This idea was tested for the Capital Bikeshare survey respondents by comparing the demographic profiles for respondents in the 2014 survey with the profiles of respondents in the 2012 and 2011 CB surveys.

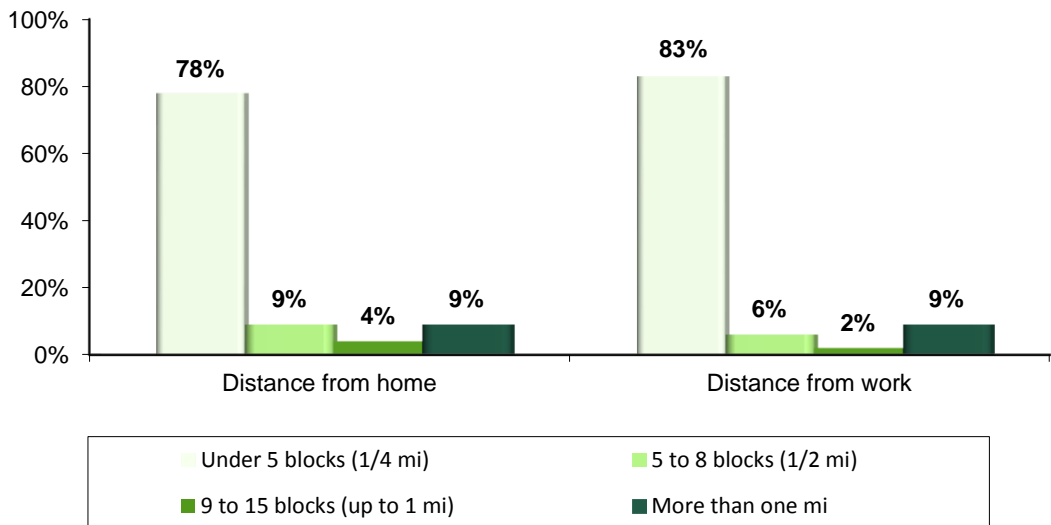
The conclusion from this analysis is that the profile of a bikeshare member appears to be changing in several demographic characteristics to become more dominantly male, White, and affluent, but less young and more diverse in home location:

- **Sex** - Of the members who participated in the 2011 CB survey, 55% were male and 45% were female. In the 2012 survey, 57% of respondents were male and 43% were female. This trend continued in 2014, when males comprised 59% of respondents.
- **Ethnicity** – In 2011, respondents who reported being of Caucasian race/ethnicity were a significant majority, comprising 81% of total respondents. Since then, the share of respondents who were Caucasian increased; in 2014, 84% of respondents reported being Caucasian.
- **Household Income** – In the 2011 CB survey, 39% of respondents reported a household income of \$100,000 or more per year. In the 2012 survey, respondents with incomes of \$100,000 or more comprised a larger group, 45% of the total. Incomes were higher still in the 2014, with 50% reporting an income of \$100,000 or more. Even accounting for some wage inflation, this seems to suggest the program is attracting and/or retaining higher income respondents.
- **Age** – In the 2011 survey, respondents who were under 35 years old accounted for 66% of the total respondents. But the share of young respondents has declined since this first CB survey was conducted. In 2012, 63% of respondents were younger than 35. And in the 2014 survey, the share of young respondents was 59%. The share of respondents who were between 35 and 44 did not change over the three-year period, indicating that the growth has been among members who were 45 years or older.
- **Home Location** – In the 2011 CB survey, 83% of respondents lived in the District of Columbia; the District's share of respondents has declined since then, to 78% in 2012 and 75% in 2014.

### **Distance to Bikeshare Station**

Survey respondents generally reported excellent access to Capital Bikeshare stations (Figure 4). More than three-quarters of respondents said they lived within ¼ mile of a bikeshare station and 87% lived within ½ mile. They reported similar access where they work; 83% of employed respondents worked within ¼ mile of a bikeshare station and 89% said the closest bikeshare station was within ½ mile of their work location.

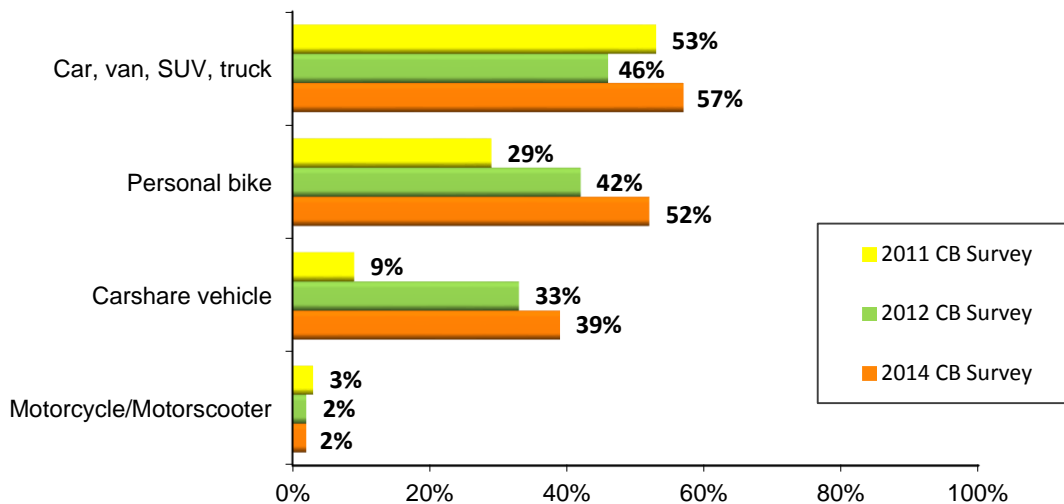
**Figure 4**  
**Distance from Home and Work to Nearest Bikeshare Stations**  
 (Distance from home n = 4,052, Distance from work n = 3,919)



**Availability of Vehicles and Other Personal Transportation Options**

The survey asked respondents if they had access to any of four types of personal transportation on a regular basis for their travel: car/van/SUV/truck; personal bike, carshare vehicle, or motorcycle/motor-scooter/motorbike (Figure 5).

**Figure 5**  
**Vehicles and Other Personal Transportation Options Regularly Available for Travel**  
**2011 2012, and 2014 CB Surveys**  
 (2011 n = 5,464, 2012 n = 3,731; 2014 n = 4,314)



In the 2014 survey, 57% of respondents said they had regular access to a personal vehicle – car, van, SUV, or truck. This percentage was well below the rate of vehicle availability in the Washington Metropolitan region. According to the 2008 Household Travel Survey conducted by Metropolitan Washington Council of Governments, 94% of households in the region had at least one vehicle and 84% of household had a vehicle for each driver in the household. But bikeshare members' vehicle availability rate was similar to the rate for the District of Columbia, where a large majority of bikeshare users lived. The MWCOG Household Travel Survey found that 52% of households in the District of Columbia had a vehicle for each driver in the household.

More than half (52%) of bikeshare survey respondents said they had access to a personal bike. Four in ten (39%) respondents said they had access to a carshare vehicle, that is, they were members of a carshare program, which offers short-term rental of vehicles to registered members.

As is evident from Figure 5, the availability of several transportation options has changed over the three years since the November 2011 bikeshare survey was conducted. Carshare access showed a dramatic increase over the period; 52% of respondents reported this option in 2014, compared with 33% in 2012 and just 9% of respondents in 2011. The percentage of respondents who had access to a personal bicycle also increased, from 29% in 2011 to 42% in 2012 and 52% in 2014. The percentage of respondents who had access to a personal auto/vehicle dropped between 2011 (53%) and 2012 (46%), but the 2014 survey found that 57% had access to a personal vehicle, a percentage that was essentially the same as in 2011. Thus, this does not appear to be an ongoing trend.

Vehicle Availability by Demographic Characteristic – Because it was expected that Capital Bikeshare membership would be more attractive and influential to respondents who had fewer travel options than to those who had many options, the analysis examined differences in availability of personal vehicles and personal bicycles by various demographic characteristics. These results are presented in Table 3.

Availability was not uniformly distributed across all respondents. For example, Arlington County residents were much more likely to have a personal vehicle than were residents of the District of Columbia, but they were equally likely to have a personal bike. Male respondents were slightly more likely than were females to have access both to a personal bicycle and a personal vehicle. Respondents who were White were more likely to have a personal vehicle than were Non-white respondents, but these two groups of respondents were equally likely to have access to a personal vehicle.

The most striking differences were related to respondents' age and income. Among respondents who were under 25 years of age, only four in ten (38%) had a personal vehicle available for regular travel, compared with 57% of those who were 25 to 34 years of age and about three-quarters of respondents who were 35 years of age or older.

Availability of a personal bicycle was similarly tied to respondents' age; about four in ten (43%) respondents who were under 25 years old said they had a personal bicycle, compared with 53% who were 25 to 34 years of age and about two-thirds who were 35 years of age or older.

A similar pattern was noted by respondents' annual household income, with vehicle availability increasing as income increased. Vehicle availability ranged from a low of 39% for respondents whose incomes were under \$50,000 to a high of 80% among respondents with incomes of \$150,000 or more. Availability of a personal bicycle showed a less dramatic but similar pattern; only about half of respondents with incomes under \$100,000 had a personal bicycle available, compared with about two-thirds of respondent with higher incomes.

**Table 3**  
**Personal Vehicle and Bicycle Availability by Respondents' Demographic Characteristics**

Respondent Characteristic	Percentage with Personal Vehicle Available	Percentage with Personal Bicycle Available
<b>Home location</b>		
- Arlington County (n = 333)	<b>85%</b>	58%
- District of Columbia (n = 2,332)	57%	58%
<b>Sex</b>		
- Male (n = 2,071)	<b>67%</b>	<b>62%</b>
- Female (n = 1,384)	62%	56%
<b>Race / Ethnicity</b>		
- Non-white (n = 472)	61%	53%
- White (n = 2,779)	65%	<b>60%</b>
<b>Age</b>		
- Under 25 years (n = 190)	<b>38%</b>	<b>43%</b>
- 25 – 34 years (n = 1,755)	<b>57%</b>	<b>53%</b>
- 35 – 44 years (n = 770)	<b>73%</b>	<b>64%</b>
- 45 – 54 years (n = 462)	<b>80%</b>	<b>75%</b>
- 55 and older (n = 307)	81%	72%
<b>Income</b>		
- Under \$50,000 (n = 379)	39%	48%
- \$50,000 - \$74,999 (n = 523)	<b>50%</b>	54%
- \$75,000 - \$99,999 (n = 494)	<b>60%</b>	53%
- \$100,000 - \$149,999 (n = 793)	<b>72%</b>	<b>63%</b>
- \$150,000 or more (n = 879)	<b>80%</b>	66%

(Statistically higher percentages are shaded)

## **Participation and Program Membership Characteristics**

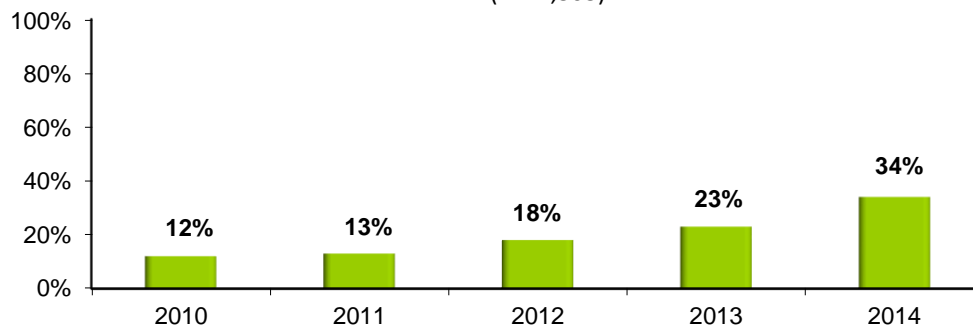
An early section of the survey asked respondents about their bikeshare membership, such as when and why they joined Capital Bikeshare and how they heard about the program. Responses to these questions also were compared for various subgroups of survey respondents, to identify differences that might be useful to guide marketing efforts in the future.

### **When Joined Bikeshare**

Membership growth has been steady since the August 2010 start, but as Figure 6 shows, many members have registered for multiple years. More than four in ten respondents said they joined CB before 2013; 12% joined in 2010, in the early months of the program, 13% first joined in 2011, and 18% joined in 2012. About one quarter (23%) first joined in 2013. The remaining 34% joined in 2014, so had been members for less than one year.

**Figure 6**  
**When Joined Capital Bikeshare**

(n = 4,303)

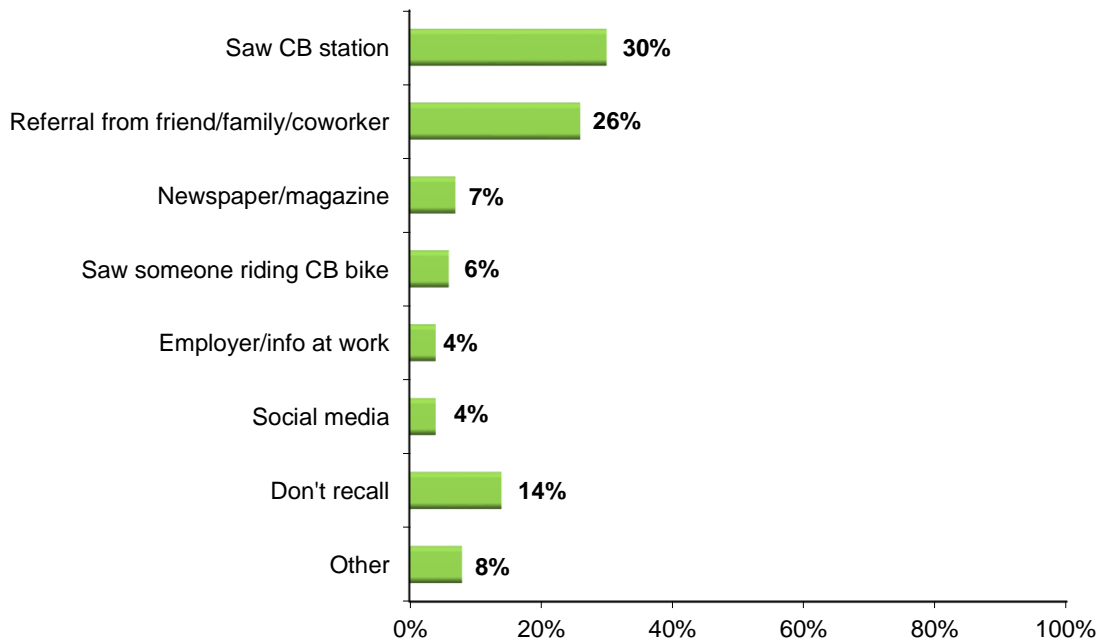


### **How Heard About Bikeshare**

Figure 7 presents the sources of information noted by Capital Bikeshare members for how they “first learned” of the program. The top source was related to seeing Capital Bikeshare in action; 30% of respondents learned of the program by seeing a bikeshare station. An additional 6% saw someone riding a Capital Bikeshare bike. About a quarter (26%) said a friend or family member referred them. Other common sources, each named by at least one in twenty respondents, include newspaper or magazine (7%), employers (4%), and social media (4%). The wide range of sources indicates success with a broad marketing pattern and perhaps the role of multiple program partners.

**Figure 7**  
**How First Learned of Capital Bikeshare**

(n = 4,307)



Change in Sources – Table 4 shows the percentages of respondents who learned about Capital Bikeshare from six sources by the year in which they joined the program: 2010, 2011, 2012, 2013, and 2014. The six sources shown were the only sources for which there were significant differences by year. Green highlighting show sources that increased in importance over time and yellow highlighting shows sources that decreased in importance.

Two sources, "saw bikeshare station" and "referral from friend or family member," demonstrated substantially increased importance. Clearly, this shows how the visibility of the bikes and word-of-mouth referrals have been important marketing tools. Two other sources, "saw someone riding a bikeshare bike" and "employer, information at work," also exhibited increases, but on a more modest scale.

Two sources seem to have declined in importance since the early months of the program. "Social media," named by 10% of respondents who joined during 2010, was noted by a declining percentage of respondents; only 2% of respondent who joined during 2014 cited this source. And newspaper or magazine, which was noted by 13% of respondents who joined in 2014, was named by only 4% of recent members. This suggests that some of the marketing and promotion for the program, which was important during program rollout, has ended or is reaching fewer people.

**Table 4**  
**Bikeshare Information Sources – First Source**

Bikeshare Information Source	When Joined Capital Bikeshare				
	2010 (n = 540)	2011 (n = 551)	2012 (n = 765)	2013 (n = 967)	2014 (n = 1,473)
<b>Increased Importance</b>					
- Saw bikeshare station	11%	24%	32%	34%	35%
- Referral from friend/family	11%	22%	26%	29%	32%
- Saw someone on bikeshare bike	1%	4%	5%	6%	8%
- Employer, information at work	2%	2%	5%	4%	5%
<b>Decreased Importance</b>					
- Social media	10%	7%	3%	3%	2%
- Newspaper or magazine	13%	9%	7%	6%	4%

Sources Noted by Demographic Sub-groups – There also were some differences in how respondents learned of Capital Bikeshare by where they lived or worked and by their sex and age. Some differences also were noted for different income groups, but these largely paralleled the age patterns.

*Sex* – Women and men reported differences in two sources.

- *Referrals* – Women were more likely to mention referral (30%) than were men (24%).
- *Newspaper/Magazine* – Men (9%) were more likely than were women (4%) to mention a media source.

*Home and Work Location*

- *Referrals* – Respondents who lived in the District of Columbia (District) noted referrals (27%) at a higher rate than did respondents who lived in Arlington (19%) or in other areas (22%).
- *Saw Capital Bikeshare station* – Arlington residents (34%) and members who lived outside Arlington/outside the District (37%) noted this source more often than did District members (28%).
- *Employer* – Respondents who lived in Arlington and those who lived outside Arlington/outside the District mentioned learning about Capital Bikeshare from an employer at a higher rate (Arlington – 9%, Outside Arlington/DC – 9%) than did District residents (3%). Respondents who worked in Arlington were particularly likely to have learned of Capital Bikeshare from an employer (9%), while only 4% of respondents who worked in the District and 3% of respondents who worked in other areas mentioned this source.

*Age* – Two sources showed distinct trends as respondents' ages increased:

- *Referrals* – Referrals declined substantially with increasing age. Four in ten (40%) respondents who were younger than 25 years old and 31% who were between 25 and 34 mentioned referrals, compared with 22% of respondents who were between 35 and 44, and only 13% of respondents who were 45 or older.
- *Newspaper or Magazine Article* – This source showed an increasing trend with increasing age. Only 4% of respondents under 35 years old mentioned a newspaper or magazine article as a source, compared with 8% of respondents between 35 and 44 years old and 12% of respondents 45 or older.



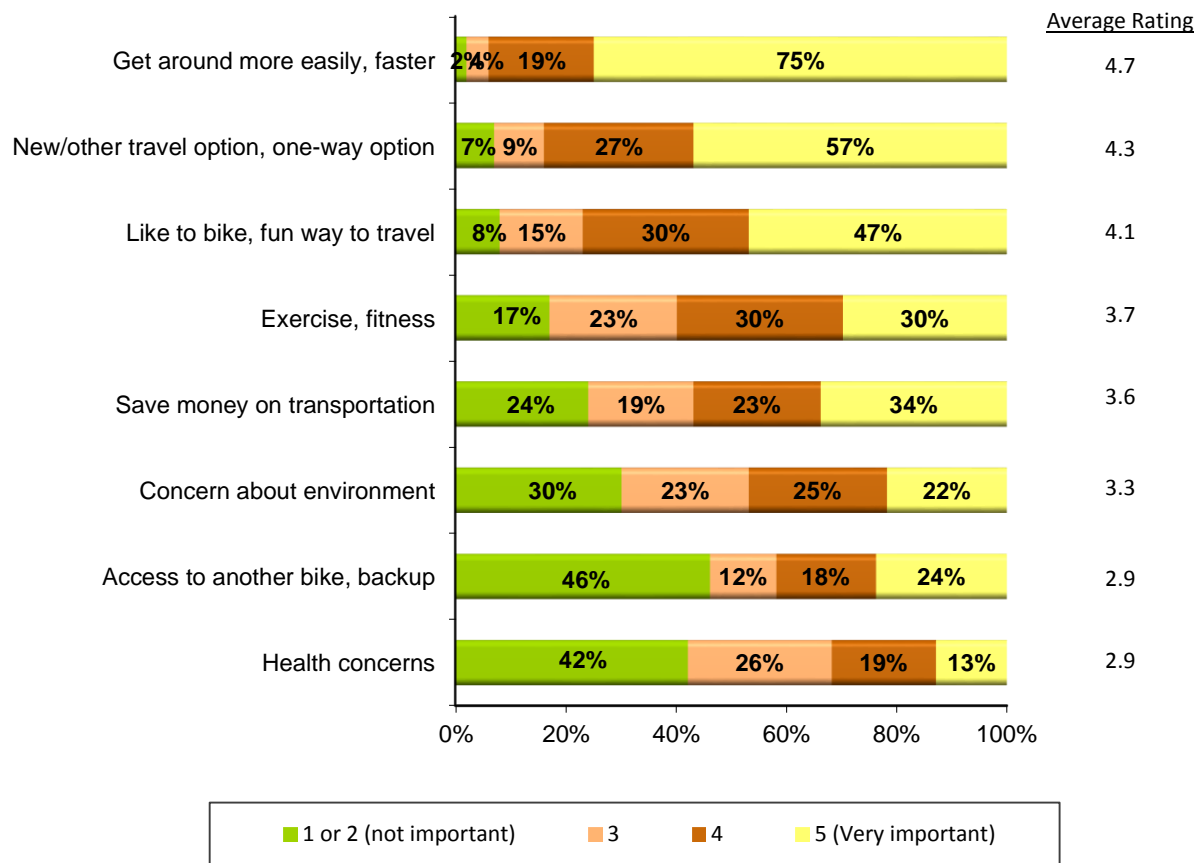
**Reasons for Joining Bikeshare**

To identify what motivated members to join Capital Bikeshare at the time that they did, respondents were asked to rate how important each of eight possible motivations had been to their decision. The results for these questions are presented in Figure 8, showing the percentages of respondents who gave a rating of 1 (not at all important) or 2, a rating of 3, a rating of 4, or a rating of 5 (very important).

The primary reason was clearly access and speed; 94% of respondents rated their ability to get around more easily or more quickly as a 4 or 5 (very important). Another important motivation was having a new travel option or a one-way travel option; 84% of respondents rated this as important. The third top motivation was simply the enjoyment of biking; 77% said liking to bike or thinking that biking was fun way to travel was an important motivation to join bikeshare.

**Figure 8**  
**Importance of Bikeshare Membership Motivations**

(n = 4,207)



Six in ten (60%) said getting exercise/fitness was an important motivator and about half cited a desire to save money on transportation (56%) or environmental concerns (47%) as motivating factors. Having access to another bicycle was important to 42% of respondents and 32% said they were motivated by health concerns to join.

Importance of Motivations by Member Sub-group – Respondents give quite similar responses to why they joined Capital Bikeshare, regardless of their travel and demographic characteristics. But a few notable, statistically significant, differences are described below.

*When Joined Capital Bikeshare* – No single motivation has gained in importance over the past four years, but several reasons seem to have become less prominent:

- *Concern about Environment* – This motivation was cited as important by 54% of respondents who joined in 2010. About 48% of respondents who joined in 2012 or 2013 and only 43% of 2014 new members said the environment was an important reason for joining.
- *Access to another bike / back-up bike* – This also seemed to be a less important motivation for recent members; only 38% of respondents who joined Capital Bikeshare in 2014 gave this an importance rating of 4 or 5, while 44% who joined between 2011 and 2013 and 51% who joined in 2010 gave this rating.

*Frequency of Capital Bikeshare Use* – Respondents who used Capital Bikeshare frequently reported distinctly different motivations for joining than did respondents who rode bikeshare infrequently:

- *Save Money* – The motivation to save money was much more important to frequent riders than to those who rode infrequently. Seven in ten members who made 11 or more trips in the past month and 59% who made between six and ten trips said saving money was important, while only 45% of respondents who made between one and five trips in the past month rated saving money as an important motivation.
- *Get Exercise* – Frequent riders also were more likely to report this as an important motivation, but the threshold was at a higher riding level; 62% of members who made 11 or more CB trips last month rated this motivation as important, compared with 54% who made between three and ten trips and the same percentage who made fewer than three trips.
- *Access to another bike / back-up bike* – This seemed to be more important to infrequent riders; 49% who made between one and five trips and 46% who made between six and ten bikeshare trips in the past month rated this motivation as important, compared with 35% who made 11 or more trips.

#### *Home Location*

- *Save Money* – Six in ten (59%) respondents who lived in the District of Columbia and 53% who lived in Arlington or Alexandria mentioned a desire to save money, while only 45% of respondents who lived in other areas gave this as a reason.
- *Get Around More Easily* – District members also were more likely to join to get around more easily or faster; 96% of District residents mentioned this reason, compared with 89% of Arlington residents and 86% of respondents who lived in other areas. Since most bikeshare trips are quite short, this likely reflects the greater level of traffic congestion in the District, compared with other residential locations.
- *Get Exercise / Health Concerns* – Only 58% of respondents who lived in the urban core jurisdictions of the District, Arlington, and Alexandria mentioned this motivation as important, compared with 70% who lived in other areas. This suggests bikeshare plays less of a role as “basic transportation” for respondents who lived outside the District and Arlington.

*Age* – Several motivations showed pronounced trends as a function of respondents’ ages, with two showing decreasing trends with age and three showing increasing trends:

- *Save Money* – Two-thirds (65%) of respondents who were younger than 35 mentioned a desire to save money on transportation, compared with 47% of respondents who were between 35 and 54, and only 36% of respondents who were 55 or older. This was likely due, in part, to younger respondents’ lower level of income.
- *Get Around More Easily* – Nearly all (96%) respondents under 35 years of age mentioned this as an important motivation, compared with 92% who were between 35 and 54 years old, and 83% who were 55 or

older. This again might be due to other factors however, such as availability of a car and the areas in which they typically traveled.

- *Get Exercise, Like to Bike* – These two motivations were more important to older respondents than to younger respondents. Seven in ten (70%) respondents who were 45 years or older rated getting exercise as important, compared with 57% of younger respondents. And 86% of respondents 45 years and older rated their enjoyment of biking an important motivation, compared with 75% of respondents in younger age groups.
- *Environmental Concerns* – Older respondents also reported greater importance of environmental concerns; 58% of respondents who were 45 years or older rated environmental concerns as important, compared with 49% of respondents who were between 35 and 44 and 43% of respondents who were younger than 35 years old.

#### Sex

- *Get Exercise, Environmental Concerns* – Female respondents were slightly more likely than male respondents to rate two motivations as important: get exercise (64% of women vs 56% of men) and environmental concerns (53% of women vs 44% of men). There were no statistical differences in other motivations.

*Income* – The results showed a distinct downward pattern as respondents' income increased for one motivation – a desire to save money on transportation. Three-quarters (77%) of respondents with incomes of less than \$50,000 said this was an important motivation for joining Capital Bikeshare. Among respondents whose incomes were between \$50,000 and \$74,999, 68% rated saving money as important. The share of respondents who noted this reason dropped still further for the next two income groups; 56% who had an income of between \$75,000 and \$149,999 and 41% of those with incomes of \$150,000 or more said saving money was an important motivation.

*Ethnicity* – Statistically significant differences were noted on two motivations.

- *Save Money* – Non-white respondents mentioned saving money at a higher rate than did White respondents; 63% of Non-whites said this was important, compared with 57% of White respondents.
- *Health Concerns* – This motivation also was more important to Non-white respondents. Four in ten (40%) Non-white respondents rated health concerns as important, compared with 31% of White respondents.
- *Access to another bike / back-up bike* – This seemed to be more important to White respondents; 43% of White respondents rated this as important, compared with 37% of Non-White respondents.

## **Typical Bikeshare Use**

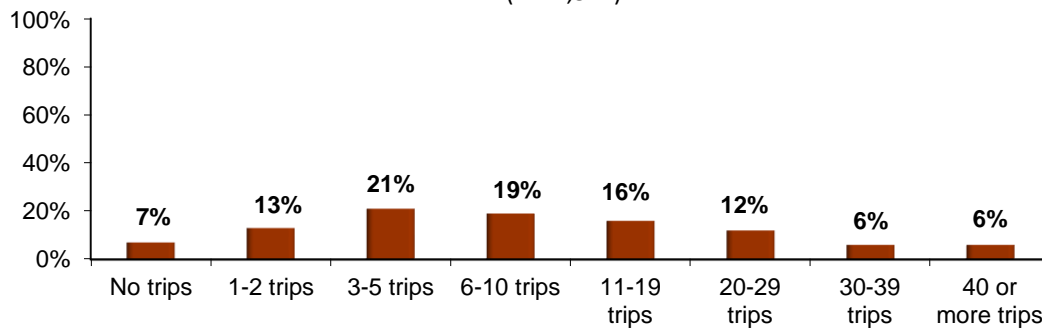
Another section of the questionnaire asked respondents about their frequency of bikeshare use and trip purposes for which they used bikeshare. The survey also asked several follow-up questions to explore the characteristics of respondents' most recent bikeshare trip.

### **Frequency of Bikeshare Use**

Seven percent of respondents said they had not made any bikeshare trips in the past month (Figure 9). About 13% made one or two bikeshare trips, 21% made between three and five trips, and 19% made between six and ten trips. Four in ten respondents were frequent users, with 11 or more trips in the past month. And 24% made at least 20 trips. This use distribution resulted in an average use of about 13 trips per user in the past month.

**Figure 9**  
**Bikeshare Trips Made in Past Month**

(n = 4,312)



The percentage of high frequent users has increased over the past three years. In the first Capital Bikeshare survey in 2011, 26% of respondents said they made 11 or more trips in the past month. In 2012, the percentage of frequent users was 35%. The 40% of frequent use represented continued growth in the average monthly use of bikeshare.

Trip Frequency by Demographic Characteristics – Several demographic characteristics were associated with more frequent bikeshare use (Table 5). Use was more frequent among respondents who lived in the District of Columbia and those who worked in the District than for residents or workers of other locations. This seems a reasonable outcome, considering that the majority of bikes and bike stations are located in the District. Other characteristics associated with higher use included being male, younger than 35 years old, not having access to a personal vehicle, and not having access to a personal bicycle. At least six in ten of the respondents in each of these categories said they had used bikeshare six or more times in the past month.

**Table 5**  
**Bikeshare Trips in Past Month by Respondents’ Home and Work Location**  
Percentage who Made 6 or more Capital Bikeshare Trips in Past Month

Jurisdiction	Percentage
<b>Home jurisdiction</b>	
- District of Columbia (n = 2,691)	62%
- Arlington County, VA (n = 361)	54%
- Montgomery / Prince George’s Co, MD (n = 251)	51%
<b>Work jurisdiction</b>	
- District of Columbia (n = 2,579)	61%
- Arlington County, VA (n = 323)	58%
- Montgomery / Prince George’s Co, MD (n = 255)	49%

(Statistically higher percentages are shaded)

**Table 5 (cont)**  
**Bikeshare Trips in Past Month by Respondents' Demographic Characteristics**  
 Percentage who Made 6 or more Capital Bikeshare Trips in Past Month

<b>Respondent Characteristic</b>	<b>Percentage</b>
<b>Sex</b>	
- Male (n = 2,338)	<b>65%</b>
- Female (n = 1,632)	51%
<b>Age</b>	
- 16 to 24 years old (n = 316)	<b>76%</b>
- 25 to 34 years old (n = 2,041)	<b>61%</b>
- 35 to 44 years old (n = 821)	57%
- 45 to 54 years old (n = 492)	53%
- 55 years and older (n = 333)	45%
<b>Access to a personal vehicle</b>	
- No (n = 2,458)	<b>68%</b>
- Yes (n = 1,854)	52%
<b>Access to a personal bicycle</b>	
- No (n = 2,091)	<b>64%</b>
- Yes (n = 2,221)	54%

(Statistically higher percentages are shaded)

Trip Frequency by When Respondent Joined Capital Bikeshare and the Motivations for Joining – Frequency differences also were noted by when the respondents joined Capital Bikeshare and what motivated them to join. Table 6 presents the results to the first question and Table 7 shows results to the questions on motivation.

*When Joined Capital Bikeshare* – Respondents who joined most recently made more trips in the past month than did respondents who joined earlier; nearly two-thirds (64%) of respondents who registered during 2014 and 59% of respondents who joined in 2013 made six or more bikeshare trips in the past month, compared with between 50% and 56% of respondents who joined earlier.

**Table 6**  
**Bikeshare Trips in Past Month by When Respondent Joined Capital Bikeshare**  
**Percentage who Made 6 or more Capital Bikeshare Trips in Past Month**

<b>When Joined Capital Bikeshare</b>	<b>Percentage</b>
- 2010 (n = 542)	50%
- 2011 (n = 552)	57%
- 2012 (n = 766)	56%
- 2013 (n = 967)	59%
- 2014 (n = 1,474)	<b>64%</b>

(Statistically higher percentages are shaded)

*Motivations for Joining Capital Bikeshare* – In general, respondents who rated each motivation to join Capital Bikeshare as more important used bikeshare more frequently (Table 7). For example, 69% of respondents who gave an importance rating of 4 or 5 to “saving money” made at least six bikeshare trips in the past month, compared with 51% of respondents who rated saving money as a 3 on the importance scale and 43% who rated it as a 1 (not at all important) or a 2.

The pattern was similar for three other motivations. Respondents who gave high ratings for the importance of health concern, getting exercise, and getting around more easily also used Capital Bikeshare at a statistically higher rate.

One motivation showed an unexpected pattern. The motivation of “get access to another bicycle or a back-up bike” showed an opposite pattern; only 54% of respondents who gave this a high importance rating made six or more trips in the past month, compared with 57% who rated it as a 3 and 64% who rated it as a 1 or 2. Presumably, this was because they had a personal bicycle that they used for some trips, so didn’t rely on bikeshare for all their bicycle trips.

For three motivations: like to bike, concern about environment, and access to other form of transportation / one-way trips, there were no statistical differences in bikeshare use. The share of respondents who made six or more bikeshare trips was essentially the same for all respondents, regardless of how important they rated this motivation.

**Table 7**  
**Bikeshare Trips in Past Month by Respondents' Motivations to Join Capital Bikeshare**  
 Percentage who Made 6 or more Capital Bikeshare Trips in Past Month

Motivation to Join	Percentage
<b>Saving money</b>	
- Important (rating of 4 or 5) (n = 2,429)	69%
- Rating of 3 (n = 803)	51%
- Not important (rating of 1 or 2) (n = 1,002)	43%
<b>Health concern</b>	
- Important (rating of 4 or 5) (n = 1,368)	62%
- Rating of 3 (n = 1,072)	58%
- Not important (rating of 1 or 2) (n = 1,750)	57%
<b>Get exercise</b>	
- Important (rating of 4 or 5) (n = 2,545)	61%
- Rating of 3 (n = 969)	60%
- Not important (rating of 1 or 2) (n = 737)	52%
<b>Get around more easily</b>	
- Important (rating of 4 or 5) (n = 3,999)	60%
- Rating of 3 (n = 179)	42%
- Not important (rating of 1 or 2) (n = 95)	33%
<b>Like to bike</b>	
- Important (rating of 4 or 5) (n = 3,281)	60%
- Rating of 3 (n = 629)	57%
- Not important (rating of 1 or 2) (n = 339)	59%
<b>Concern about environment</b>	
- Important (rating of 4 or 5) (n = 1,368)	59%
- Rating of 3 (n = 987)	60%
- Not important (rating of 1 or 2) (n = 1,243)	59%
<b>Access to other form of transportation / one-way trips</b>	
- Important (rating of 4 or 5) (n = 3,523)	59%
- Rating of 3 (n = 374)	61%
- Not important (rating of 1 or 2) (n = 286)	64%
<b>Access to another bike</b>	
- Important (rating of 4 or 5) (n = 1,742)	54%
- Rating of 3 (n = 510)	57%
- Not important (rating of 1 or 2) (n = 1,874)	64%

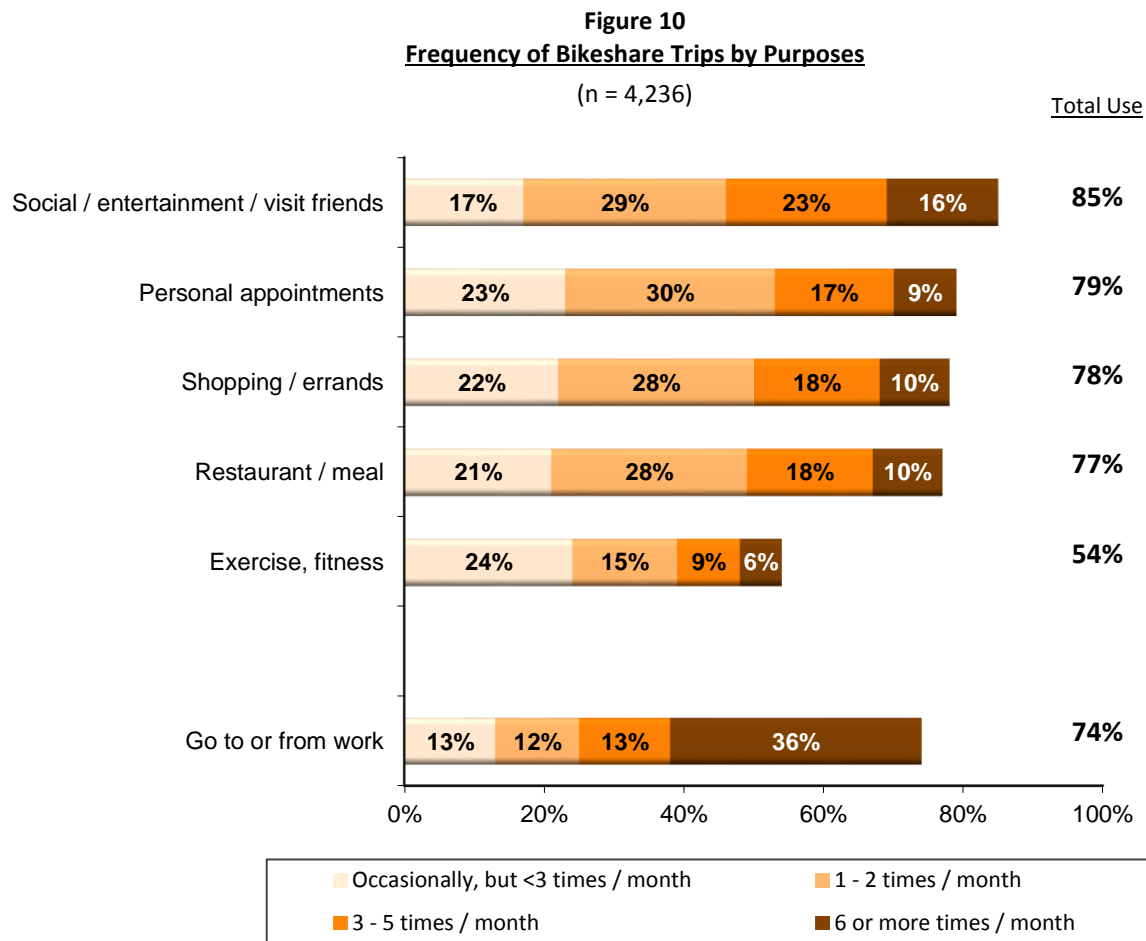
(Statistically higher percentages are shaded)

**Trip Purposes**

Respondents were shown a list of seven trip purposes and asked to indicate how frequently they used Capital Bikeshare for each type of trip, using the following scale from 1 to 5:

- 1 – Never use CB for this trip purpose
- 2 – Occasionally, but less than once per month
- 3 – 1 to 2 times per month
- 4 – 3 to 5 times per month
- 5 – 6 or more time per month for this trip purpose

Figure 10 presents the results for these questions.



**Non-commute Travel** – The five trip purposes shown at the top of Figure 10 are trips made for personal, non-commute purposes. Nearly all (96%) respondents said they used Capital Bikeshare at least occasionally for one of these purposes. The top bikeshare trip purpose was social/entertainment’ 85% of respondents said they at least occasionally rode bikeshare for this purpose and 39% used bikeshare three or more times per month. About eight in ten respondents reported riding for three other non-commute purposes: go to a personal appointment (79%), shop/run errands (78%), and go to a restaurant or other location where they have a meal (77%). About four in ten respondents said they used bikeshare for these trip purposes three or more times per month. About half (54%) used bikeshare for an exercise or recreation trip.

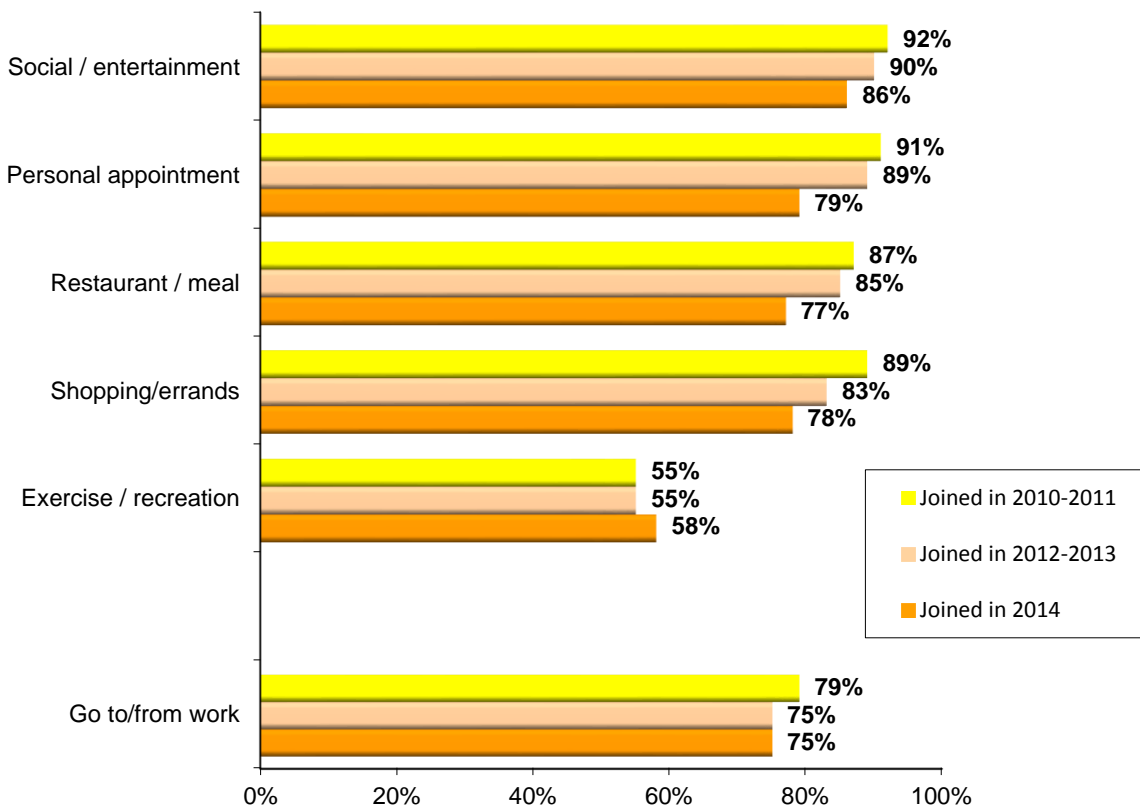


Commuter-related Travel – The last trip purpose shown in Figure 10 was for trips to go to or from work. Nearly three-quarters (74%) of respondents at least occasionally used bikeshare to get to or from work and 49% said they used bikeshare to commute three or more times per month, making it the most common frequent trip purpose. But many of the respondents who reported frequent use of bikeshare for commuting reported transit as their primary commute mode in a later question of the survey. This suggests they might have been using bikeshare to access a bus or train, which they used for the longest part of their trip. For these respondents, bikeshare might be making transit a more feasible option than it otherwise would be.

Nine percent of respondents said they used bikeshare to get to or from school at least occasionally; 6% said they rode bikeshare to school three or more times per month. As noted earlier in the survey, only 11% of all survey respondents were students, thus it appears a large percentage of student members were using Capital Bikeshare for this purpose.

Trip Purposes by When Joined Capital Bikeshare – The analysis examined whether respondents who joined Capital Bikeshare during 2014 used bikeshare for different trip purposes than did respondents who joined earlier. Figure 11 presents the percentages of respondents from three time periods, 2010-2011, 2012-2013, and 2014, who noted that they ever use Capital Bikeshare for the specified trip purpose.

**Figure 11**  
**Bikeshare Trip Purposes – by When Joined Capital Bikeshare**  
 (Joined in 2010-2011 n = 1,094, Joined in 2012-2013 n = 766, Joined in 2014 n = 1,474)

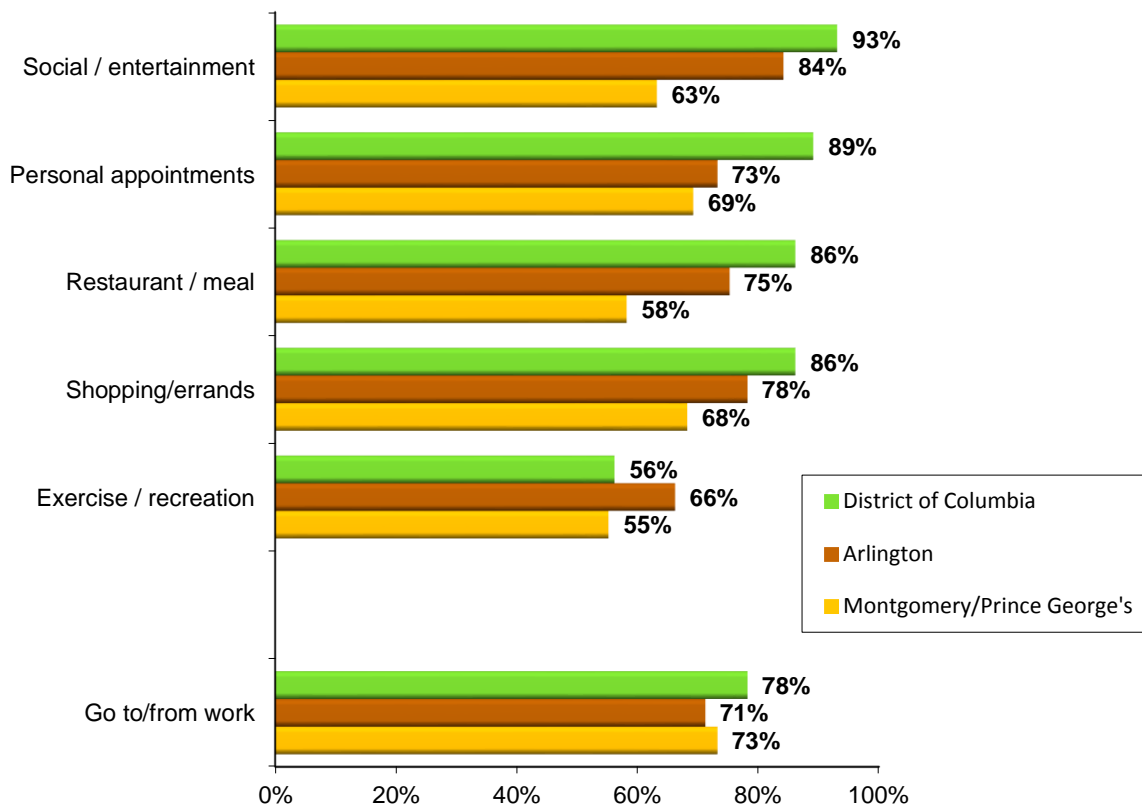


Use for nearly every trip purpose was lower for respondents who joined Capital Bikeshare during 2014 than for respondents who joined in 2012-2013 and lower for 2012-2013 respondents than for respondents who joined in 2010-2011. This was likely due, at least in part, to the greater opportunity long-time members have had to make trips of multiple purposes, compared with respondents who had been in the program for a shorter period of time. However, it also could indicate a greater interest in bicycling overall among these early adopters, a greater need for bikeshare as basic transportation, or other factors. The only exception to the declining pattern was for exercise/recreation trips; approximately the same share of respondents from each of the three time period groups reported using bikeshare for this purpose.

Trip Purposes by Home Location – The analysis next examined bikeshare trip purposes for respondents in the three home jurisdictions for which a sufficient number of survey responses was collected: District of Columbia, Arlington County, VA, and Montgomery/Prince George’s counties, MD (Figure 12).

**Figure 12**  
**Bikeshare Trip Purposes – by Home Jurisdiction**

(District of Columbia n = 2,693, Arlington n = 361, Montgomery/Prince George’s n = 251)



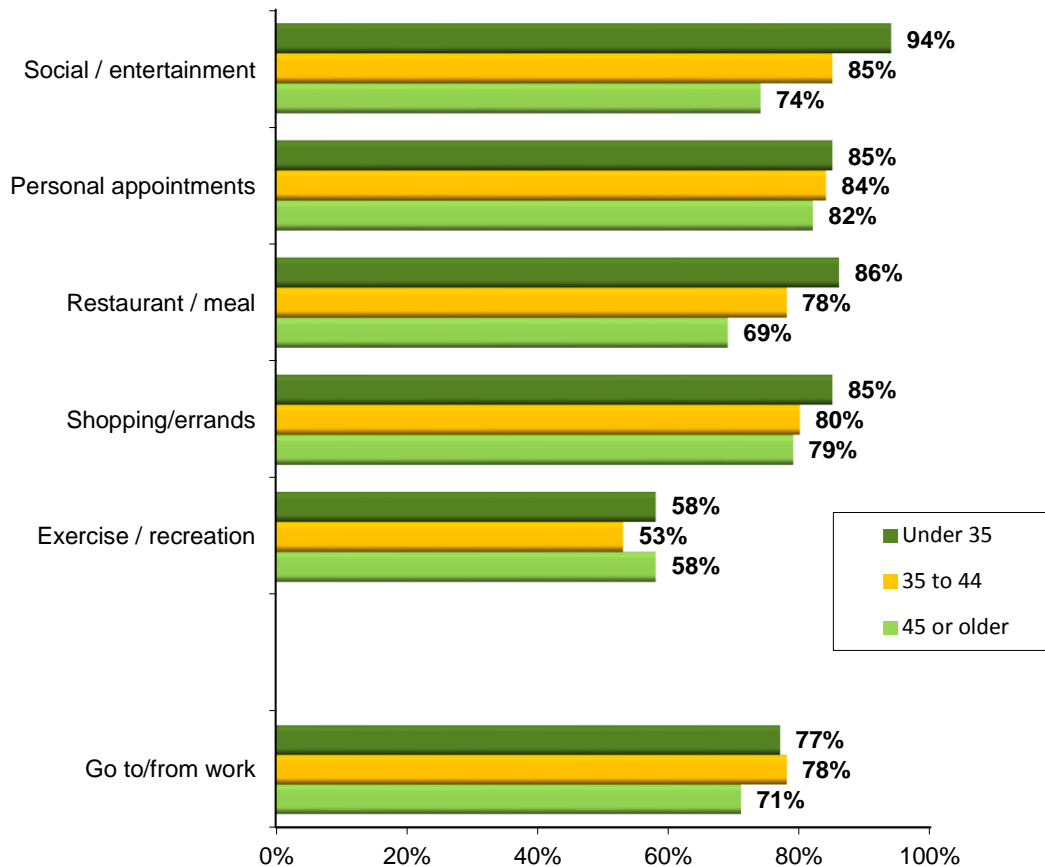
Respondents who lived in the District used bikeshare at a higher rate for nearly all trip purposes than did respondents who lived in the two other jurisdictions. However, since the vast majority of Capital Bikeshare bikes are located in the District, this result likely was related to the greater opportunity that District members had to use bikes to reach a greater number of destinations. One exception to this rule was that respondents who lived in Arlington used bikeshare more often for exercise/recreation trips than did respondents who lived in the District or in Montgomery/Prince George’s counties.

Trip Purposes by Demographic Characteristics – Next, the analysis examined differences in bikeshare trip purpose for respondents in different demographic subgroups. There were no significant differences in trip purpose by gender, but trip patterns did vary by age, race/ethnicity, and income.

- **Age** – In general, younger respondents used Capital Bikeshare for each trip purpose more than did older respondents (Figure 13). This was particularly the case for social/entertainment trips and trips to restaurants/meals. Nearly all (94%) respondents who were under 35 years old had used bikeshare for a social or entertainment trip, compared with 85% of respondents who were between 35 and 44 years old and 74% of those who were 45 years of age or older. And 86% of respondents who were under 35 had used bikeshare to reach a restaurant, compared with only 69% of those who were 45 or older. A similar, although less extreme, pattern was evident for use of bikeshare for errands and shopping trips. The only trip purpose that showed a different pattern by age was exercise/recreation trips. The oldest group of respondents used bikeshare for this trip purpose at the same rate as did the youngest respondents.

**Figure 13**  
**Bikeshare Trip Purposes – by Age**

(Under 35 years old n = 2,358, 35 – 44 years old n = 821, 45 or older n = 830)



- *Race / Ethnicity* – Overall, White and Non-white respondents used bikeshare at about the same rate for each trip purpose. White respondents were slightly more likely to use bikeshare for a trip to a restaurant/meal (White 82%, Non-white 78%), while Non-white respondents reported greater use of bikeshare for exercise/recreation (White 56%, Non-white 61%).
- *Income* – Differences in trip purpose also were minor for respondents of different income groups. About 82% of respondents with incomes of under \$50,000 used bikeshare for a trip to or from work, compared with 75% of respondents with higher incomes. There also was a declining pattern of use for social/entertainment purposes as incomes increased; about 95% of respondents whose incomes were below \$75,000 per year used bikeshare for this type of trip compared with 88% of respondents with higher incomes.

Trip Purposes by Access to Alternative Transportation Option – Finally, the analysis explored bikeshare trip purposes for respondents who had access to a personal vehicle or a personal bicycle, compared with those who did not have these personal transportation options (Table 8).

**Table 8**  
**Bikeshare Trip Purposes – by Access to Personal Vehicle and Personal Bicycle**

Respondent Characteristic	Personal Vehicle Available		Personal Bicycle Available	
	Yes (n = 2,459)	No (n = 1,855)	Yes (n =2,181)	No (n =2,050)
<b>Personal / Non-work Trips</b>				
- Social/entertainment	85%	<b>92%</b>	88%	88%
- Personal appointment	81%	<b>88%</b>	<b>86%</b>	81%
- Go to a restaurant, meal	77%	<b>86%</b>	82%	80%
- Shopping/errands	78%	<b>87%</b>	81%	82%
- Exercise, recreation	55%	<b>60%</b>	50%	<b>64%</b>
<b>Work-related trips</b>				
- Go to/from work	73%	<b>80%</b>	<b>78%</b>	74%

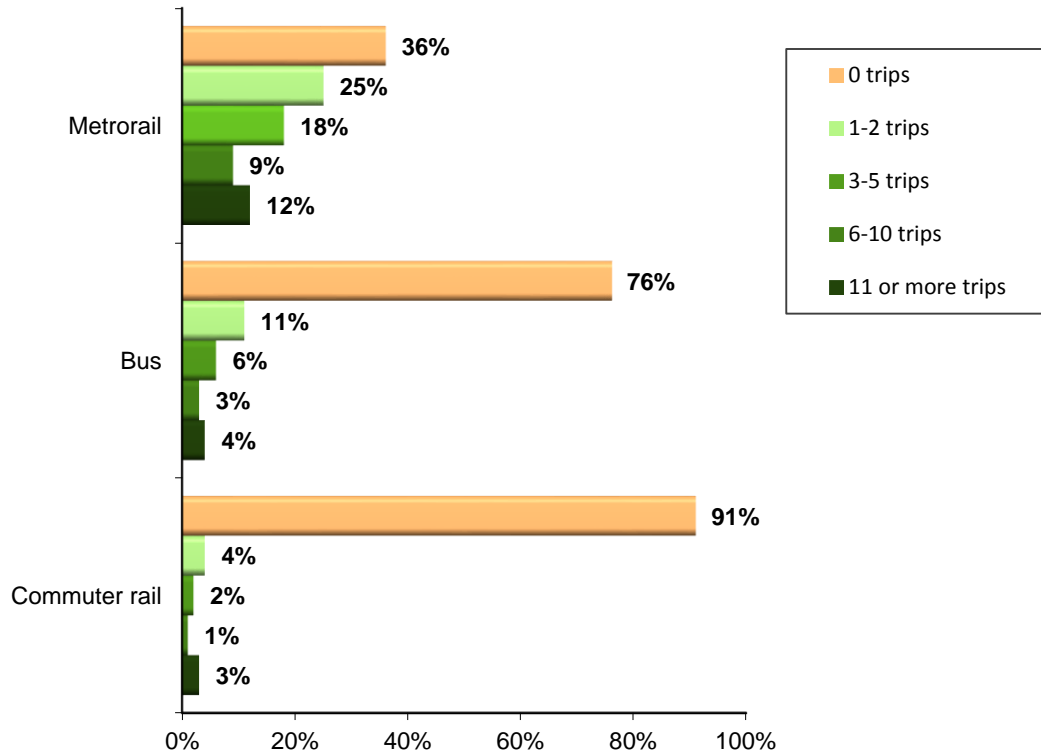
(Statistically higher percentages are shaded)

- *Personal Vehicle* – Respondents who did not have a personal vehicle available used Capital Bikeshare for a wider range of trip purposes than did respondents who had a vehicle available. In general, bikeshare use for each trip purpose was five to eight percentage points higher among respondents without a vehicle.
- *Personal Bicycle* – There was very little difference in bikeshare use by whether or not a respondent had a personal bicycle. Respondents who had a personal bicycle used bikeshare slightly more often for personal errand and commuting trips than did those without a personal bicycle. Bikeshare use for exercise or recreation trips was higher among those who did not have a personal bicycle, but this is reasonable if we assume that many respondents who had a personal bicycle used it primarily for exercise and for trips that did not require them to leave the bicycle unattended.

**Use of Bikeshare to Access Transit**

The preceding section reported on “destination” trips for which respondents used Capital Bikeshare. But another use of bikeshare could be as an access mode to reach public transportation. The survey explored how many of the previous month’s Capital Bikeshare trips started or ended at a Metrorail station, a bus stop, or a commuter rail station (Figure 14).

**Figure 14**  
**Use of Capital Bikeshare to Access Train and Bus**  
 (n = 4,314)



Two-thirds (64%) of respondents said that at least one of the Capital Bikeshare they made last month either started or ended at a Metrorail station. Eighteen percent had used bikeshare three to five times to get to Metrorail and 21% used bikeshare six or more times for this purpose.

About a quarter (24%) of respondents used Capital Bikeshare to access bus in the past month, but only 7% used bikeshare at least six times to reach a bus stop. The lower use of bikeshare as access to bus likely is due to the short distance that most CB members would have to walk to a bus stop. The 2013 SOC survey found that 87% of District of Columbia residents lived within ¼ mile of a bus stop. Bus is similarly accessible for Arlington County residents, with 80% living within ¼ mile of a bus stop.

Use of bikeshare to reach commuter rail was rare; only 9% of respondents either started or ended a trip at a commuter rail station and only 4% reported six or more commuter rail access trips.

*Transit Access by Frequency of CB Use* – Respondents who were more frequent bikeshare users overall also reported more frequent use of bikeshare to access transit.

- Three-quarters (74%) of respondents who made six or more bikeshare trips in the past month used bikeshare to access Metrorail, compared with 59% of respondents who used bikeshare one to five times in the past month.
- Access to bus was similarly more common among frequent CB users; 29% of respondents who made six or more bikeshare trips used bikeshare to access bus, compared with 21% who made one to five bikeshare trips.

*Transit Access by Demographic and Location Differences* – Some differences in use of bikeshare to reach transit also were noted for respondents of different sub-groups, but they were generally slight and only for bus access:

- Bikeshare use to access a bus declined with increasing age and increasing income.
- A higher share of men used bikeshare to access bus (Male – 33%, Female – 28%).
- A higher share of District of Columbia residents (33%) used bikeshare to access bus than did residents of other jurisdictions (28%).

Two cases in which a difference was found for Metrorail access were in respondents' sex and work jurisdiction:

- About 74% of male respondents reported using bikeshare to access Metrorail, compared with 66% of female respondents.
- Respondents who worked outside the District of Columbia used bikeshare more often to access Metrorail than did District workers (work outside of District – 80%, work in District – 69%). This likely was because distances between Metrorail stations are greater outside of the District, so the walking distance to a station would be longer.

## **Most Recent Bikeshare Use**

One purpose of the Capital Bikeshare survey was to examine the characteristics of bikeshare trips. For this purpose, the survey included questions exploring the details of respondents' "most recent Capital Bikeshare trip." It was expected that respondents would be able to recall this last trip in sufficient detail to provide accurate information. Highlights of these results are shown below.

### **Trip Purposes**

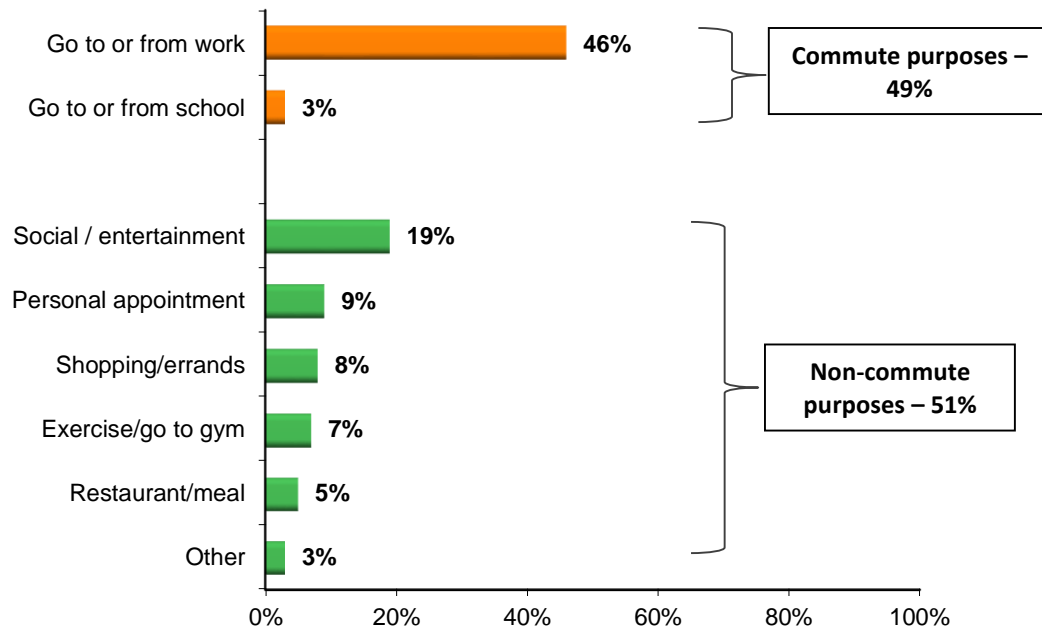
Respondents were first asked the purpose of their most recent bikeshare trip (Figure 15). Respondents' most recent bikeshare trips were divided evenly between commute (49%) and non-commute (51%) purposes. The most common recent trip purpose overall was to go to or from work; 46% of respondents noted this purpose. A small additional share of 3% of respondents said their most recent bikeshare trip was to go to or from school.

The most common recent non-commute purpose trip was for a social/entertainment trip, mentioned by 19% of respondents. Other recent non-commute trips were made for personal appointment trips, shopping/errands, and exercise/gym; these trip purposes were mentioned by 9%, 8%, and 7% of respondents, respectively.

The most common recent non-commute trip purposes: social/entertainment, errand/personal appointments, and shopping trips, were also common trip purposes overall, with at least three in ten respondents saying they frequently used bikeshare for these purposes (Figure 10 shown earlier). Work trips were also common bikeshare trips overall; about half of respondents said they used bikeshare frequently to go to or from work. But work trip comprised a disproportionately high share of most recent trips, suggesting that the non-commute trips, while frequent overall, had more varied purposes.

**Figure 15**  
**Bikeshare Trip Purposes – Most Recent Trip**

(n = 4,292)



**Recent Trip Purposes by Respondent Subgroup Characteristics** – The previous section of the report explored differences in how subgroups of respondents used bikeshare, noting numerous differences by when respondents joined the program, where they lived, and certain demographic characteristics. These differences in bikeshare use were less prominent for the most recent trips than for all trips ever made by bikeshare.

**Recent Trip Purpose by When Joined Bikeshare** – For example, the only statistical difference in the most recent trip purpose by when a respondents joined CB was that long-time members were more likely to have made their most recent trip for a personal appointment purpose than were newer members. Fifteen percent of 2010 registrants made their most recent trip for a personal appointment purpose, compared with 11% of 2011-2012 members and 7% of members who joined in 2013-2014. But the shares of all other trip purposes were similar, regardless of when the respondent joined CB. This supports the conclusion drawn earlier that the greater use of Capital Bikeshare for all trip purposes likely was related to early adopters' longer exposure to trip-making opportunities.

**Recent Trip Purpose by Home Location** – Recent trip purpose were similar for respondents who lived in the District of Columbia and Arlington, reinforcing the conclusion that greater bikeshare use by District residents when all trips were considered was primarily due to District residents' greater opportunity to make trips to a wider range of destinations.

**Recent Trip Purpose by Demographics** – The distribution of most recent trip purposes showed a few statistical differences by respondents' demographics.

- Men were slightly more likely than were women to have made a recent bikeshare trip to/from work (48% of men vs 43% of women).
- White respondents were more likely than were Non-Whites to have made their most recent trip to/from work (White – 47%, Non-white – 41%).

- The percentage of respondents whose last trip was to go to a personal appointment increased with increasing age, from 6% percent of respondents who were under 35 years old to 15% of respondents who were 45 years of age or older.
- Conversely while 23% of respondents who were under 35 years old used bikeshare most recently for social or entertainment purposes, only 13% of respondents 45 years of age or older mentioned this trip purpose.

Timing of Bikeshare Use – Weekend vs Weekday – About eight in ten (79%) of the most recent bikeshare uses fell on weekdays (Monday through Friday). The remaining trips were on weekends; 12% of recent trips were made on Saturday and 9% were made on Sunday. Since the five weekdays comprise only about 71% of the total days of the week, this suggests that bikeshare use was slightly higher on weekdays than weekends. But about 75% of respondents took the survey between Tuesday and Saturday, so frequent bikeshare users likely would have taken their most recent trip on a weekday.

Weekdays, Saturdays, and Sundays all exhibit day-of-week priority patterns (Table 9). As expected, work trips featured prominently on weekdays, comprising 63% of recent weekday trips but only 8% of recent Saturday and 6% of recent Sunday trips. The top trip purpose on Saturday was social/entertainment trips, which accounted for 44% of all Saturday trips. Shopping/errands, restaurant/meal, and personal appointments trips collectively accounted for another 34% of Saturday trips. Social/entertainment trips (37%) and shopping/errand trips (20%) also were common on Sunday. Exercise trips were common on both Saturday and Sunday.

**Table 9**  
**Day of Most Recent Bikeshare Use, by Trip Purposes**

<b>Trip Purpose</b>	<b>Weekday</b> (n = 3,185)	<b>Saturday</b> (n = 466)	<b>Sunday</b> (n = 356)
Non-work trips – all types	37%	<b>92%</b>	<b>94%</b>
Work-related trips – all types	<b>63%</b>	8%	6%
<b><u>Non-work trips</u></b>			
- Social/entertainment	12%	<b>44%</b>	<b>37%</b>
- Personal appointment	9%	<b>8%</b>	<b>9%</b>
- Restaurant, meal	3%	<b>10%</b>	9%
- Shopping/errands	6%	<b>16%</b>	<b>20%</b>
- Exercise, recreation	6%	<b>13%</b>	<b>16%</b>
- Other	1%	<b>1%</b>	<b>3%</b>
<b><u>Work-related trips</u></b>			
- Go to or from work	<b>59%</b>	6%	6%
- Go to or from school	4%	2%	0%

(Statistically higher percentages are shaded)

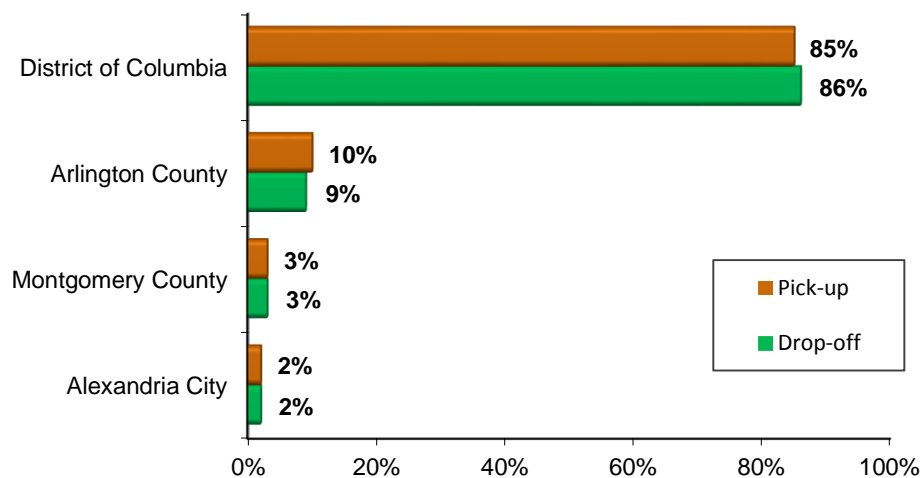


### Recent Trip Locations

Figure 16 shows the primary locations where respondents picked up and dropped off the Capital Bikeshare bikes for their most recent trips. The vast majority of trips originated and/or ended at destinations in the District of Columbia; 85% of most recent trips started at a pick-up location in the District and 86% of bikes were dropped off in the District. Considering that only about two-thirds of the bikeshare stations are located in the District, this reinforces the generally high bikeshare use of District residents. About one in ten (10%) trips began in Arlington and 9% ended in Arlington. Montgomery County was the pick-up location for 3% of trips and the destination end for the same share. Alexandria was the pick-up location for 2% of recent trips and the destination end for 2%.

**Figure 16**  
**Recent Trip Pick-up and Drop-off Locations**

(n = 4,285)



Ninety-four percent of respondents dropped off the bike in the same jurisdiction where they picked it up, but respondents who picked up the bike in Arlington or Montgomery were more likely to return it to a station in another jurisdiction. About one-quarter of bikes picked up in Arlington were dropped off in either the District (24%) or Alexandria (4%). A similar share (27%) of bikes picked up in Montgomery were dropped off elsewhere. One in ten bikes picked up in Alexandria were dropped off in another jurisdiction. Only 21% of the bikes that were picked up in the District were returned to a station outside the District.

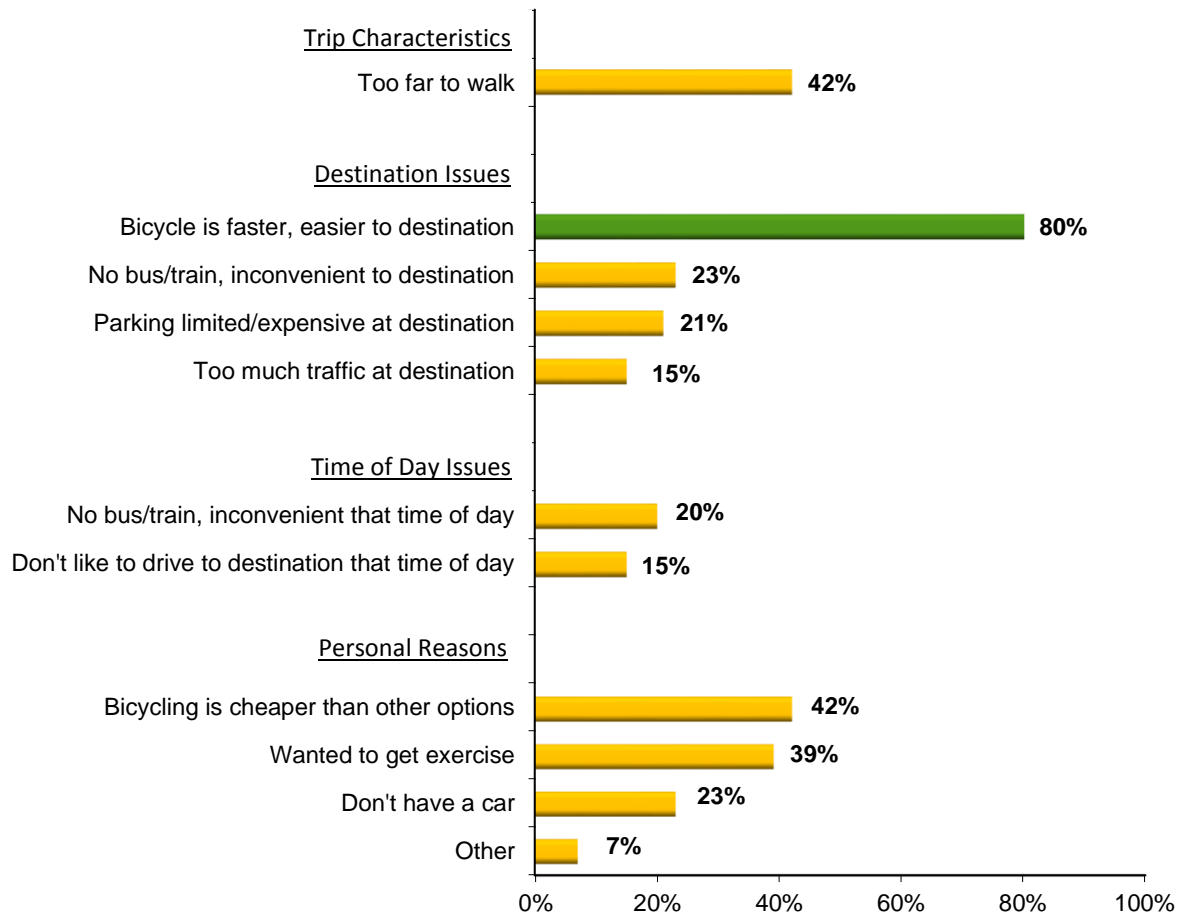
### Reasons for Using Bikeshare for Most Recent Trip

Respondents also were asked why they chose Capital Bikeshare for their most recent trip, instead of another type of transportation. Figure 17 displays these results, divided into four categories: trip characteristics, issues related to the trip destination, issues related to the time of day the trip was made, and other personal reasons.

Overwhelmingly, respondents chose bikeshare because it was a faster or easier way to reach their destination; 80% of respondents mentioned this reason. But a large share (87%) of respondents noted issues related to characteristics of the trip or the destination. More than four in ten (42%) respondents chose bikeshare because it was too far to walk to the location. One-quarter (23%) said public transportation was either not available or inconvenient to reach that destination, 21% said that parking was very limited at that destination, and 15% chose Capital Bikeshare to avoid traffic at the destination.

**Figure 17**  
**Why Respondent Chose Bikeshare for Most Recent Trip**

(n = 4,296)



Respondents also mentioned reasons related to the time of day they were traveling. Twenty percent said transit service didn't operate or that transit was inconvenient at that time of day and 15% mentioned a general dislike of driving to that destination at that time of day. Finally, respondents mentioned reasons related either to personal preferences or personal constraints. More than four in ten (42%) respondents chose bikeshare because it was less expensive than other options, 39% wanted to get exercise, and 23% said they did not have a car.

Respondents of different ages and incomes cited different reasons. Young respondents and respondents with lower incomes were more likely than average to mention reasons related to their lack of transportation options: too far to walk, transit was either unavailable or inconvenient at that time or to that destination, or that they did not have a car. They also were more likely to note that the bicycle was a faster or cheaper option.

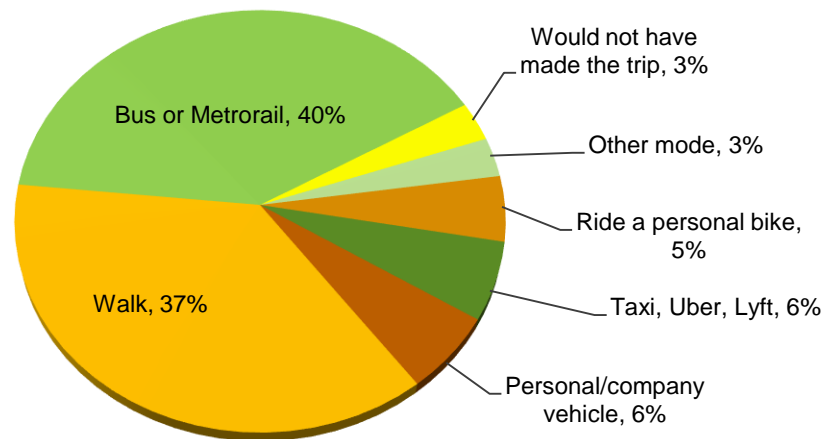
Older respondents, those with higher incomes, and respondents who had a personal vehicle were more likely to mention reasons related to the disadvantages of driving: they didn't like to drive to that destination at that time of day, parking was limited at the destination, or that there was too much traffic around the destination. A higher share of these respondents also cited a desire to get exercise.

### **Travel Options if Bikeshare Not Available**

The final question in this section was how the respondent would have made the most recent trip if Capital Bikeshare had not been available. Three percent of respondents said they would not have made the trip at all without bikeshare. Thus, for a small share of trips, bikeshare broadened the range of trip, destination, or time of day options (Figure 18).

But most respondents said they would have made the trip, using a different type of transportation. Four in ten (40%) would have used public transit (bus or Metrorail) and 37% would have walked to their destination. About one in twenty (6%) would have driven or ridden in a personal or company vehicle, but since more than half of the respondents did not have a personal vehicle regularly available, driving would not have been an easy option for many. Six percent would have used a taxi and another 5% would have ridden a personal bike.

**Figure 18**  
**Travel Options for Most Recent Trip if Bikeshare Not Available**  
 (n = 4,289)



Alternative Type of Transportation by Trip Purpose – The type of transportation respondents would have used if Capital Bikeshare had not been available varied by the trip purpose (Table 10). Overall, 40% of respondents said they would have used a bus or Metrorail if Capital Bikeshare had not been available and transit was a common destination for most trip purposes. But a higher than average proportion, 51%, of respondents whose last bikeshare trip was to go to or from work would have used transit for the trip.

Walking would have been the choice for a disproportionate share of shopping/errand and exercise/recreation trips. But walking also was a common mode across all trip purposes, suggesting respondents made, or could have made, many bikeshare trips in their immediate neighborhood. Taxi would have been the choice for a higher than average share of social/entertainment and personal appointment trips.

**Table 10**  
**Alternative Transportation Options – by Trip Purpose of Most Recent Capital Bikeshare Trip**

Trip Purpose – Most Recent Bikeshare Trip	Type of Transportation				
	Bus or Metrorail	Personal Vehicle	Walk	Taxi	Personal bike
<b>All trip purposes (n = 4,287)</b>	40%	6%	37%	6%	5%
<b>Personal / Non-commute Trips</b>					
- Social / entertainment (n = 543)	36%	8%	31%	<b>12%</b>	6%
- Personal appointment (n = 326)	30%	7%	40%	<b>13%</b>	7%
- Go to a restaurant, meal (n = 134)	26%	<b>12%</b>	38%	8%	6%
- Shopping/errands (n = 107)	21%	9%	<b>53%</b>	4%	4%
- Exercise, recreation (n = 143)	21%	9%	<b>45%</b>	5%	4%
<b>Commute trips</b>					
- Go to/from work (n = 1,176)	<b>51%</b>	3%	35%	3%	5%

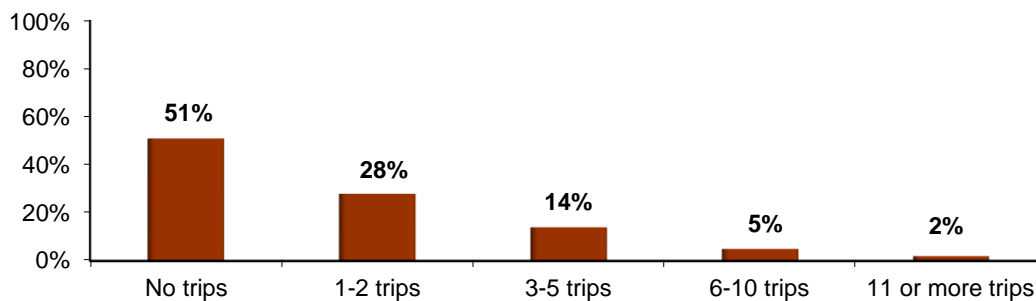
(Statistically higher percentages of mode use are shaded, note: percentage might not add to 100% because not all possible types of transportation are shown)

### Use of Capital Bikeshare to “Induce” Trips

The survey included several questions related to the role Capital Bikeshare could play in encouraging respondents to make trips they otherwise would not have made, referred to in this section as “induced” trips. Half (49%) of all respondents said they used Capital Bikeshare in the past month to make at least one “induced” trip (Figure 19). Twenty-eight percent made one or two induced bikeshare trips, 14% made between three and five trips, and 7% made six or more trips. These respondents were asked additional questions about their induced trips.

**Figure 19**  
**Number of “Induced” Bikeshare Trips Made in Past Month**

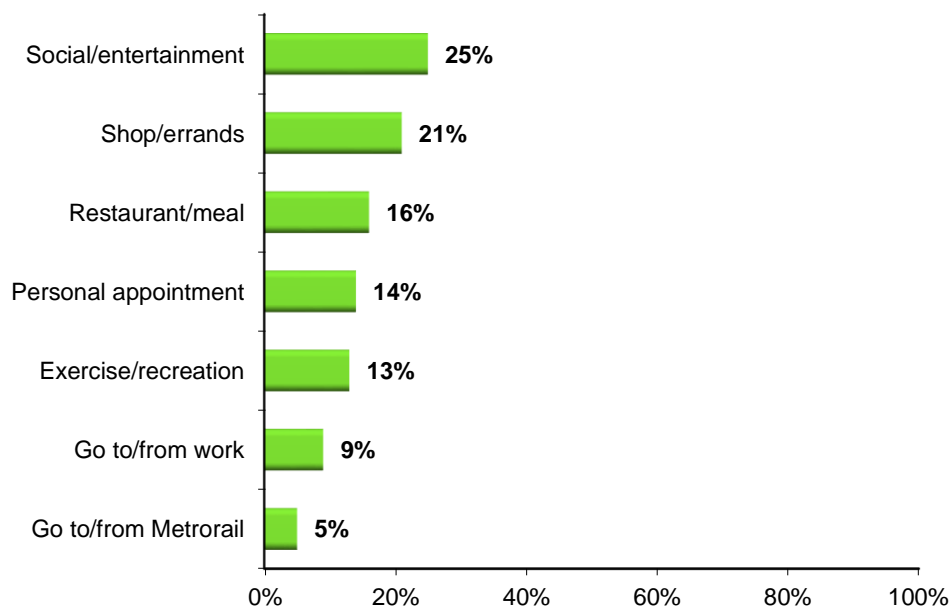
(n = 4,299)



### **Induced Trip Purposes**

Figure 20 shows the trip purposes for which respondents made induced trips in the past month. The distribution of non-commute induced bikeshare trip purposes was similar to that for all bikeshare trips, as presented earlier in Figure 10. The most common induced trips in the past month were for social/entertainment trips and shopping/errand trips; 25% and 21% of all respondents made an induced trip for these trip purposes. These also were common overall trip purposes. More than one in ten respondents made Induced restaurant/meal trips (16%), personal appointment trips (14%), and exercise/recreation (13%) trips. One in twenty (5%) respondents also made an induced trip to go to/from Metrorail.

**Figure 20**  
**Bikeshare Trip Purposes – “Induced” Trips**  
 (n = 4,299)



The result was quite different for commute trips. Although about three-quarters of respondents used Capital Bikeshare to go to or from work, only 9% mentioned making an induced trip for this purpose. This is a reasonable result, however, as travel to work would not generally be considered discretionary. The trips that were noted might have been trips to a workplace on a weekend or evening, when the respondent might otherwise have worked at home or not worked.

### **Differences in Induced Trips by Member Subgroup**

Several differences were noted in the rate at which various user subgroups made induced Capital Bikeshare trips and the particular induced trip purposes and destinations:

- When Joined Capital Bikeshare – Respondents made induced trips at about the same rate regardless of when they joined Capital Bikeshare. They also made induced trips for the same distribution of trip purposes.

- **Frequency of Capital Bikeshare Use** – Frequent CB users reported more induced trips than did infrequent users; 65% of respondents who made at least 11 bikeshare trips in the past month made an induced trip during that time, while only 36% of respondents who made fewer than six bikeshare trips made an induced trip. Frequent users also mentioned more induced trips than did infrequent users for five trip purposes:

**Percentage who Made Induced Trips Last Month by Trip Purpose and  
Total Number of Capital Bikeshare Trips Last Month**

<u>Induced trip purpose</u>	<u>Fewer than 6 trips</u>	<u>11 or more trips</u>
– Social/entertainment:	11%	37%
– Shopping/errands:	15%	31%
– Personal appointment:	10%	20%
– Meal/restaurant:	11%	23%
– Go to/from work:	7%	13%

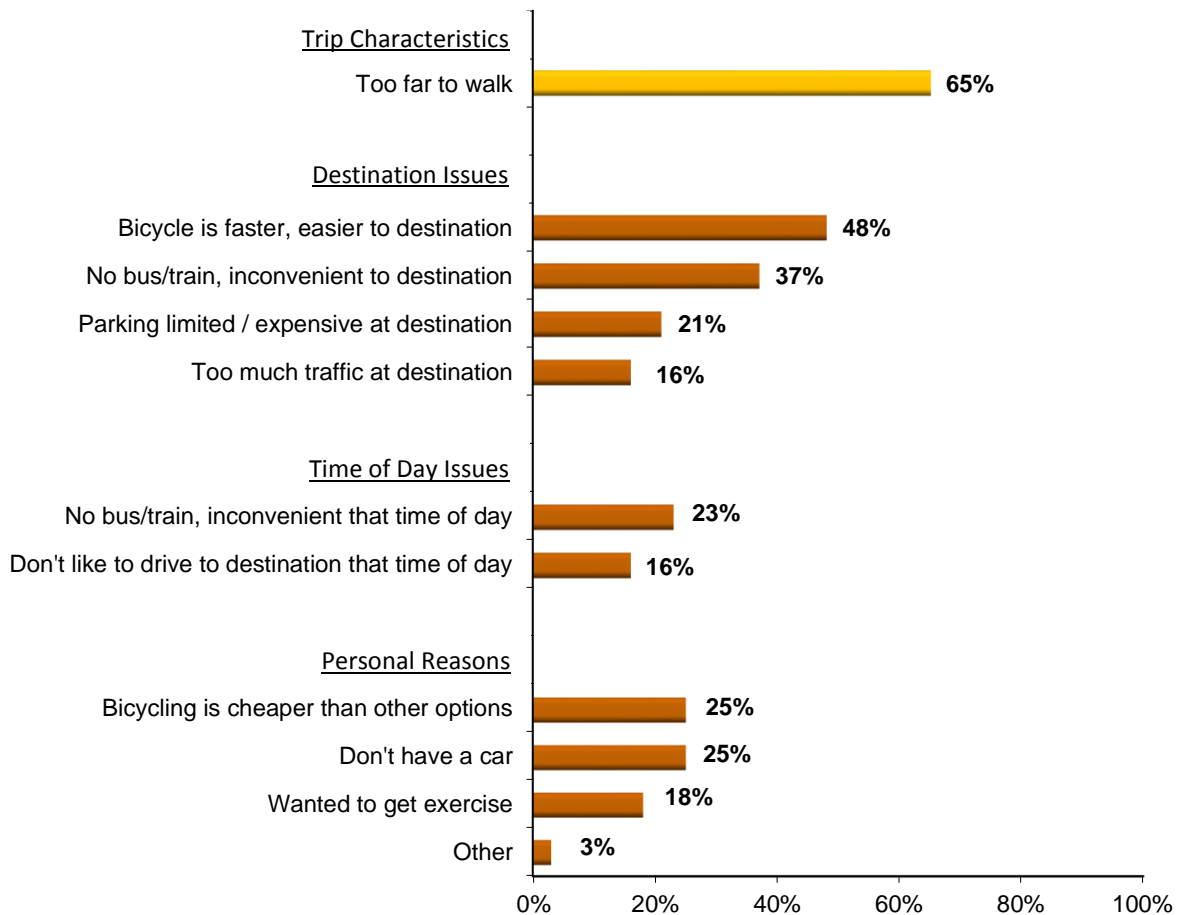
For example, more than one-third (37%) of respondents who made 11 or more bikeshare trips in the past month made a social/entertainment induced trip, compared with only 11% of respondents who made fewer than six bikeshare trips. In general, frequent bikeshare users made two to three times as many induced trips as did infrequent bikeshare users.

- **Home Location** – Respondents made induced trips at about the same rate regardless of where they lived, but District residents were particularly more likely to make a social/entertainment induced trip (28%); only 24% of Arlington residents and 13% of Montgomery/Prince George’s residents made induced trip for this purpose.
- **Sex** – About 53% of male respondents made an induced trip, versus 44% of female respondents. Men were particularly more likely to have made induced trip for personal appointments (16% of men vs 11% of women) and to go to a restaurant (18% of men vs 12% of women).
- **Age** – A higher share of young respondents made induced trips; 51% of respondents who were younger than 35 years old made an induced trip, compared with 48% of respondents who were 35 to 44 years old, and 44% of respondents who were 45 or older. Young residents were particularly more likely to make social/entertainment induced trips; 30% of respondents who were younger than 35 years made this type of induced trip, versus 22% who were between 35 and 44, and 15% of respondents who were 45 or older.
- **Income** – Nearly six in ten (57%) respondents with incomes of less than \$75,000 per year made an induced trip, versus 45% of respondents with incomes of \$75,000 or more. Lower income respondents reported making more induced trips for social/entertainment, restaurant/meals, personal appointments, and shopping/errand trips than did more affluent respondents.
- **Personal Vehicle Available** – Access to a personal motor vehicle seemed related to respondents’ likelihood to make induced trips. More than half (56%) of respondents who did not have access to a personal vehicle made an induced trip in the past month, compared with 43% of respondents who had access to a personal vehicle. Respondents who did not have a vehicle were slightly more likely to make induced trips for social/entertainment (No vehicle – 56%, Vehicle – 47%) and shopping/errand (No vehicle – 47%, Vehicle – 38%). There were no statistical differences in other trip purposes for respondents who had vehicles and those without vehicles.
- **Personal Bike Available** – A higher share of respondents who did not have a personal bicycle made induced trip (52%), compared to respondents with a bicycle (46%). Those without bikes made more induced trips for personal appointments (With bike – 26%, Without bike – 31%), social/entertainment (With bike – 48%, Without bike – 55%), and for exercise trips (With bike – 20%, Without bike – 32%). They were less likely to make trips for going to/from work (With bike – 20%, Without bike – 16%).

**Reasons for Using Bikeshare for Induced Trip**

The previous sections of the report explored the reasons respondents used bikeshare for their most recent trips. Respondents who made induced trips also were asked how bikeshare had influenced them to make these trips. Specifically, respondents were asked, “why would you not have made these trips without Capital Bikeshare?” Figure 21 provides these results, divided into the same four categories as were shown in Figure 19 for recent bikeshare trips: characteristics of the trip, issues related to the trip destination, issues related to the time of day the trip was made, and other personal reasons.

**Figure 21**  
**Why Respondent would not have Made Induced Trips without Bikeshare**  
 (n = 2,066)



The top reason why respondents would not have made this trip without Capital Bikeshare was because it was too far to walk; 65% of respondents mentioned this reason. This response doesn't address whether other travel options were available to make the trips, but it suggests respondents might have substituted some induced trips to distant destination for trips they might have made to locations closer to their origin location. In this way, Capital Bikeshare broadened the travel destination options.

About three-quarters of respondents noted a destination-related issue. Nearly half (48%) said bicycle was a faster or easier way to reach the destinations and 37% reported that public transportation was either not available or

inconvenient to reach those destinations. Two in ten (21%) indicated parking at the destinations was very limited and 16% said they would not have made that trip without bikeshare because there was too much traffic.

Respondents also noted reasons related to the time of day they were traveling. About a quarter (23%) said that transit service didn't operate or that transit was inconvenient at that time of day and 16% mentioned not liking to drive to that destination at that time of day.

Finally, respondents mentioned reasons related either to personal preferences or personal constraints. About one-quarter of respondents said they would not have made the trip without Capital Bikeshare because bicycling was a cheaper option, suggesting the cost of the travel by another mode would have deterred them from making that trip. One-quarter said they didn't have a car and 18% made an induced trip primarily to get exercise.

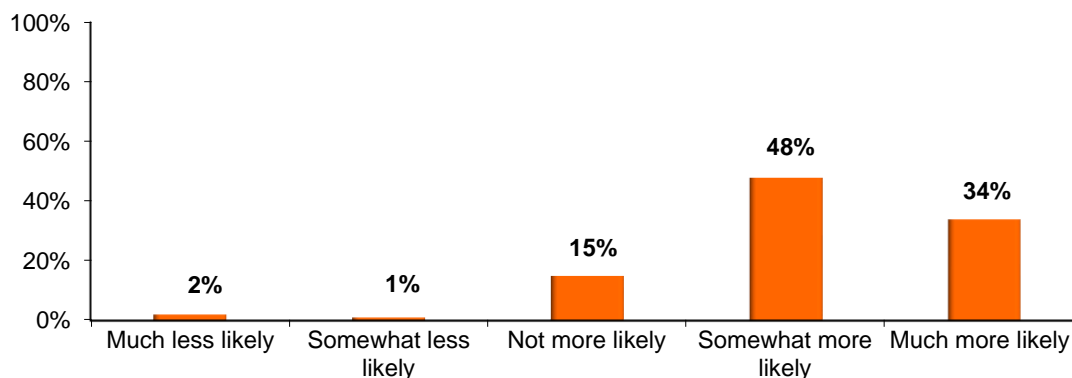
Respondents of different ages and incomes cited different reasons. Young respondents and respondents with lower incomes were more likely than average to mention reasons related to their lack of transportation options: too far to walk, transit was either unavailable or inconvenient at that time or to that destination, or that they did not have a car. These respondents also noted reasons related to the time and cost advantage of Capital Bikeshare in comparison with other travel options. For these members, bikeshare expanded the range of destinations to include locations that were otherwise difficult to reach.

Older respondents and those with higher incomes more often mentioned reasons related to disadvantages of driving: they didn't want to drive to that destination at that time of day, too much traffic around that destination, or that parking was limited at the destination. For these respondents, Capital Bikeshare made the destination more attractive or less of a bother to reach than it otherwise would be.

## **Capital Bikeshare Encouraging Patronage of Bikeshare-accessible Establishments**

Several of the earlier results indicate that the availability of Capital Bikeshare bikes broadened the range of destinations to which members could travel. To examine this further, the survey included a question that asked, "if a commercial or retail business, restaurant, or shop is easily accessible by Capital Bikeshare, does that access make you more or less likely to patronize that establishment?" These results are presented in Figure 22.

**Figure 22**  
**Likelihood to Patronize Establishment if Accessible by Capital Bikeshare**  
(n = 4,298)



The figure clearly shows that Capital Bikeshare access made establishments more attractive to most bikeshare members. More than eight in ten respondents said they were either much more likely (34%) or somewhat more

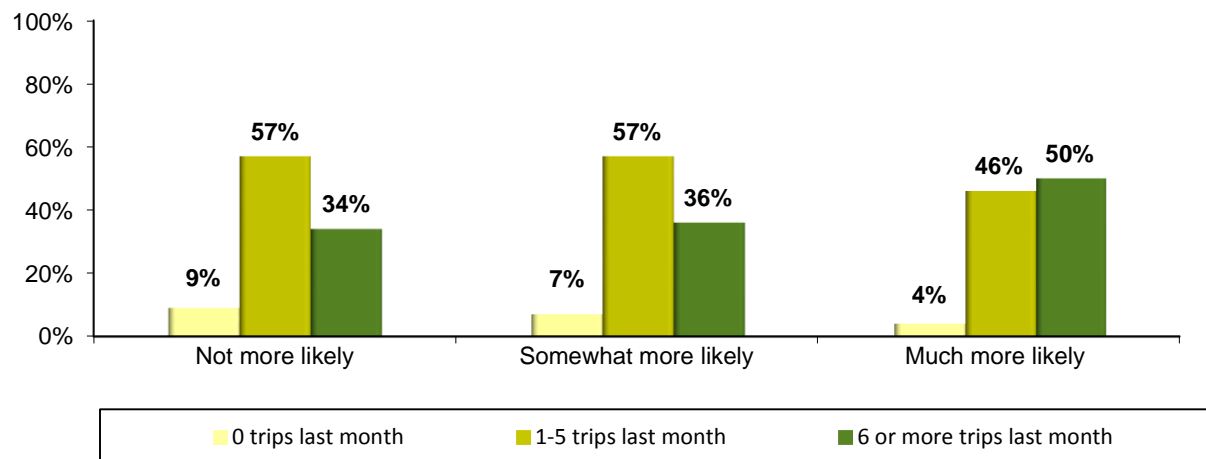


likely (47%) to patronize a bikeshare-accessible establishment. Fifteen percent said access was not a factor in their choice of establishments. Bikeshare access certainly did not appear to be detrimental to an establishment; only 3% of the respondents who answered the question said they would be less likely to patronize a bikeshare-accessible establishment.

### **Frequency of Bikeshare Use Interest by in Capital Bikeshare Accessibility**

Given the overwhelming support shown for Capital Bikeshare-accessibility across all survey respondents, it is not surprising that this result was consistent across nearly all respondent subgroups. One interesting result, however, was that respondents who reported they were much more likely to patronize a bikeshare-accessible establishment made more bikeshare trips in the past month than did respondents who were only somewhat more likely or not more likely (Figure 23).

**Figure 23**  
**Trips Made in Past Month – by Likelihood to Patronize Establishment if Accessible by Capital Bikeshare**  
(Not more likely n = 721, Somewhat more likely n = 2,018, Much more likely n = 1,424)



Overall use of bikeshare was not dramatically different among the three groups: 95% who said they were much more likely to patronize a CB-accessible establishment made at least one bikeshare trip last month, compared with 93% who were somewhat more likely and 91% who were not more likely. But respondents who said they were much more likely were the most frequent users of the Capital Bikeshare service; 50% made six or more trips, compared with about one-third of those who were somewhat more likely or not more likely to patronize the bikeshare-accessible establishment.

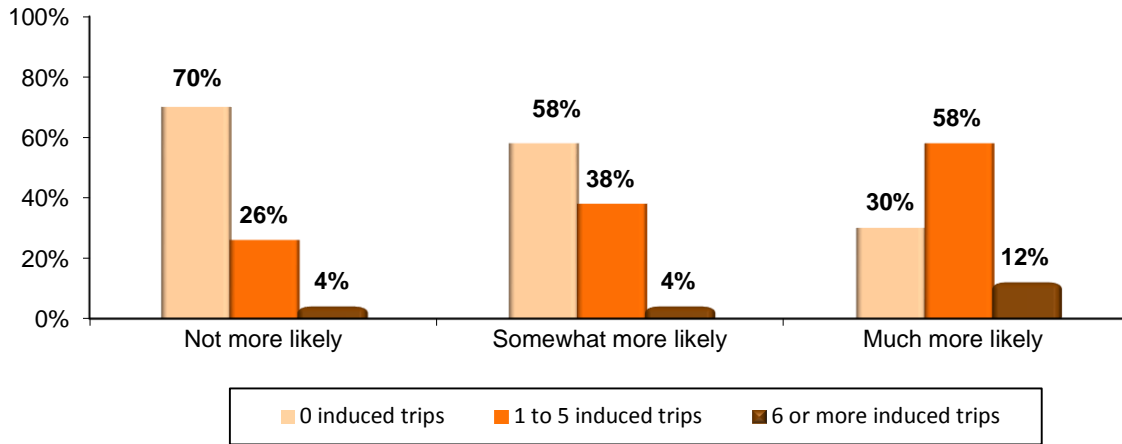
### **Induced Trips by Interest in Capital Bikeshare Accessibility**

Respondents who said bikeshare access was a motivating factor also made induced trips at a much higher rate (Figure 24). Seven in ten (70%) respondents who said they were much more likely to patronize a Capital Bikeshare-accessible establishment made an induced trip in the past month, compared with 42% who said they were somewhat more likely, and only 30% of those who said they were not more likely to patronize the establishment. This suggests that the decision to make some, and perhaps many, induced trips was motivated by the establishments' accessibility.

**Figure 24**

**Made Induced Trip in Past Month – by Likelihood to Patronize Establishment if Accessible by Capital Bikeshare**

(Not more likely n = 721, Somewhat more likely n = 2,018, Much more likely n = 1,424)



**Changes in Use of Biking and Non-Biking Modes Since Joining Capital Bikeshare**

One expected impact of bikeshare is to encourage members to shift travel from other modes to bicycling. To explore this possibility, the survey asked respondents if, as a result of their use of Capital Bikeshare, they had increased, decreased, or made no change in how often they rode a bicycle and how often they used other forms of transportation.

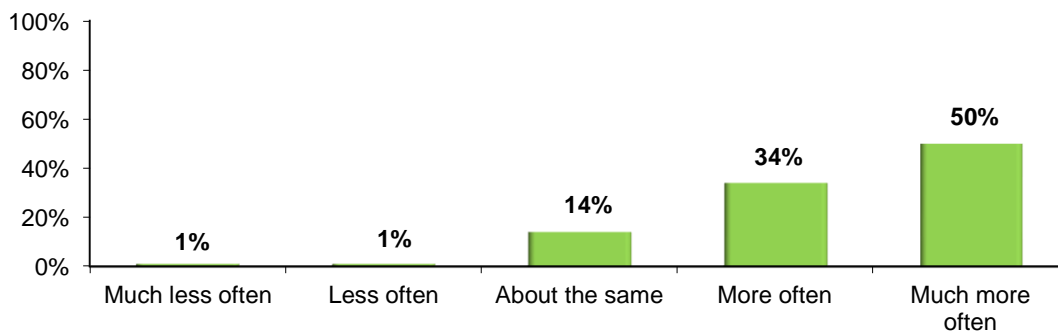
**Change in Bicycle Use**

Figure 25 presents the percentages of respondents who made changes in their use of bicycle after joining Capital Bikeshare. More than eight in ten respondents said they bicycled more often since joining; 34% said they bicycled “somewhat more often” and 50% bicycled “much more often.” Fourteen percent made no change in how often they bicycled and two percent said they reduced their bicycle use.

**Figure 25**

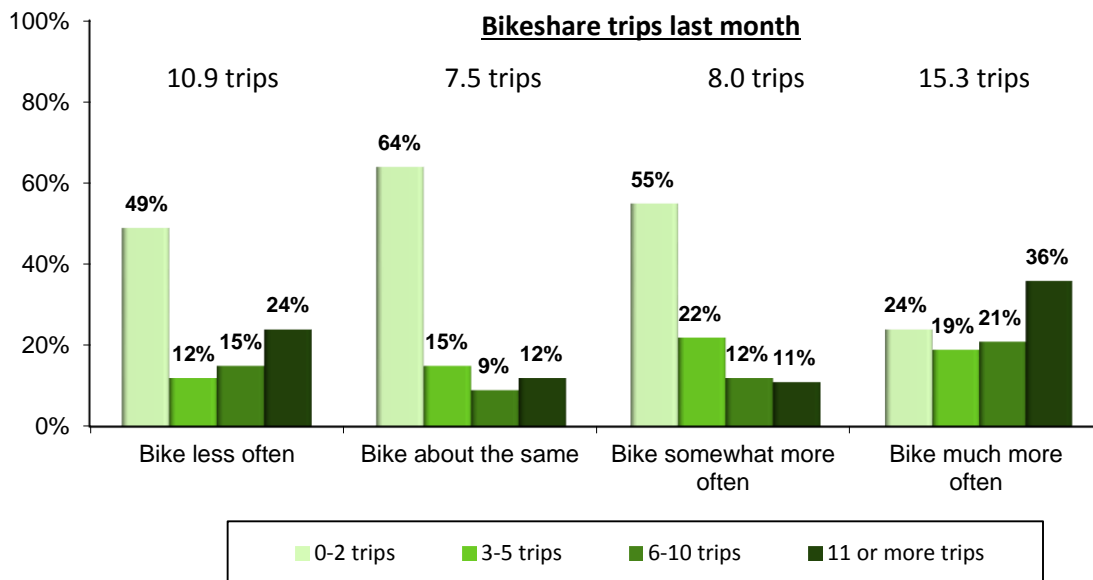
**Change in Bicycle Use Since Joining Capital Bikeshare**

(n = 4,292)



Presumably, respondents’ bikeshare use was the reason they increased their bicycling. But the question asked respondents to consider both their use of bikeshare and personal bicycle when answering about changes in bike use, so some new bicycle use could be with a personal bike. To examine the role bikeshare played in encouraging greater use of bicycle, the survey analysis examined the number of Capital Bikeshare trips the respondents made in the past month by their reported change in bicycle use (Figure 26).

**Figure 26**  
**Capital Bikeshare Trips Made Last Month – by Change in Bicycle Use Since Joining Capital Bikeshare**  
 (Bike less often n = 89, Bike about the same n = 607, Bike somewhat more often n = 1,450, Bike much more often n = 2,144)



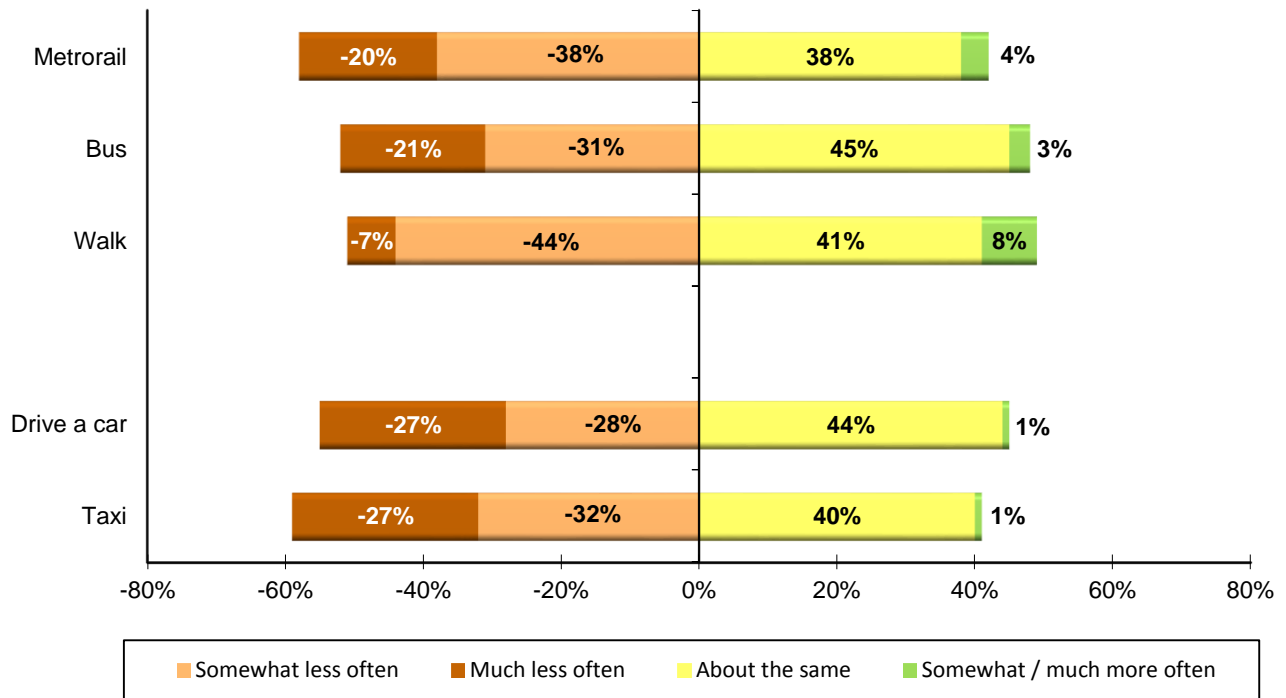
Respondents who reported the greatest increase in bike use also reported the most frequent Capital Bikeshare use. Respondents who said they biked “much more often” reported making an average of 15.3 bikeshare trips in the past month, compared with 8.0 trips for respondents who said they biked “somewhat more often,” and 7.5 trips for those who reported no change in bike use. And 57% of “much more often” respondents made at least six Capital Bikeshare trips in the past month, compared with 23% of the “somewhat more often” respondents, and 21% of those who reported no change in bike use.

A significant portion of respondents who said they biked less often also used bikeshare frequently; 39% reported making at least six bikeshare trips in the past month. But this result was based on only 89 respondents and while the question specifically instructed respondents to include use of both bikeshare and personal bikes, it is possible some of these respondents misread the question and reported a change only in personal bike use.

**Change in Use of Transit, Walking, and Auto Modes**

The survey also asked respondents if they had changed their use of any of five non-bicycle types of transportation: Metrorail, bus, walking, driving a car, and taxi. These results are illustrated in Figure 27.

**Figure 27**  
**Change in Use of Non-bicycle Modes Since Joining Capital Bikeshare**  
 (Metrorail n = 4,244, Bus n = 4,191, Walk n = 4,219, Car n = 4,154, Taxi n = 4,175)



Respondents substantially reduced their use of both bus and Metrorail since they joined Capital Bikeshare. Nearly six in ten reduced their use of Metrorail; 38% rode Metrorail somewhat less often and 20% rode much less often. About half rode a bus somewhat less often (31%) or much less often (21%). Only 4% of respondents increased use of Metrorail and 3% increased bus use. Respondents also decreased their use of walking substantially; about half walked either somewhat less often (44%) or much less often (7%). Eight percent of respondents said they walked more often.

Finally, the survey asked respondents about changes they made since joining Capital Bikeshare in how often they drove a car and how often they rode in a taxi. Respondents substantially reduced their use of car and taxi. More than half reduced their car use; 28% said they drove a car somewhat less often and 27% drove much less often. The reduction in taxi use was about the same; three in ten rode in a taxi somewhat less often (32%) and 27% used a taxi much less often. Only 1% of respondents increased use of car or taxi.

**Change in Use of Non-bicycling Modes by Frequency of Capital Bikeshare Use**

The preceding figures showed that, overall, survey respondents increased their use of biking and decreased use of other modes. As also noted earlier, many respondents said they use Capital Bikeshare to make some trips they would not otherwise make. For these trips, bikeshare would not substitute for another mode. But presumably, some trips now made by bikeshare would have been made previously by a different type of transportation. To examine possible shifts in mode use, the analysis compared changes in respondents’ use of each non-biking mode against their frequency of bikeshare use (Table 11).

**Table 11**  
**Respondents Who Reduced Use of Modes Other than Bicycle – by Frequency of Capital Bikeshare Use**  
 (1-5 trips n = 1,435, 6-10 trips n = 787, 11-19 trips n = 672, 20 or more trips n = 983)

Capital Bikeshare Trips In Past Month	Percentage of Respondents who Reduced Use of Mode				
	Metrorail	Bus	Walk	Drive a Car	Taxi
1-5 trips	46%	40%	46%	49%	55%
6-10 trips	62%	56%	53%	56%	62%
11-19 trips	66%	60%	57%	62%	65%
20 or more trips	74%	66%	57%	61%	63%
<b>Net reduction</b>	<b>28%</b>	<b>26%</b>	<b>11%</b>	<b>12%</b>	<b>8%</b>

Each mode column in the table presents the percentage of respondents who reduced use of that mode by the frequency with which they used Capital Bikeshare. For example, the Metrorail column shows that 46% of respondents who made between one and five trips by bikeshare in the past month reduced their bus use after joining the program. Among respondents who made six to ten bikeshare trips in the past month, 62% had reduced Metrorail use since joining bikeshare. The percentage of respondents who reduced Metrorail use was even greater among those who made 11 to 19 bikeshare trips (66%) and 20 or more trips (74%). The “Net reduction” row shows that the percentage of respondents in the most frequent bikeshare use group (20 or more trips = 74%) who reduced Metrorail use was 28 percentage points higher than for the most infrequent bikeshare use group (1 to 5 trips = 46%).

The results were similar for all mode groups; the share of respondents who reduced use of a non-biking mode since they joined Capital Bikeshare increased as their bikeshare use increased. The change was most pronounced for Metrorail and bus. The differences were less dramatic for use of walk, driving a car, and taxi, suggesting that bikeshare was substituted less often for these modes.

### **Net Change in Use of Non-bike Modes by Vehicle Availability**

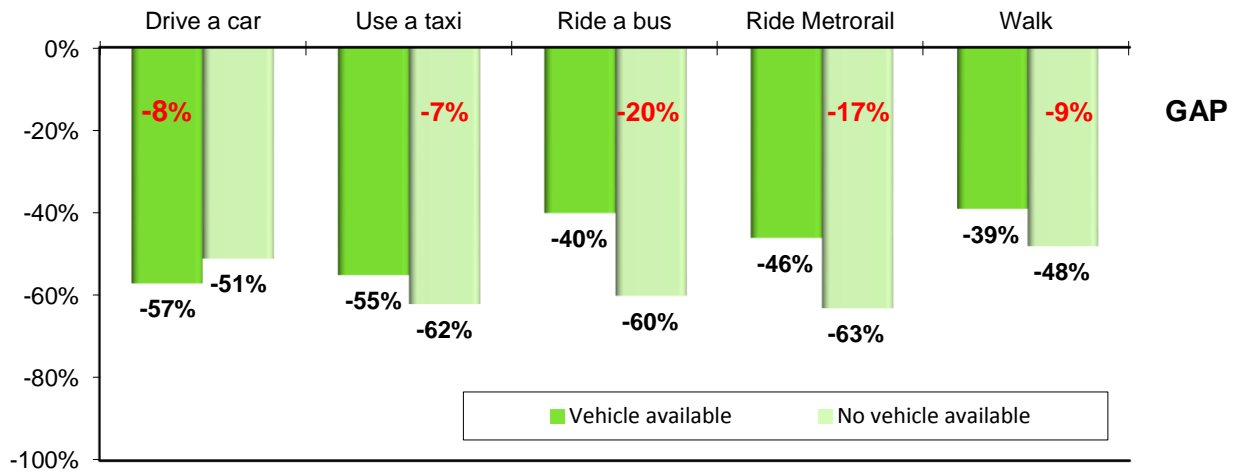
It seems reasonable to expect that car-free respondents would have made different mode changes than those who had a vehicle option. Figure 28 compares the “net reduction” in use of the five non-bike modes for respondents who had a personal vehicle available for regular travel with those who did not have a vehicle. In this chart the “net change” percentages for each mode were calculated as the percentages of respondents who said they reduced use of that mode since joining Capital Bikeshare minus the percentage who said they increased use of the mode.

Both the “with vehicle” and “no vehicle” respondent subgroups reported significant net reductions in driving a car. Respondents with access to a personal vehicle showed a greater net reduction (-57%) than did respondents without access to a vehicle (-51%). This is a reasonable result, since respondents who did not have a vehicle when they joined Capital Bikeshare would have had limited vehicle use before joining. Conversely, respondents who did not have a vehicle regularly available for their travel showed greater reductions in use of taxi, bus, Metrorail, and walking, although respondents who had a vehicle available also reported substantial net reductions in these modes.

**Figure 28**

**Net Change in Use of Car, Taxi, Bus, Metrorail, and Walk Since Joining Capital Bikeshare – by Vehicle Available**

(Vehicle available n = 2,371, No vehicle available n = 1,804)  
Significant differences highlighted in red



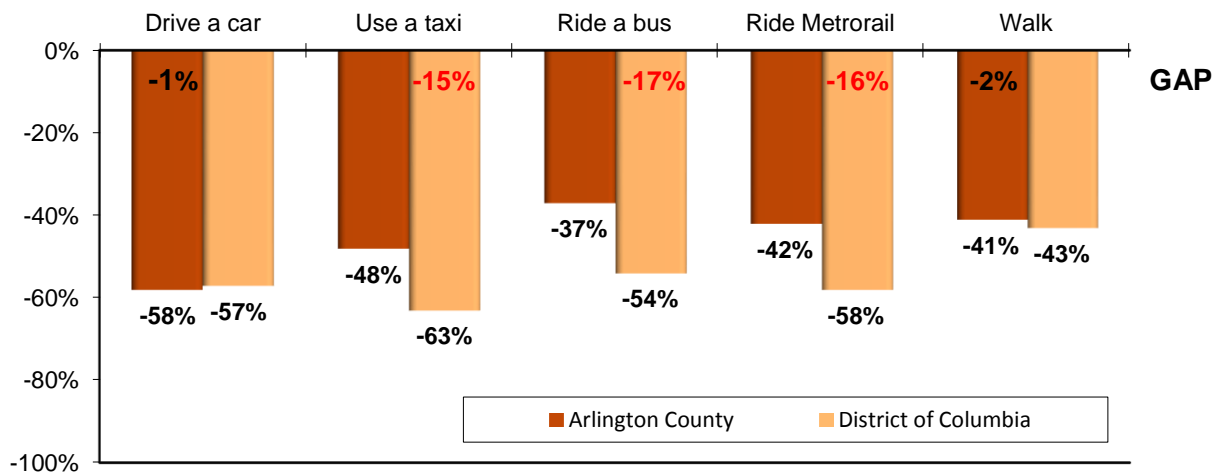
**Net Change in Use of Non-bike Modes by Home Locations**

The mode use “net change” comparison in Figure 29 compares mode changes for respondents who lived either in Arlington County or the District of Columbia, jurisdictions where most Capital Bikeshare stations are located.

**Figure 29**

**Net Change in Use of Car, Taxi, Bus, Metrorail, and Walk Since Joining Capital Bikeshare – by Home Location**

(Arlington County n = 349, District of Columbia n = 2,639)  
Significant differences highlighted in red



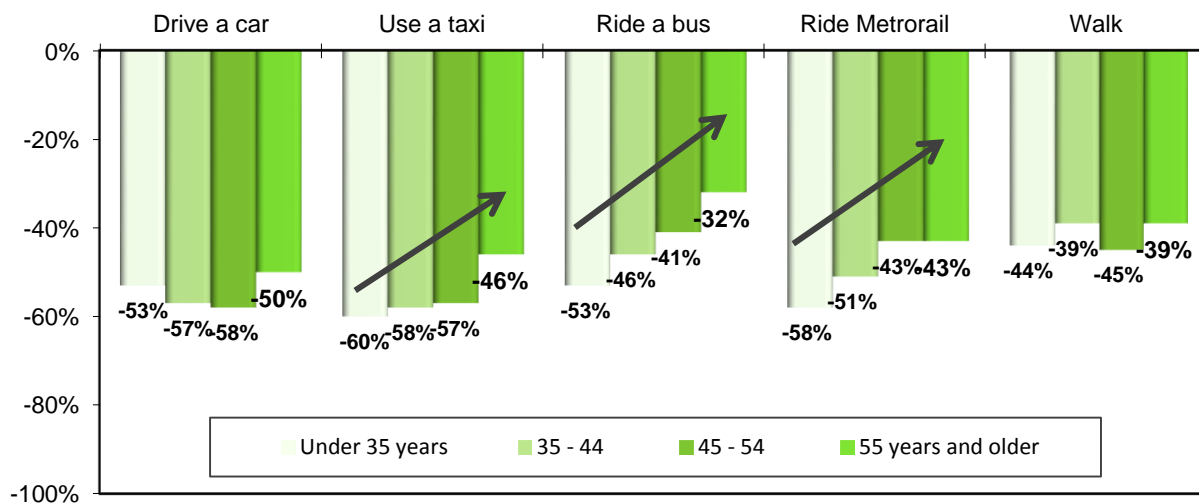
Again, both groups of respondents had net reductions in use of all five modes. But District of Columbia respondents reported much greater net reductions than did Arlington County respondents in their use of three modes: taxi (-63% in the District vs -48% in Arlington), bus (-54% in the District vs -37% in Arlington), and Metrorail (-58% in the District vs -42% in Arlington). Reductions in the use of walking and car were not statistically different for the two groups.

**Net Change in Use of Non-bike Modes by Age**

Finally, Figure 30 displays the mode use “net change” comparison for respondents of four age groups: younger than 35 years old, 35 to 44 years old, 45 to 54 years old, and 55 years and older.

The figure shows a clear age-related pattern for taxi, bus, and Metrorail; substantial mode use reduction across all categories, but with declining reductions as age increased. Reductions in use of a car presented an opposite pattern; greater reduction in car use as age increased. But the smaller reduction among younger respondents likely reflected their lower rate of car availability; as noted earlier in the report, young respondents were less likely than were older respondents to have regular access to a personal vehicle. Reductions in the use of walking were not statistically different for the four groups.

**Figure 30**  
**Net Change in Use of Car, Taxi, Bus, Metrorail, and Walk Since Joining Capital Bikeshare – by Age**  
 (Under 35 years n = 2,317, 35 - 44 n = 798, 45 - 54 n = 468, 55 and older n = 307)



**Changes in Vehicle Ownership and Driving Miles Since Joining Capital Bikeshare**

The previous section described the results of a qualitative question about Capital Bikeshare members’ change in use of driving a car since joining the program. The survey also included several questions to examine two quantitative measures of driving change: changes in auto ownership and change in the annual number of miles respondents drive since joining Capital Bikeshare.

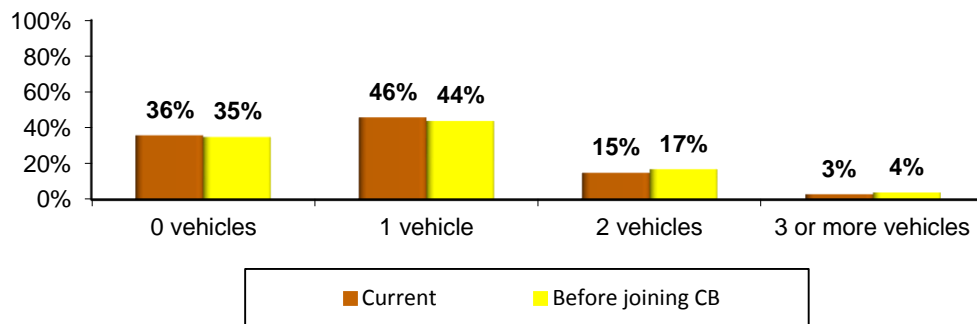
**Change in Household Vehicles**

Number of Vehicles in the Household – All respondents were asked how many personal motor vehicles were owned or leased by members of their household at the time of the survey and how many they had at the time they joined Capital Bikeshare. Respondents also were asked if they had sold a personal household vehicle since they joined Capital Bikeshare. Figures 31 and 32 present the results of these questions.

At the time of the survey, 36% of respondents said their household did not have any personal vehicles, 46% said they had one vehicle and 18% said they had two or more vehicles. On average respondents reported an average of 0.88 vehicles in the household at the time of the survey.

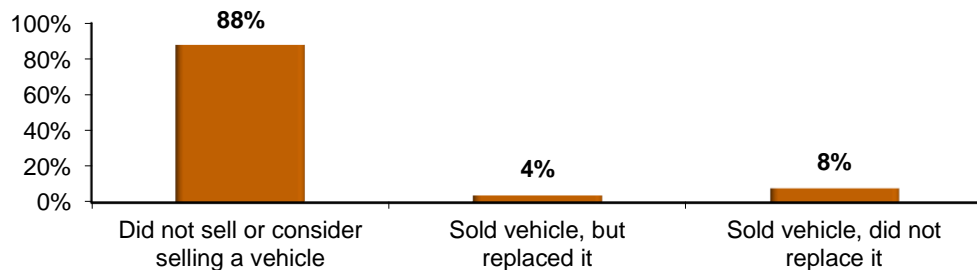
The results for the time just before joining Capital Bikeshare were very similar; 35% had no vehicles, 44% had one vehicle, and 21% had two or more vehicles. The average number of household vehicles prior to the time they joined Capital Bikeshare was 0.90.

**Figure 31**  
**Number of Household Vehicles “Now” and Before Joining Capital Bikeshare**  
 (n = 4,149)



Sale of Personal Vehicles in the Household – All respondents were asked if they sold or considered selling a personal household vehicle since they joined Capital Bikeshare (Figure 32).

**Figure 32**  
**Sold Personal Household Vehicles Since Joining Capital Bikeshare**  
 (n = 4,101)

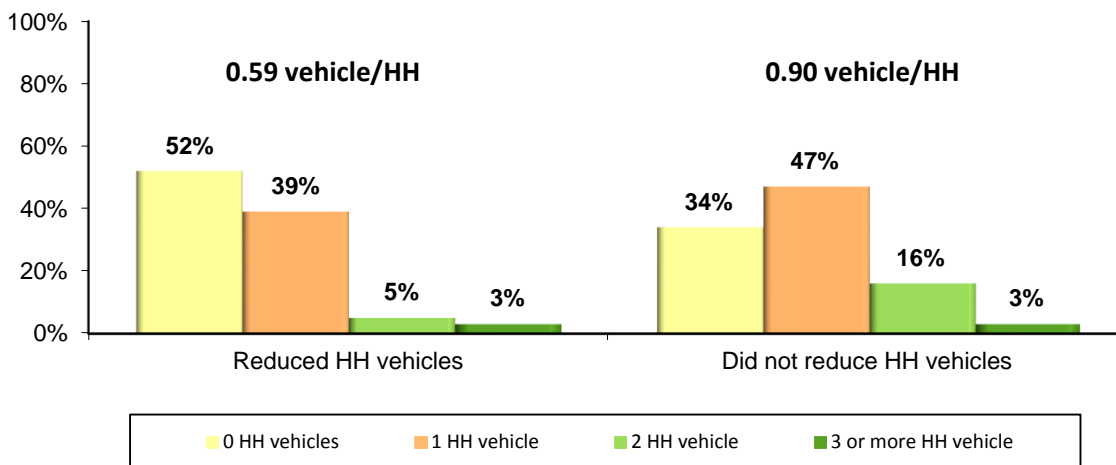




Eighty-eight percent of respondents had not made any changes or considered making changes in the number of vehicles in the household. Four percent did sell a vehicle since joining Capital Bikeshare, but replaced the vehicle with another, so didn't reduce the number of household vehicles. The remaining 8% sold a vehicle and did not replace it; they reduced the total number of vehicles available to members of their households.

Number of Household Vehicles by was a Vehicle Sold – Figure 33 presents the distribution of household vehicles at the time of the survey for respondents who reduced a household vehicle (e.g., sold a vehicle they did not replace) and those who did not reduce the number of household vehicles. Respondents who reduced a household vehicle had a considerably smaller average number of vehicles in the household (0.59 vehicles), compared with 0.90 vehicles for respondents who did not make a change in the number of household vehicles.

**Figure 33**  
**Current Number of Vehicles by Change in Household Vehicle**  
 (Reduced HH vehicle n = 309; Did not reduce HH vehicle n = 3,737)



Among respondents who reduced a household vehicle, 52% reported that they now lived in zero-vehicle households, indicating they sold their only vehicle. Another four in ten (39%) shifted from a two-vehicle household to a one-vehicle household. The remaining 8% of “reduced vehicle” respondents still had two or more vehicles.

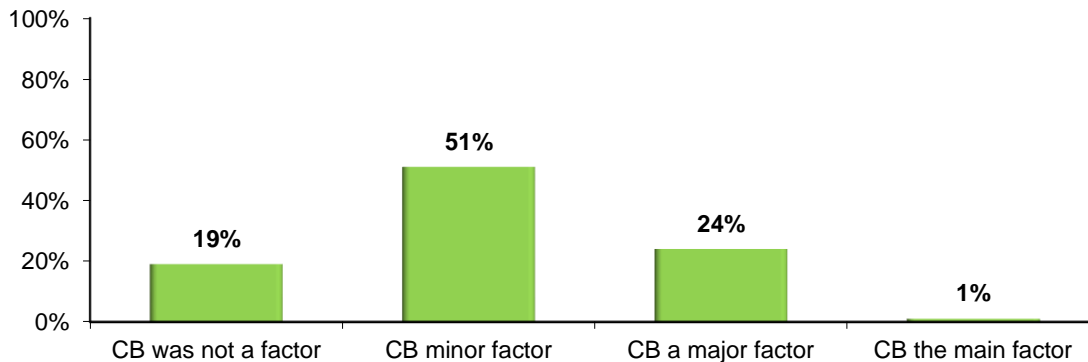
Figure 33 also shows the distribution of household vehicles for respondents who did not eliminate a vehicle. Although the percentage who still had a vehicle (66%) was still much lower than the regional average, it was considerably higher than for respondents who eliminated a vehicle. And the percentages of respondents who reported one or two vehicles were higher than for the “reduced vehicle” respondents.

Change in Mode Use by Sold Vehicle – Respondents who reduced a household vehicle also reported a greater “net reduction” in use of driving a car, compared with respondents who did not make a vehicle change. Seven in ten (70%) respondents who eliminated a vehicle reported that they drove a car “somewhat less often” or “much less often,” compared with about half (52%) of respondents who did not eliminate a vehicle.

Respondents who reduced a household vehicle and those who did not change the number of vehicles reported similar net increases in bicycle use; 83% for respondents who eliminated a household vehicle and 81% for those who had not reduced their vehicles. But respondents who reduced household vehicles reported smaller net reductions in other non-driving modes, suggesting they while they shifted some trips from car to bike, they still used transit, walk, and taxi for many of their trips.

Importance of Capital Bikeshare in Encouraging Sale of Vehicle – Respondents who sold a vehicle they didn’t replace were asked how important their membership in Capital Bikeshare had been to this decision (Figure 34). Overall, about 76% of respondents said Capital Bikeshare had been at least a minor factor in the decision. A quarter (24%) said it was a major factor in combination with other factors, and 1% said it was the main factor.

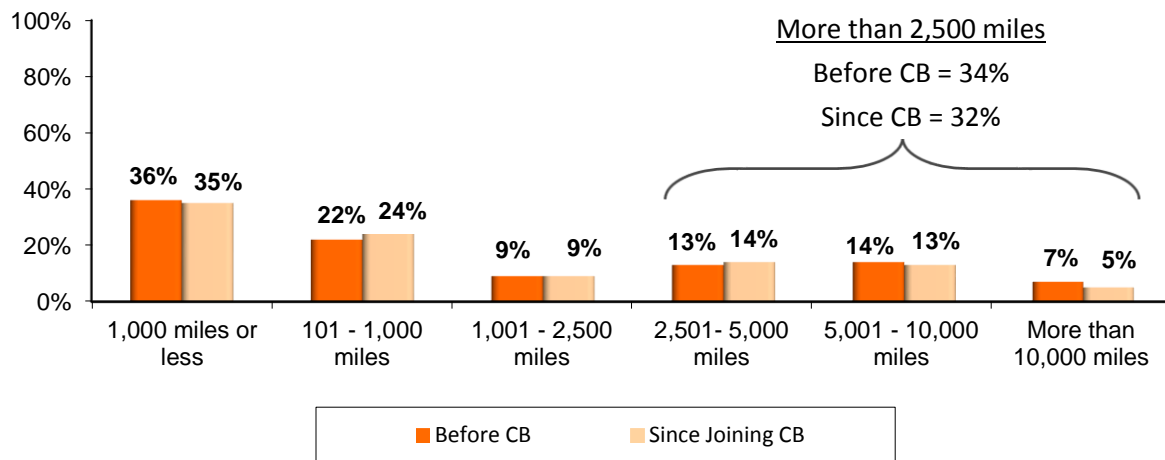
**Figure 34**  
**Importance of Capital Bikeshare in Encouraging Sale of Vehicle**  
 (n = 248)



**Annual Miles Traveled by Driving**

Respondent also were asked how many miles they drove in the year before they joined Capital Bikeshare and how many miles they drove per year at the time of the survey. Before bikeshare, respondents drove an average of 2,830 miles annually. Since joining, the average driving miles fell to about 2,672 per year. Figure 35 presents the distribution of respondents by their annual driving miles.

**Figure 35**  
**Total Annual Vehicle Miles Driven Before and After Joining Capital Bikeshare**  
 (Before Capital Bikeshare n = 3,734, With Capital Bikeshare n = 3,790)



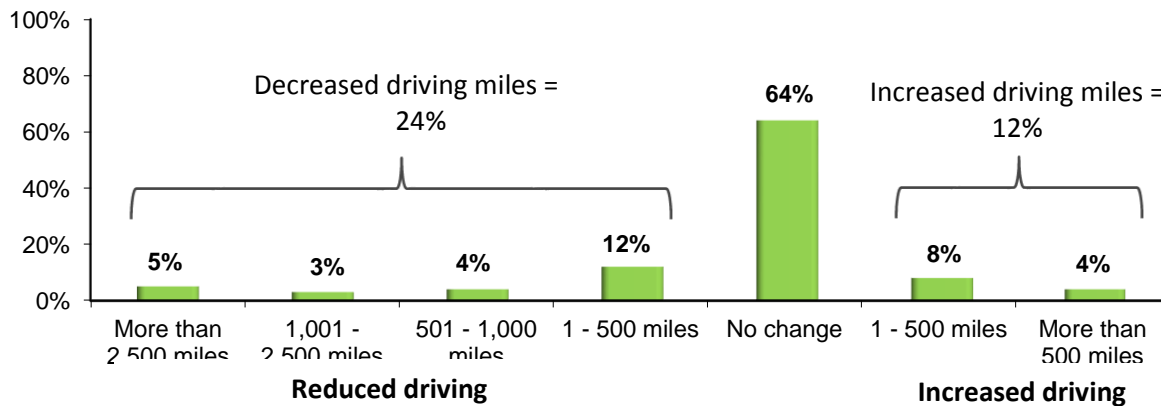
Before bikeshare, 34% of respondents drove more than 2,500 miles per year. At the time of the survey, 32% of respondents were driving this far in a year. But as is clearly evident, most respondents drove very few mile; 58% reported annual mileage of 1,000 or less before joining Capital Bikeshare, so these respondents could not have reduced their driving miles substantially below their pre-bikeshare mileage.

**Change in Annual Driving Miles**

One-quarter (24%) of respondents who reported their mileage before and with bikeshare reduced their driving miles (Figure 36). Twelve percent reduced from one to 500 miles, 4% eliminated between 501 and 1,000, 3% reduced between 1,001 and 2,500, and 5% reduced more than 2,500 annual driving miles. Twelve percent of respondents increased their annual driving miles, but these increases were modest, compared with decreases; 8% added between one and 500 miles and 4% percent increased mileage by more than 500 miles.

**Figure 36**  
**Change in Annual Vehicle Miles Driven Since Joining Capital Bikeshare**

(n = 3,733)



Changes in Driving Miles by Various Groups of Respondents – Changes in driving miles were not uniformly distributed across all respondents. Table 12 shows the percentages of various respondent groups who decreased driving miles, increased driving miles, and made no changes.

The change in the number of driving miles after joining Capital Bikeshare appeared connected to:

- Age – Older respondents were more likely than were young respondents to have reduced their driving miles. Driving reductions were noted in all age groups, but only 18% of respondents who were under 25 years old reported a reduction, compared with about one-quarter of older respondents. And respondents who were younger than 25 years old were as likely to increase their driving miles as to decrease them.
- Sex – A higher proportion of male respondents decreased driving miles (28% of men vs 18% of women). The difference in increased driving miles was not significant, thus female respondents were more likely to have maintained their driving miles.
- Number of Capital Bikeshare Trips in Past Month – Respondents who were frequent bikeshare users were more likely to report reduced driving miles than were respondents who used bikeshare less often. Three in ten (31%) respondents who made 11 or more bikeshare trips in the past month reduced their annual driving miles compared with about two in ten of those who made fewer than six trips in the past month.

**Table 12**  
**Change in Annual Driving Miles Since Joining Bikeshare – By Age, Sex, Race / Ethnicity, and Frequency of Bikeshare Use**

Respondent Characteristic	Change in Annual Driving Miles	
	Reduced Miles	Increased Miles
<b>Age</b>		
Less than 25 years old (n = 265)	18%	16%
25 – 34 years old (n = 1,736)	<b>24%</b>	12%
35 – 44 years old (n = 735)	<b>24%</b>	11%
45 or older (n = 764)	<b>27%</b>	9%
<b>Sex</b>		
Female (n = 1,342)	18%	13%
Male (n = 2,129)	<b>28%</b>	11%
<b>Race/Ethnicity</b>		
Non-white (n = 516)	23%	14%
White (n = 2,782)	24%	11%
<b>Capital Bikeshare trips in Past Month</b>		
0 trips (n = 251)	15%	12%
1 – 5 trips (n = 1,289)	19%	11%
6 – 10 trips (n = 716)	<b>24%</b>	12%
11 – 19 trips (n = 594)	<b>30%</b>	13%
20 or more trips (n = 881)	<b>31%</b>	11%

(Statistically higher percentages are shaded)

### **Impact of Driving Miles Changes Overall**

On average, respondents who reported both a current and pre-bikeshare mileage drove about 2,830 miles per year before bikeshare. At the time of the survey, respondents drove an average of 2,672 miles per year, a reduction of about 158 miles annually.

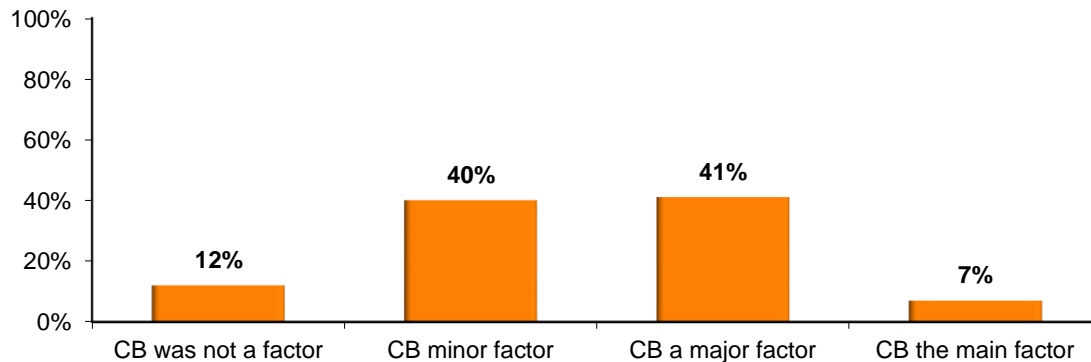
When these survey results were applied to the estimated Capital Bikeshare member population in November 2014, the month in which the survey was conducted, the results were as follows:

- Number of Capital Bikeshare members (November 2014) 27,600
- Estimated annual VMT reduced per member 158
- Estimated total annual VMT reduced **4,360,000 annual miles**

Contribution of Capital Bikeshare to Reduction in Driving – It is likely that not all of the 4.4 million driving miles reduction was directly due to or influence by Capital Bikeshare. Respondents who said they decreased their driving miles since joining Capital Bikeshare were asked to what extent Capital Bikeshare contributed to the change (Figure 37). Overall, 88% of respondents who reduced their driving miles indicated that bikeshare had been at least somewhat of a factor contributing to the reduction. Seven percent said that it was the *main factor* influencing their reduced driving and 41% said it was a *major factor*, in combination with other factors. About 40% said bikeshare was a *minor factor*, in combination with other factors

**Figure 37**  
**Role of Capital Bikeshare in Contributing to Reduced Driving**

(n = 892)



### **Capital Bikeshare Members' Cost Saving by Using Capital Bikeshare**

One possible personal outcome of a members' use of Capital Bikeshare would be to reduce his or her transportation costs. Capital Bikeshare service is free for the first 30 minutes of any trip, so trips shifted from public transit, taxi, or even personal vehicle would result in cost saving for the member. Respondents were asked how much money they thought Capital Bikeshare saved them weekly on their travel costs, compared with what they were spending before they joined.

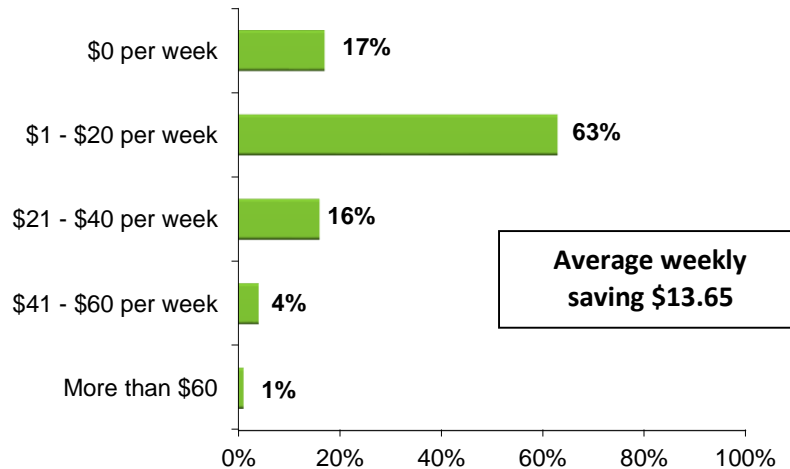
More than eight in ten (83%) respondents said they thought Capital Bikeshare saved them money (Figure 38). About six in ten said they saved between one dollar and \$20 per week, 16% saved between \$21 and \$40, and 4% saved between \$41 and \$60. About 1% saved more than \$60. Across all respondents, the average weekly saving was about \$13.65, or about \$710 over the course of the year. Not surprisingly, respondents who used bikeshare more often reported higher cost savings. Respondents who made at least 11 trips in the previous month reported an average weekly saving of \$19.26, for an annual total of \$1,002.

Collectively, the 27,600 Capital Bikeshare members in November 2014 were saving nearly \$20 million dollars each year.

- Number of bikeshare members (November 2014) 27,600
- Estimated annual cost saving per member \$710
- Estimated total annual cost saving **\$19,600,000 annually**

**Figure 38**  
**Weekly Travel Cost Saving Since Joining Capital Bikeshare**

(n = 3,979)



## **Commute Travel of Bikeshare Users and Changes Since Joining Capital Bikeshare**

Nearly all (95%) respondents said they were employed. These respondents were asked about their current travel from home to work and about changes they might have made in their travel since they joined Capital Bikeshare.

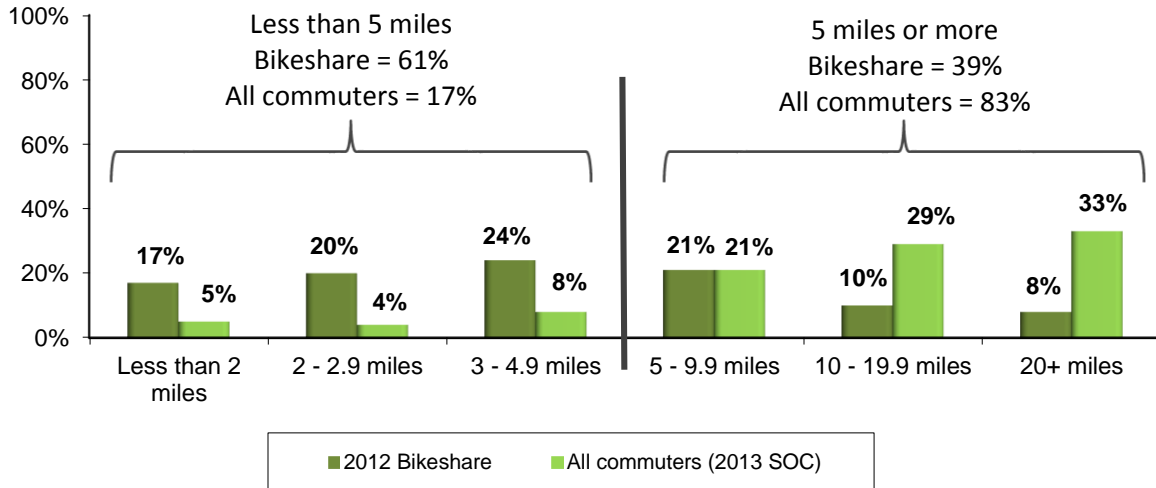
### **Commute Distance to Work**

Bikeshare members traveled much shorter distances to work than did all commuters in the Washington metropolitan region (Figure 39). More than six in ten bikeshare survey respondents traveled fewer than five miles to work and 37% traveled fewer than three miles. Only about 18% traveled 10 miles or more. On average, bikeshare survey respondents traveled 6.2 miles to work, one-way. This was statistically the same as the average distances (6.2 miles) reported in the 2012 (6.3 miles) and 2011 (6.2 miles) Capital Bikeshare surveys.

The figure also shows the distance distribution for all commuters in the region (2013 SOC survey). The bikeshare distance was dramatically different than the distance for all commuters in the region. Only 17% of all regional commuters traveled five miles or fewer and 62% of all regional commuters traveled 10 or more miles. The average commuter in the Washington metropolitan region traveled 16.0 miles one-way to work, about 10 miles farther than the distance traveled by the average Capital Bikeshare respondent.

**Figure 39**  
**Commute Distance – Bikeshare Users and All Commuters**

(November 2014 Capital Bikeshare respondents n = 3,962, 2013 SOC All Commuters n = 5,122)

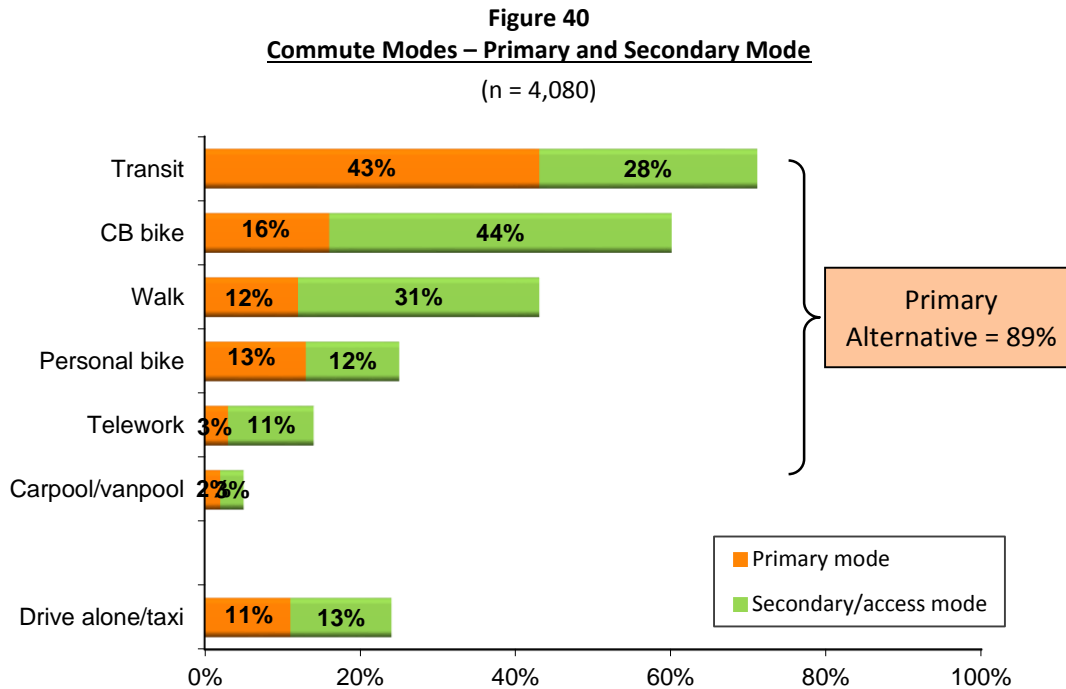


Among bikeshare respondents, those who lived in the District of Columbia traveled shorter distances than did respondents who lived in Arlington or in any other jurisdiction; 70% of District bikeshare respondents commuted fewer than five miles, while only 49% of Arlington bikeshare respondents had such a short trip. Young bikeshare respondents also were more likely to have short commutes; 65% of respondents who were younger than 35 years traveled fewer than five miles to work, compared with 57% of respondents who were between 35 and 44 years and 43% of respondents who were 45 years of age or older.

**Travel Mode Used to Get to Work**

The survey asked respondents what type or types of transportation they used to get to work over the course of a “typical week” and what type they used “most days for the longest distance part” of their commute trip. In combination, these questions indicated the primary mode (most used mode) and other modes that respondents used as secondary modes.

Figure 40 shows percentages of respondents who used each of seven modes as primary modes and the percentages who used them as secondary modes. The figure includes six traditional “on the road” modes for travel to job locations outside the home: transit (train/Metrorail/commuter rail and bus), Capital Bikeshare bike, personal bike, walk, carpool/vanpool, and drive alone. The figure also includes the mode share for telework. This is not actually a travel mode, but is included to show the percentage of weekly work trips that were eliminated through use of this work location option.



**“Primary” Commute Mode** – The overwhelming majority (89%) of respondents used a mode other than driving alone as the primary mode. Four in ten (43%) respondent primarily used public transit (Metrorail, bus, or commuter rail) and 29% primarily bicycled (16% Capital Bikeshare and 13% personal bicycle). Approximately equal shares of respondents walked (12%) or drove alone (11%) as their primary mode. Two percent of respondents primarily carpooled or vanpooled. The remaining 3% of respondents primarily teleworked (worked at home).

These results were very similar to the results found in the 2012 CB survey. In 2012, 12% of respondents drove alone; essentially the same share who drove alone in 2014. Among alternative mode users, the percentages of mode use also were consistent:

<u>Primary Commute Mode</u>	<u>2014</u>	<u>2012</u>
• Public transit	43%	41%
• Bicycle	29%	30%
• Walk	12%	12%
• Public transit	11%	12%
• Carpool/vanpool	2%	2%
• Telework	3%	3%

**“Secondary” Commute Mode** – Figure 40 also shows the percentages of respondents who used each mode as a secondary mode. Capital Bikeshare was the most common secondary mode; 44% of respondents reported using bikeshare in addition to their primary mode. About three in ten respondents reported walking and using public transit as secondary modes. One in ten said they drove alone or rode in a taxi (13%), used personal bike (12%), or teleworked (11%) as a secondary mode.



Table 13 displays the secondary modes that respondents reported using, associated with their primary modes. Capital Bikeshare bicycle was a secondary mode for many respondents. More than half of respondents who primarily rode a personal bicycle (57%) or walked (55%) to work said they used bikeshare as a secondary mode. And 59% of respondents who primarily rode a bus or train to work and 50% who primarily carpooled or vanpooled to work used bikeshare as a secondary mode.

**Table 13**  
**Secondary Modes used for Commuting by Primary Mode**  
 (Multiple secondary modes were permitted and rows will not add to 100%)

Primary Mode	Secondary Modes					
	Personal bicycle	CB bicycle	Walk/run	Bus/train	Drive alone	Telework
- Personal bicycle (n = 550)	0%	57%	25%	60%	13%	10%
- Capital Bikeshare bike (n = 646)	9%	0%	53%	64%	14%	9%
- Walk or run (n = 483)	11%	55%	0%	34%	10%	6%
- Bus or train (n = 1,765)	16%	59%	38%	0%	17%	13%
- Drive alone / taxi (n = 451)	12%	23%	14%	33%	0%	11%
- Carpool/vanpool (n = 70)	14%	50%	36%	63%	31%	13%

Secondary modes could be modes used regularly one or two days per week, but also would include modes used to access a primary mode, such as walking to a bus stop or riding a bicycle to a Metrorail station. And since bikeshare offers a one-way trip option, secondary use of modes also could include using the mode occasionally for either a trip to work or a trip home from work when the other trip was made using transit, walking, taxi, or another one-way option. Because of the many ways in which bikeshare offers travel flexibility, it is difficult to definitively profile commute travel of bikeshare members. The survey included two additional commute travel questions, related to access modes and one-way travel, to shed light on this issue.

Access Mode to Alternative Mode Meeting Points – It was not possible from the survey data to determine definitively if secondary modes were used mainly as occasional modes (e.g., 1 to 2 days per week) or as access modes to the primary modes. The question of “modes used” instructed respondents to indicate all the modes they use in a typical week. But 77% of respondents said they used their primary mode four or more days per week and respondents used their primary mode an average of 4.2 days per week, so it seems likely that a large share of secondary mode use would have been to access primary alternative modes. Table 14 presents the responses to a question posed to respondents who said they rode public transit or carpooled or vanpooled to work asking how they traveled to the bus stop/train station or where they met their rideshare partner.

A very large majority (87%) walked to the transit / rideshare meeting point. Since only 2% of all respondents used a carpool or vanpool for their commute and 43% rode transit, the majority of respondents who answered this question would have answered as transit riders. Thus, in practical terms, the access mode results exhibited in Table 14 reflect access to transit and the high walk share is consistent with the high density of transit routes/stops in the Capital Bikeshare service area.

**Table 14**  
**Means of Getting from Home to Alternative Mode Meeting Place**

(n = 3,334, multiple responses permitted)

Access Mode to Alternative Mode	Percentage
Walk	87%
Capital Bikeshare bike	24%
Drive to the meeting point and park vehicle	6%
Personal bike	5%
Taxi / dropped off	3%
Picked up at home	2%

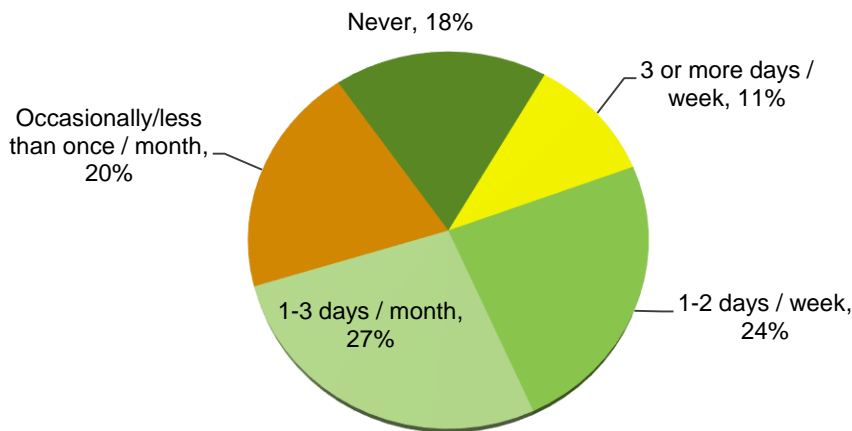
Nearly one-quarter (24%) of respondents said they used Capital Bikeshare to access transit/ridesharing. As noted in Figure 40, which defined primary and secondary use of each mode, 44% of respondents reported using bikeshare as a secondary mode. Thus about half of the secondary bikeshare use was for primary mode access, in which it would be used in combination with the other mode, and half was for occasional use as the single commute mode for the trip.

Five percent said they used a personal bicycle as their access mode. Six percent drove to the meeting location and left their vehicles during the day. A small share used a taxi or were dropped off (3%). Two percent said they were picked up at home. These respondents also could have been riding with a household member, so they would leave together.

Use of Different Type of Transportation for the Return Trip – Finally, respondents were asked how often they used a different type of transportation to get home from work than they had used to travel to work (Figure 41). About four in ten said they never (18%) used a different type of transportation to get home or did so occasionally but less than one time per month (20%). About one quarter of respondents used a different return transportation mode a few days per month.

The remaining 35% of respondents regularly used a different mode to get home; 24% used a different mode one or two days per week and 11% used a different mode nearly every day (3 or more days per week).

**Figure 41**  
**Frequency of Using a Different Type of Transportation for Trip to Work and Trip Home from Work**  
 (n = 4,046)

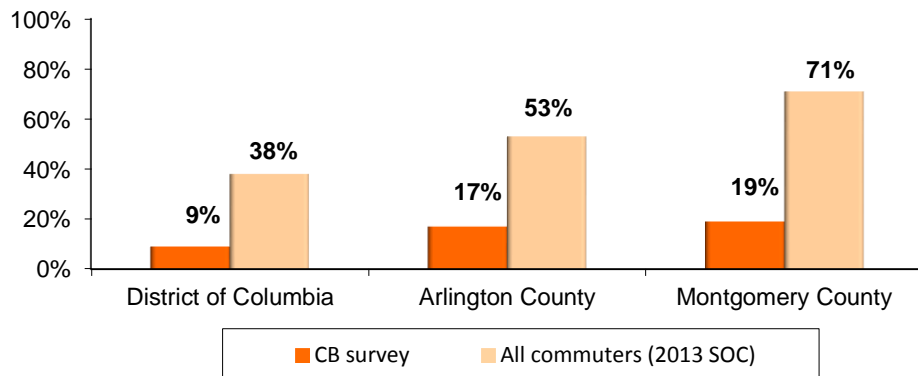


Primary Commute Mode for Capital Bikeshare Members vs All Regional Commuters – The 11% share of survey respondents who primarily drove alone to work was well below the drive alone mode share for all commuters in the Washington region. According to the 2013 State of Commute survey, over the entire region, about 68% of all commuters drove alone to work most days. Even accounting for the fact that the majority of bikeshare respondents lived the District of Columbia, Arlington County, or Montgomery County, the drive alone rate of bikeshare users was quite low.

Figure 42 shows the drive alone rates by home area for bikeshare survey respondents and for all commuters in these three jurisdictions. Only 9% of bikeshare survey respondents who lived in the District of Columbia drove alone to work, compared with 38% of all commuters who lived in the District. The disparities in drive alone rates were similarly striking for the two other jurisdictions that had measurable bikeshare respondents.

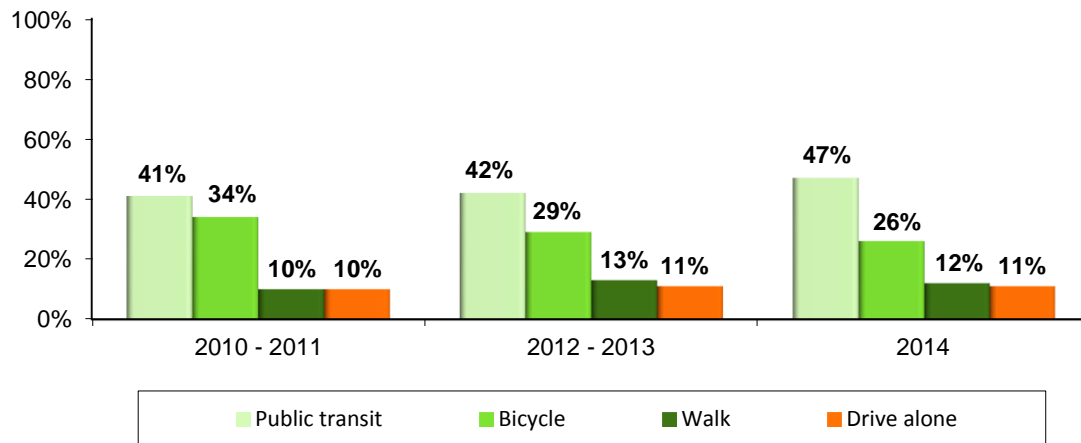
**Figure 42**  
**Drive Alone Mode Share – Bikeshare Respondents vs All Commuters by Home Location**

(Bikeshare: DC n = 2,547, Arlington n = 346, Montgomery n = 199)  
 (2013 SOC survey: DC n = 531, Arlington n = 530, Montgomery n = 519)



Commute Mode by When Joined Capital Bikeshare – A slightly higher share of early-adopter bikeshare members said they primarily bicycled to work, when compared with members who joined more recently; 34% who joined Capital Bikeshare during 2010 or 2011 primarily bicycled to work, compared with 29% of respondents who joined during 2012 or 2013, and 26% who joined during 2014 (Figure 43).

**Figure 43**  
**Primary Commute Mode of Bikeshare Respondents – by When Joined Capital Bikeshare**  
 (2010-2011 n = 1,042; 2012-2013 n = 1,645; 2014 n = 1,370)



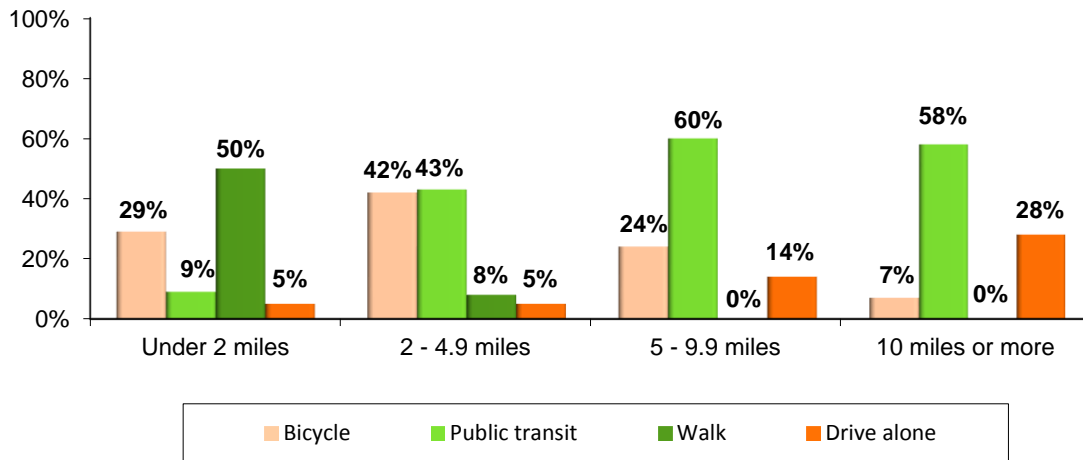
By contrast, recent members used transit at a slightly higher rate; 41% of the early adopters rode transit to work, compared with 42% of respondents who joined in 2012 or 2013 and 47% who joined in 2014. There were no significant differences among the three groups in the percentages of respondents who walked or drove to work. These results suggest that while early adopters of the bikeshare program were disproportionately bicyclists, the mode distribution has since stabilized and Capital Bikeshare is attracting an increased share of transit riders.

Commute Mode by Travel Distance – The distance that respondents travel to get to work also was a factor in their primary commute mode (Figure 44). Walking (50%) and bicycle (29%) were the top choices of respondents who lived less than two miles from work. Bicycling (42%) also was a common mode for respondents who lived between 2.0 and 4.9 miles from work, but an equal share (43%) of respondents in this group rode public transit. Six in ten (60%) respondents who traveled between 5.0 and 9.9 miles to work choose transit; the remaining respondents in this distance group were divided between driving alone (14%) and bicycling (24%). Respondents who traveled the longest distance, 10 miles or more, primarily used public transit (58%) or driving alone (28%), but 7% said they primarily bicycled.

Figure 44

**Primary Commute Mode of Bikeshare Respondents – by Commute Distance**

(Under 2 miles n = 645, 2 – 4.9 miles n = 1,755, 5 – 9.9 miles n = 820, 10 miles or more n = 728)



**Bicycle Commuting by Demographic Characteristics** – A few differences were noted in bicycle commute use by respondents' demographic characteristics:

- District of Columbia bikeshare members bicycled to work at a higher rate (34%) than did respondents who lived in either Arlington County (29%) or Montgomery County (12%).
- Men were more likely than were women to bicycle to work; 32% of male respondents primarily bicycled, compared with 27% of female respondents.
- A slightly higher proportion of young respondents reported bicycling; 31% of respondents who were younger than 35 said bicycling was their primary commuting mode, compared with 29% of respondents between 35 and 54 years old, and 25% of respondents who were 55 or older.

**Commute Mode Changes in the Past Year**

**All Commute Mode Changes Made** – One survey objective was to identify changes bikeshare users had made in their travel since joining Capital Bikeshare. The report already has discussed overall changes in mode use, annual driving miles, and vehicle availability. Employed respondents were asked if, in the past year, they had made any of five types of changes in how they got to work.

More than half (54%) of employed respondents said they made at least one change in their commuting pattern (Table 15). The largest share of respondent who made a change started bicycling to work or increased how often they biked to work (41%). Fifteen percent said they started walking or walked to work more often and 11% said they started or increased their use of public transit (Metrorail, bus, or commuter rail). Six percent started teleworking or increased their telework days and 1% made a change to carpool or vanpool. Note that many respondents reported making more than one change. Both the overall rate of change and the percentages of respondents who reported each type of change in the past year were nearly identical in the November 2014 survey to what was reported in the November 2012 CB survey.

**Table 15**  
**Commute Mode Changes Reported in the Past Year**  
 (Multiple responses permitted for types of changes)

Commute Changes	2014 CB Survey (n = 4,125)	2012 CB Survey (n = 4,864)
<b>No changes in commute</b>	46%	43%
<b>Change in commute</b>	54%	57%
- Start bicycling to work / ride a bike more often	41%	44%
- Start riding transit to work / ride transit more often	11%	11%
- Start walking to work / walk more often	15%	13%
- Start teleworking / telework more often	6%	8%
- Start carpooling/vanpooling or carpool/vanpool more often	1%	2%

Reported Change vs Observed Changes – Respondents were asked to check all the changes they had made in the past year. To assess the impact of the changes on respondents' typical travel, their primary and secondary modes at the time of the survey were compared against the travel patterns a year ago to determine the changes they had continued to the time of the survey. Table 16 compares the percentages of respondent who said they made a change ("reported" change), compared with the percentage of respondents whose changes were confirmed by the travel modes they reported actually using ("observed" change).

**Table 16**  
**Reported Commute Mode Changes and Observed Commute Mode Changes in Past Year**  
 (Multiple responses permitted for both reported and observed changes)  
 (n = 4,125)

Commute Changes	Reported Change	Observed Changes
<b>No changes in commute</b>	46%	56%
<b>Change in commute</b>	54%	44%
- Start / increase bicycling	41%	32%
- Start / increase transit	11%	10%
- Start / increase walking	15%	12%
- Start / increase telework	6%	6%
- Start / increase carpool or vanpool	1%	1%

The overall observed change of 44% was lower than the 54% of respondents who reported starting or increasing use of an alternative mode. This likely means that some respondents made a temporary change, in which they tried using the mode, but stopped using it before the survey was conducted. Another possible explanation is that some respondents started or increased use of some modes to access another mode. The observed change in transit use (10%) was quite close to the reported change (11%). But the observed changes in biking was well below the reported changes.

Bike Commute Changes – The analysis explored further the specific types of changes that respondents had made in their use of bicycle for commuting. A comparison of the current and previous modes used by respondents resulted in classifying respondents into one of five bike change categories, with the distribution of respondents by change category as noted below:

<u>Type of Bike Change</u>	<u>Percentage of Respondents</u>
• <u>Primary mode change</u> – Started or increased use of bike as primary mode	13%
• <u>Secondary mode change</u> – Started using bike as a secondary mode	19%
• <u>Temporary/occasional change</u> – Tried biking or started biking as an occasional mode	4%
• <u>Continued use</u> – Was biking before and continued biking with no changes	35%
• <u>No bike use</u> – Does not use bike now and didn't use bike before	29%

About one-third of respondents made an observed change to bike; 13% started using bike as their primary mode or increased the number of days they used bike as a primary mode and 19% started using bike as a secondary or access mode. Four percent started using bike as an occasional mode or tried biking temporarily. About one-third of respondents had been biking to work for at least a year and did not make any changes in how often they biked. The remaining 29% of respondents reported that they did not use a bike for commuting at the time of the survey and did not make any changes in their commuting pattern in the past year.

Bike Commute Changes by Sex – A higher percentage of female respondents than male respondents made bike changes. Forty-two percent of women made either a primary change (14%), secondary change (22%), or a temporary/occasional change (6%). By contrast, 36% of men made a change: primary – 14%, secondary – 19%, and temporary/occasional – 3%. Bike changes were statistically the same for other demographic subgroups.

Bike Commute Changes by Home and Work Locations – The analysis also noted differences in bike commute changes by where respondents lived and worked (Figure 45).

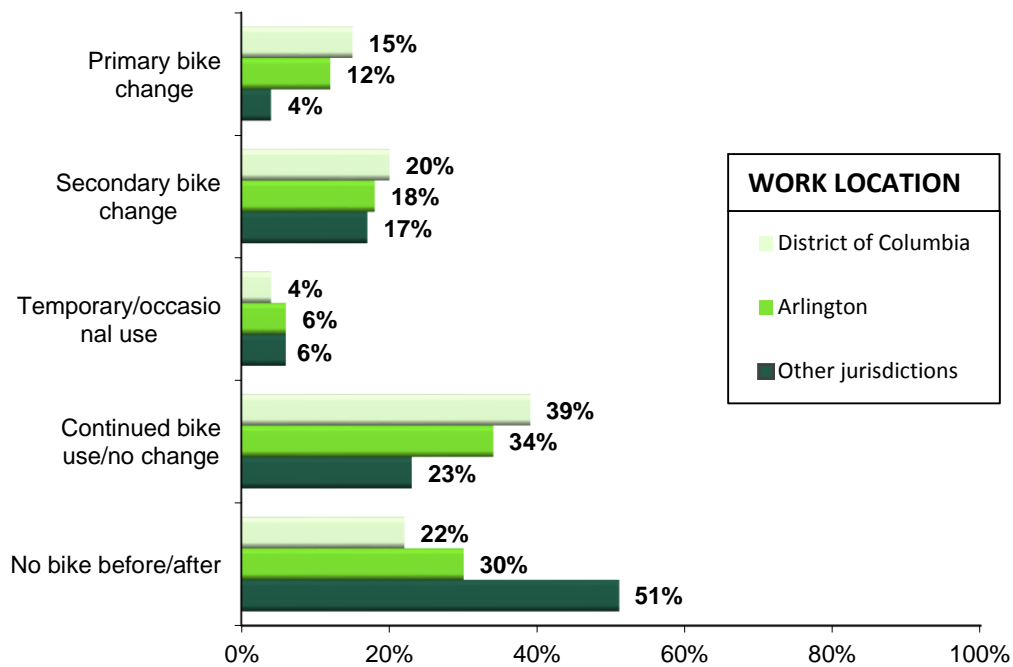
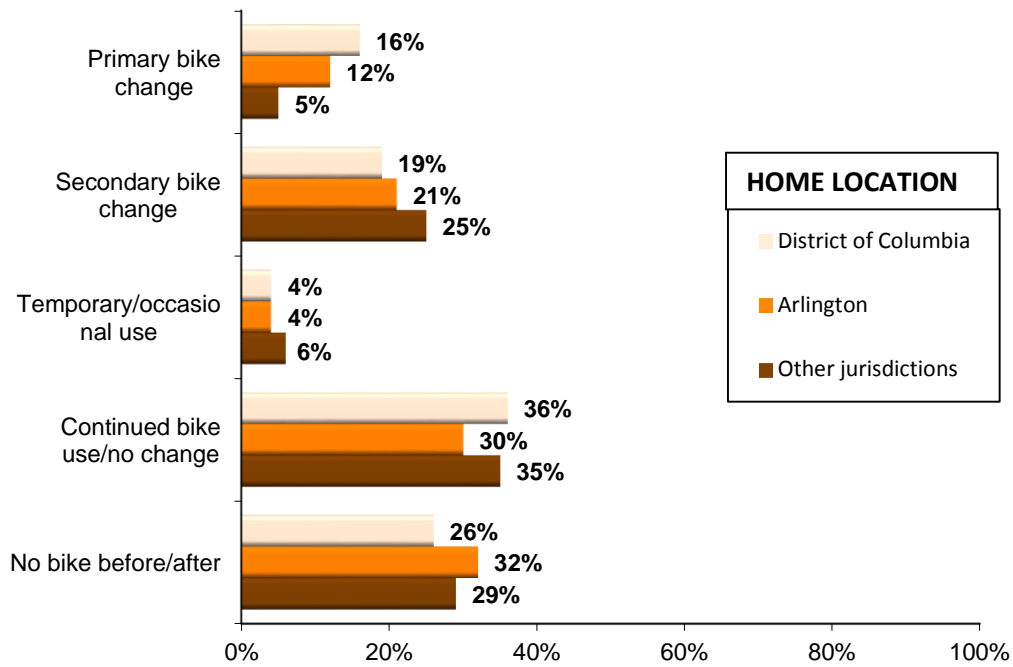
- *Home Location* – Respondents made changes overall at about the same rate, regardless of where they lived, but respondents who lived in the District of Columbia or in Arlington made primary bike changes at a higher rate than did other respondents. About 16% of District residents and 12% of Arlington residents made a primary bike change, compared with 5% of residents of other areas. Residents of areas other than the District and Arlington made more changes to bike as a secondary mode.
- *Work Location* – Respondents who worked in the District of Columbia made both primary and secondary bike changes at a higher rate than did other respondents. They also were more likely to have been biking a year ago, so the share of “continued, no change” respondents was very high for District workers. Respondents who worked in a jurisdiction other than the District or Arlington were least likely to have made bike changes. They also were less likely to have been biking a year ago, consequently, the share of respondents in this worker group who were classified as “no bike before or after” was quite high (51%).

**Figure 45**

**Bike Commute Change in Past Year – by Home Location and Work Location**

(Home Location: District of Columbia n = 2,557, Arlington n = 346, Other jurisdictions n = 528)

(Work Location: District of Columbia n = 2,547, Arlington n = 320, Other jurisdictions n = 490)

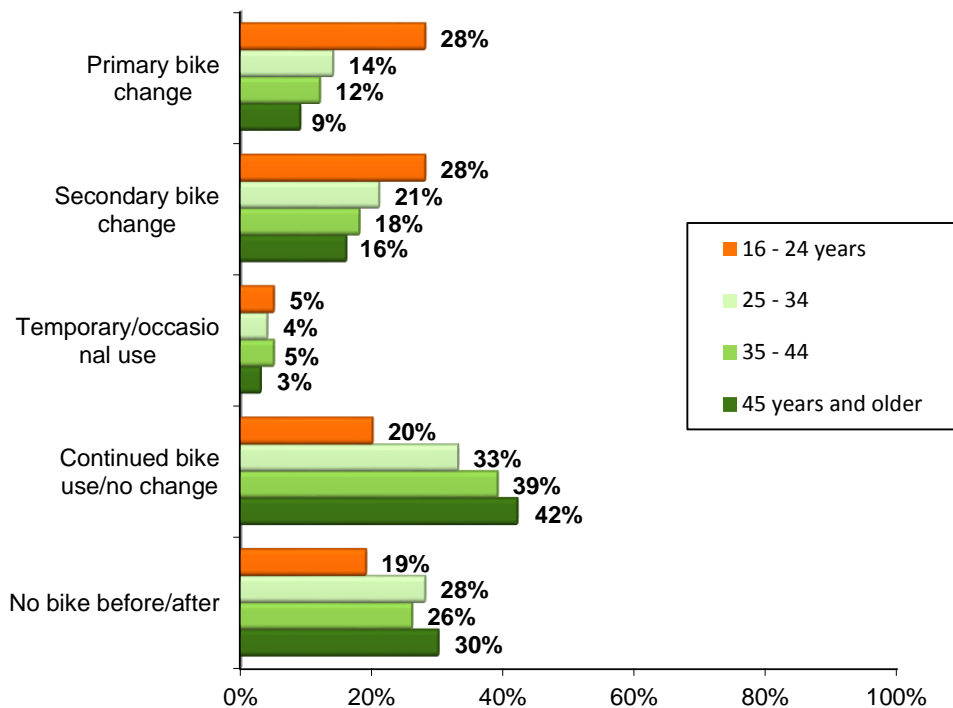




Age – The most dramatic difference in bike changes was a distinct pattern of bike commute change by respondents’ age (Figure 46). Young respondents were more likely than were older respondents to have made a bike change; about six in ten respondents who were between 16 and 24 made a primary or secondary bike change. Rates of all bike changes declined with increasing age. But the share of respondents who had been biking to work a year earlier and who made no bike changes increased with age. So overall, the shares of respondents in each age group who were biking to work at the time of the survey was less dramatically different that the change percentages might suggest.

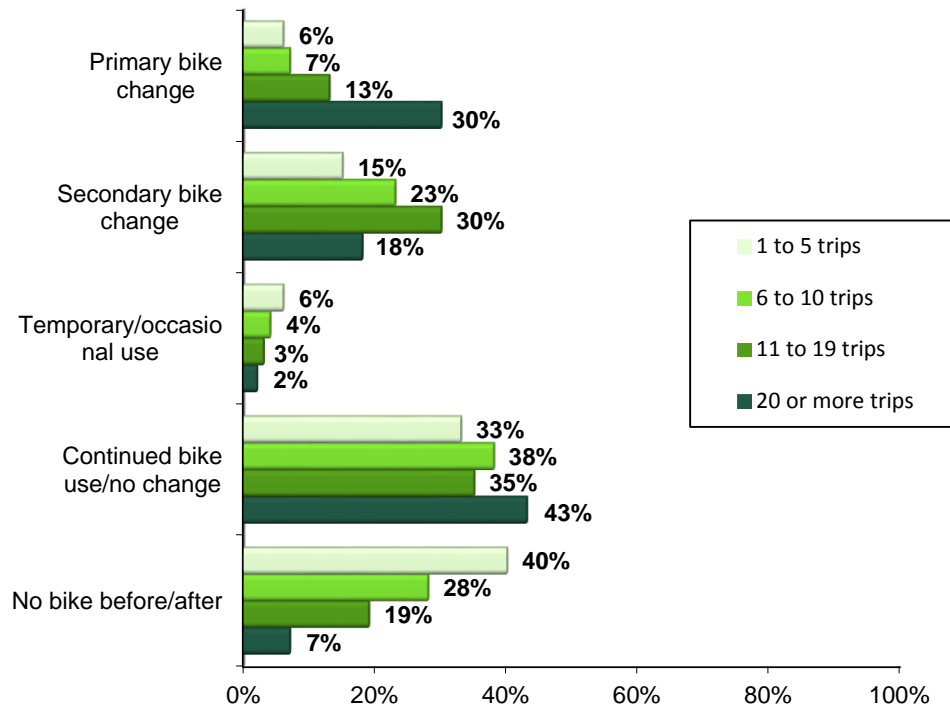
**Figure 46**  
**Bike Commute Change in Past Year – by Age**

(16-24 years n = 285, 25-34 n = 1,964, 35-44 n = 800, 45 and older n = 760)



Commute Changes by Frequency of Capital Bikeshare Use – The incidence of bike commute changes also exhibited a marked pattern when analyzed by the frequency of bikeshare use. Figure 47 illustrates very definitively that respondents who used bikeshare the most were much more likely to have made a primary bike change. It also is logical that the highest share of secondary bike changes would be in a frequent bikeshare use group. It also is not surprising that very frequent bikeshare users also would have a high share of continued bike use compared to a year ago, since many frequent users joined Capital Bikeshare more than one year ago.

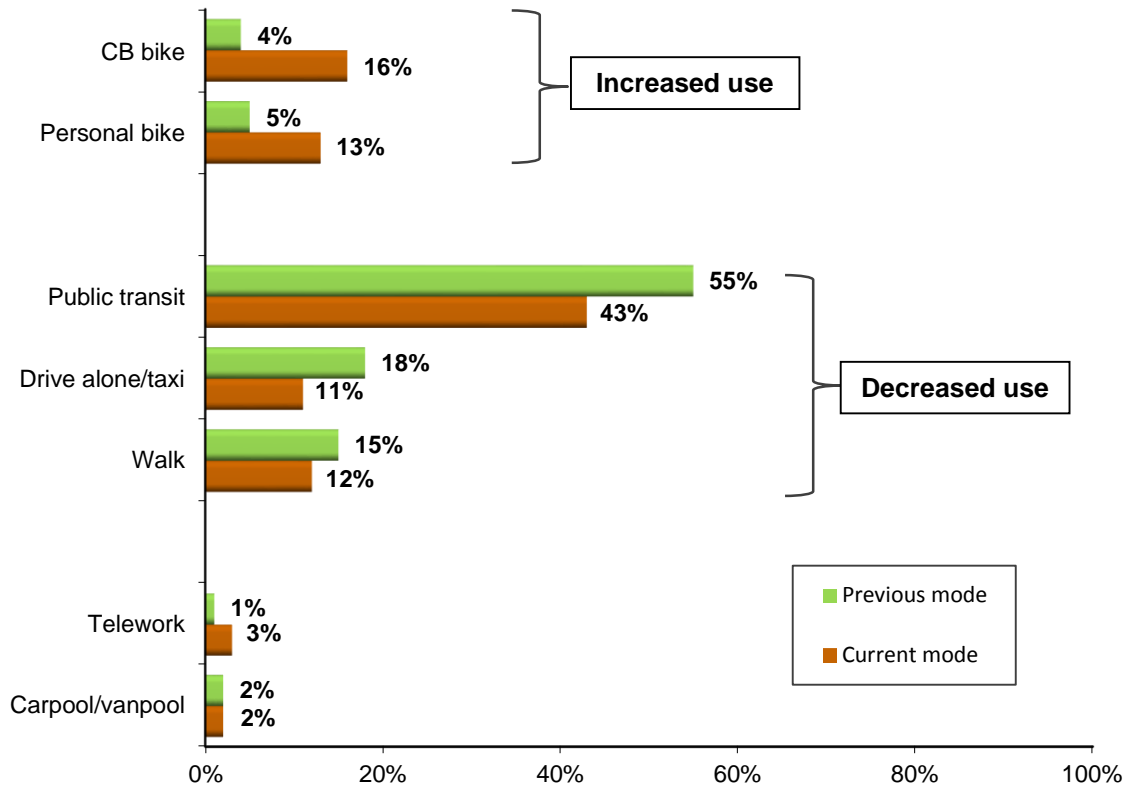
**Figure 47**  
**Bike Commute Change in Past Year – by Frequency of Bikeshare Use**  
 (1-5 trips n = 1,401, 6-10 trips n = 770, 11-19 trips n = 653, 20 or more trips n = 969)



Previous Mode Compared to Current Mode – Finally, Figure 48 displays a comparison of the current primary mode distribution with the previous primary mode distribution one year ago, with both the current and previous mode distributions including respondents who made commute changes and those who did not make changes.

Before respondents made their commute changes, about one in ten (9%) respondents primarily bicycled to work. At the time of the survey, 29% of respondents primarily bicycled to work, resulting in a 20 percentage point increase in use of bike commuting. The increased bicycle use shifted commute trips primarily from transit, which dropped from 55% of primary mode use to 43%, and from driving alone/taxi, which fell from 18% of primary mode to 11%. A small drop also was noted in walking trips, suggesting some commuters shifted trips from this mode to biking.

**Figure 48**  
**Comparison of Current and Previous Primary Modes – Percentage of Respondents**  
 (n = 4,080)

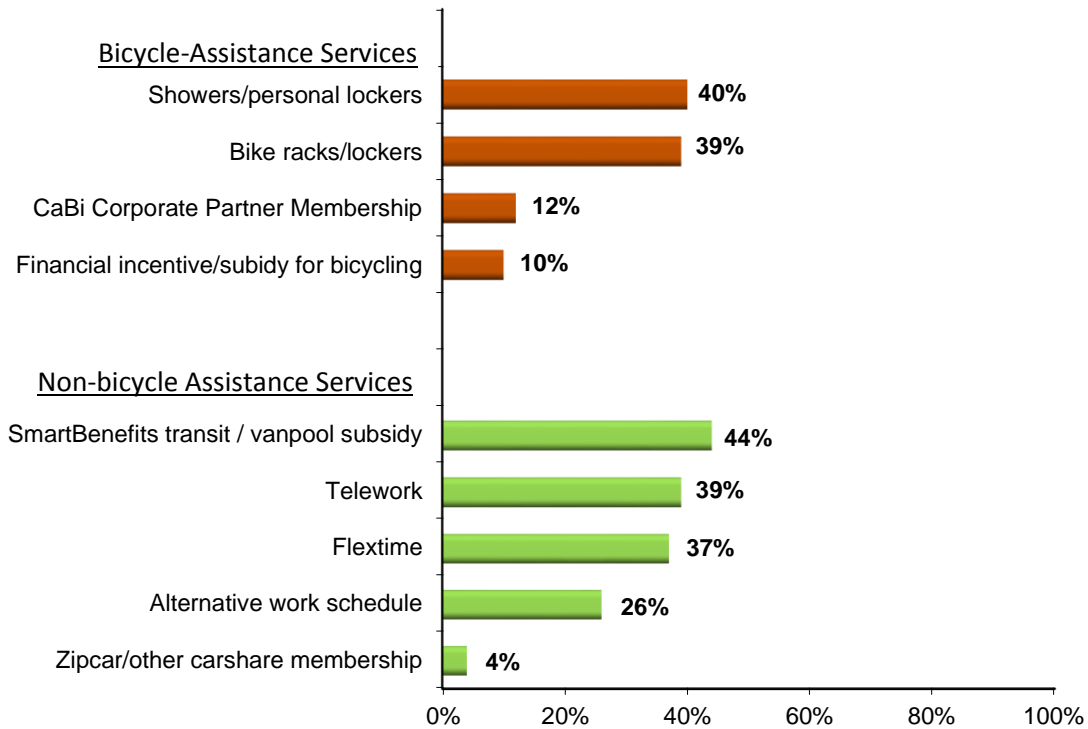


**Employer Offers Bike Services and Other Commute-Assistance Services**

Capital Bikeshare Corporate Partner Membership – Numerous research studies have documented that commute services offered by an employer can influence employees’ commute mode choice. To test this influence among CB members, employed respondents were shown a list of nine commute assistance services and were asked if their employer offered any of the services and if so, if they had used the services. Figure 49 presents these results, divided into services related to bicycle commuting and services related to other types of transportation.

*Bicycle-Assistance Services* – Fifty-four percent of all employed respondent report having access to at least one bike-support service. Approximately four in ten said their employers offered showers/personal lockers (43%) or bike racks/lockers (39%). Ten percent said the employer offered a financial incentive/subsidy for employees who bicycle to work. Twelve percent of respondents said their employer offered a Capital Bikeshare Corporate Partner Membership, approximately the same share as noted this service in 2012 (11%), but a significant increase from the 6% measured in the 2011 survey.

**Figure 49**  
**Commute Services Offered by Employer**  
 (n = 3,979)



Respondents who worked in Arlington County, Alexandria, and the District of Columbia had greater access to bicycle services than did bikeshare respondents who worked in other jurisdictions. As shown below, about six in ten workers in these jurisdictions mentioned having access to one or more bicycle services, compared with about half of bikeshare survey respondents who worked in other areas.

But as also indicated below, bikeshare survey respondents were twice as likely to report access to bicycle services (56%) as were all commuters region-wide (27%) and more likely to have bicycle services than were other commuters in the jurisdictions where they worked.

**Bike Services Available**

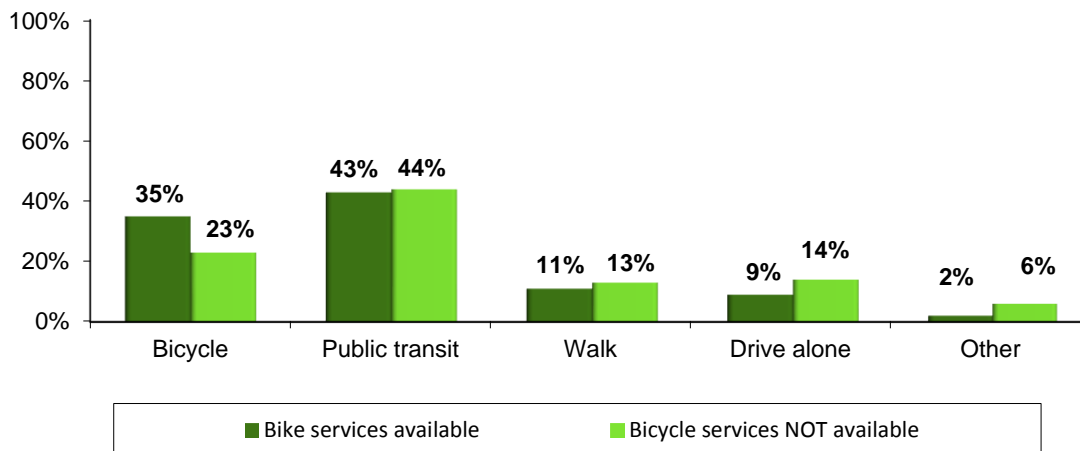
	<u>Capital Bikeshare</u>	<u>2013 SOC</u>
<u>Overall</u>	56%	27%
– Alexandria, VA	56%	22%
– Arlington Co., VA	59%	35%
– District of Columbia	67%	40%
– Montgomery / Prince George's Co., MD	49%	17%
– Other areas	43%	22%

*Other Commute-Assistance Services* – Figure 49 also shows the percentages of employers that offered non-bicycle commute-assistance services. About four in ten (44%) said the employer offered a SmartBenefits transit or vanpool subsidy. Similar shares of respondents said telework (39%) and flextime (37%) were available to employees at the worksite. About one-quarter (26%) had access to alternative work schedules. Four percent of respondents said their employer offered a Zipcar or other carshare program membership.

Primary Commute Mode by Bicycle Services Available – Respondents who had access to bicycle-support services bicycled to work at a higher rate than did respondents who did not have access to these services (Figure 50). A third (35%) of respondents who said bicycle services were available bicycled to work, compared with 23% of those who did not have bicycle services.

**Figure 50**  
**Primary Commute Mode of Bikeshare Respondents –**  
**by Availability of Bicycle Services at Worksite**

(Bicycle services available n = 2,151, Bicycle services not available n = 1,783)



## Satisfaction with Bikeshare

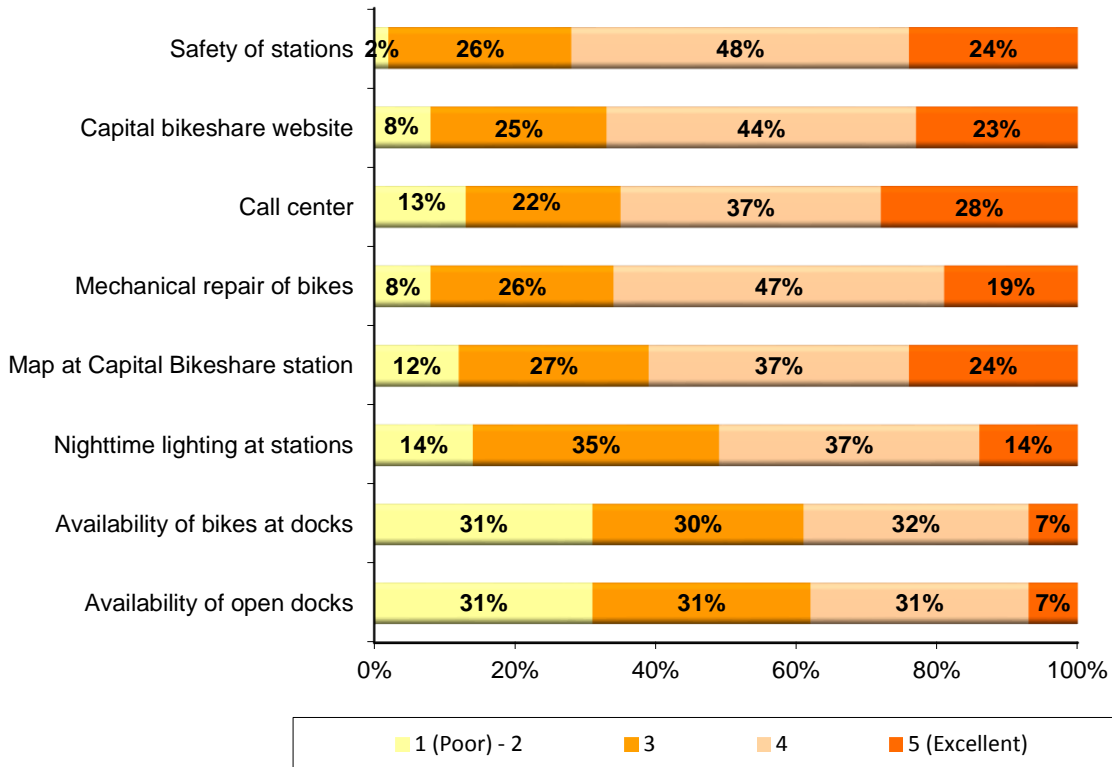
The final section of the survey asked respondents to rate the quality of various features of Capital Bikeshare, to report problems that they had had in using Capital Bikeshare, and to offer suggestions for how Capital Bikeshare could be improved.

### Satisfaction with Bikeshare Features

Respondents were asked to rate their satisfaction with a set of individual Capital Bikeshare features, with ratings ranging from a 1 (poor) to 5 (excellent) for each feature (Figure 51). Note that the percentages exclude respondents who checked “don’t know” to a feature; since most of these respondents would not have used that feature, they could not comment on it. Don’t know responses ranged from about 7% to 24%, except for the call center; 47% of respondents had not used this service.

**Figure 51**  
**Capital Bikeshare Ratings on Program Features**

(Safety n = 3,564; Website n = 3,765; Call center n = 2,151; Mechanical repair n = 3,672; Map n = 3,096; Nighttime lighting n = 3,101; Bikes at docks n = 4,054; Open docks n = 4,054)



Respondents gave generally high marks to most bikeshare features. At least six in ten respondent gave ratings of 4 or 5 (Excellent) to safety of stations (72%), the Capital Bikeshare website (67%), call center (65%), mechanical repair of bikes (66%), and the map at Capital Bikeshare stations (61%). Respondents were slightly less satisfied with nighttime lighting at stations; only 51% of respondents give a rating of 4 or 5 to this feature. Respondents were least satisfied with the availability of bikes at docks and the availability of open docks when they were returning bikes; these features were rated as a 4 or 5 by only 39% and 38% of respondents, respectively.

Ratings on these features were quite consistent across all demographic groups; there were no statistical differences by any of the following: when respondent joined Capital Bikeshare, sex, or employment status. The only notable statistical differences were as follows:

Age – Differences were noted for four features, with older respondents giving higher ratings:

- *Availability of Bikes at Docks* – Younger respondents were much less satisfied with this feature than were older respondents; only 36% of respondents under 35 years old gave a high rating for this feature, compared with 41% of respondents 35 to 54 years, and 53% of respondents who were 55 year or older.
- *Availability of Open Docks* –The age pattern noted above was evident also for this feature. 42% of respondents who were 35 years and older gave a 4 or 5 rating, compared with just 34% of respondents who were younger than 35 years old.

- *Map at Capital Bikeshare Stations* – Two-thirds (66%) of respondents who were 35 years or older rated this feature a 4 or 5, while only 57% of respondents who were under 35 gave a high rating.
- *Mechanical Repair of Bikes* – Seven in ten (71%) respondents 45 years and older gave a 4 or 5 rating, compared with 65% of respondents who were between 25 and 44 and 63% of respondents under 25 years old.

Race/Ethnicity – Differences by race/ethnicity were noted for three Capital Bikeshare feature, with White respondents always giving higher ratings:

- *Capital Bikeshare website* – Seven in ten (69%) White respondents gave a rating of 4 or 5, compared with 61% of Non-white respondents.
- *Safety of stations* – Three-quarters (73%) of White respondents gave a high rating, compared with 67% of Non-white respondents.
- *Mechanical repair of bikes* – Almost seven in ten (68%) White respondents gave a rating of 4 or 5, compared with 58% of Non-white respondents.

Income – One feature was rated differently by respondents of different incomes, with satisfaction increasing with increasing income:

- *Safety of stations* – Three-quarters (75%) of respondents with incomes of \$100,000 or more gave a rating of 4 or 5 for this feature, compared with 71% of respondents whose incomes were between \$50,000 and \$99,999 and 67% of respondents with incomes below \$50,000.

Frequency of Bikeshare Use – A difference was noted for one feature, with frequent riders giving lower ratings:

- *Mechanical repair of bikes* – Respondents who used bikeshare frequently gave lower ratings on this feature; 68% of respondents who made fewer than 11 monthly bikeshare trips rated this feature a 4 or 5 rating, compared with 65% of respondents who made between 11 and 19 trips and 62% who made 20 or more bikeshare trips in the past month.

Home Location – Differences were noted for two features, with District residents giving much lower ratings:

- *Availability of bikes at docks* – Only 32% of District residents gave a high rating for this feature, compared with 61% of Arlington residents, and a similar share of six in ten respondents in other jurisdictions.
- *Availability of open docks* – Only 33% of District residents gave a rating of 4 or 5 for this feature, compared with 60% of Arlington residents and about half of respondents in other jurisdictions.

### **Interest in Possible Capital Bikeshare Service Options**

This section of the survey asked respondents to rate their potential interest in three new service options that Capital Bikeshare staff were considering. Results for the following questions are presented in Table 17:

- Pay-per-ride Membership Option – “If Capital Bikeshare offered a low-cost pay per ride option with no membership fee required, how likely would you be to use it?”
- Common Card for Bikeshare and Transit – “If you could use a single card (e.g., Capital Bikeshare fob or SmarTrip card) to check out Capital Bikeshare bikes and ride public transit service, how interested would you be in using this single card system?”
- Near-field Communication – “If you have a smartphone equipped with near-field communication (NFC) functionality, how interested would you be in using it to check out Capital Bikeshare bikes?”

**Table 17**  
**Means of Getting from Home to Alternative Mode Meeting Place**

(n = 3,334, multiple responses permitted)

Service Option	Percentage
<b>Pay-per-ride Membership</b>	
- Not at all likely	34%
- Somewhat likely, I would consider it	25%
- Very likely	7%
- Depends on the cost per ride	28%
- Don't know	6%
<b>Single Bikeshare / Transit Card</b>	
- Not interested	6%
- Somewhat interested	31%
- Very interested	60%
- Don't know	3%
<b>Smartphone – Near-field communication</b>	
- Not at all interested	8%
- Somewhat interested	28%
- Very interested	47%
- Don't know if phone is equipped with this capability	17%

Pay-per ride Membership Option – Seven percent of respondents said they were very likely to use this option, if it were offered. One-quarter (25%) said they would be somewhat likely to use it or would consider it, but another quarter (28%) said they would need to know the per-ride cost before they could provide an answer. Presumably, some of these respondents would find the cost reasonable. About one-third said definitively that they would not use this option.

Respondents who were infrequent CB users reported much greater interest in this service than did frequent riders. Four in ten respondents who used CB five or fewer times in the past month reported some interest in the service (30% somewhat interested, 10% very interested), compared with 27% who used CB 11 to 19 times (23% somewhat interested, 4% very interested) and only 19% who used CB 20 or more times per month (17% somewhat interested, 2% very interested). Older respondents also expressed slightly greater interest in the service; 36% of respondents who were 45 years or older vs 31% of respondents who were younger than 35. There were no remarkable differences interest by other demographic characteristics.

Single Bikeshare/Transit Card – A very high share of respondents expressed interest in this service; 60% said they were very interested and 31% were somewhat interested. Only one in ten respondents said they were not interested (6%) or didn't know. For this service, younger respondents expressed slightly greater interest in the service; 94% of respondents who were under 35 years or older said they were somewhat or very interested, compared



with 86% of respondents who were between 35 and 54 years old and just 79% of respondents who were 55 or older. The only other notable difference in sub-population response was that respondents who rode transit to get to work noted greater interest than did other respondents; 63% of transit riders said they were very interested, compared with 57% of respondents who biked or walked to work and 60% of respondents who drove alone to work.

*Smartphone-Near-field Communication* – This service option also received substantial expression of interest. Three-quarters of respondents were either very interested (47%) or somewhat interested (28%) in this service. Only 8% said they were not at all interested. But 17% of respondents couldn't give an opinion because they didn't know if their phones were equipped with this communication capability.

There was no difference in interest in this service option by the frequency of CB use, but differences were noted by the gender and age of the respondents. Nearly eight in ten (79%) of male respondents noted interest in this service, compared with 69% of female respondents. But women were more likely to say that they didn't know if their phone was equipped with this capability (13% of men vs 23% of women). And 79% of respondents who were under 35 years said they were somewhat or very interested, compared with 71% of respondents who were 45 or older. But as with gender, older respondents were more likely to say they didn't know if their phones had this capability.

### **Bikeshare Service Problems / Issues**

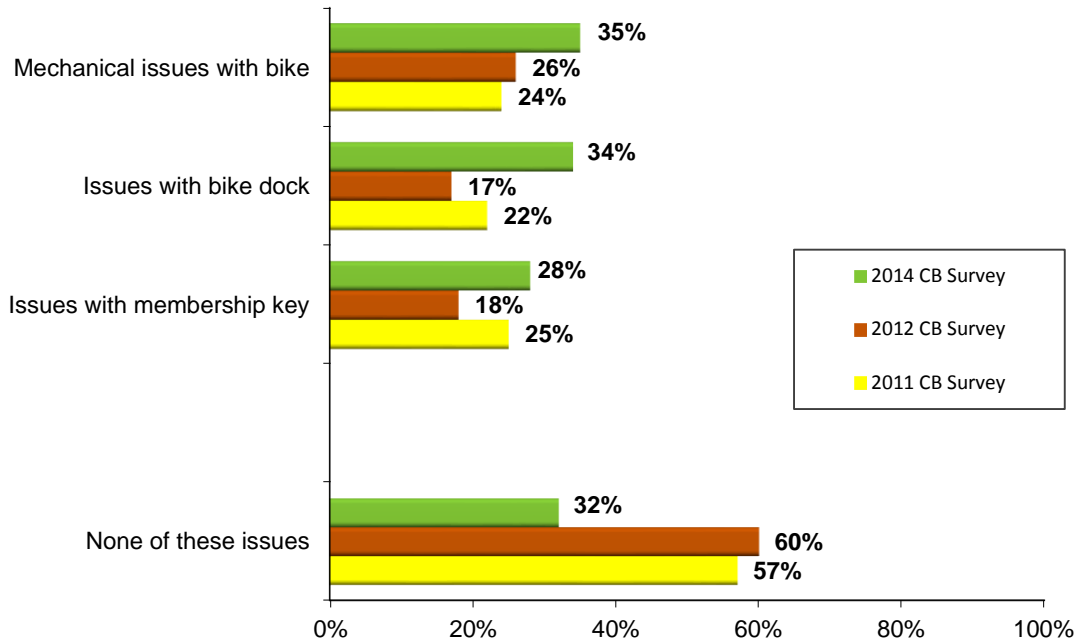
Finally, all respondents were asked if they had any problems with three particular elements of the Capital Bikeshare service:

- Accessing a bike with a Capital Bikeshare membership key
- Mechanical issue with retrieving or returning a bike to a Capital Bikeshare dock
- Mechanical issues with a bike

Respondents who indicated they had one of these problems were asked to describe the problem. Figure 52 shows the percentage of respondents who mentioned each possible situation. In 2014, about one-third (32%) of respondents said they had not encountered any of the three issues since joining Capital Bikeshare. The remaining 68% said they had encountered at least one of the issues. About one-third (35%) had a mechanical issue with a bike or with an issue with a bike dock (34%). Twenty-eight percent had issues with a membership key.

Figure 52 also presents the results for this question from the 2011 and 2012 surveys. The overall percentage of respondents who reported a problem was considerably higher in 2014 (68%) than in 2012 (40%) or 2011 (43%). The incidence of individual problems also increased from 2012 to 2014. Bike dock issues seemed to be particularly more common than they had been in 2012; 34% of respondents cited this issue in 2014, compared with 17% in 2012.

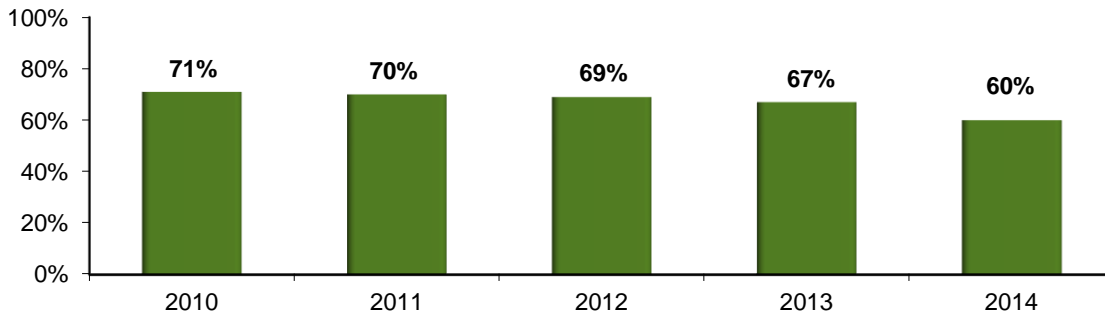
**Figure 52**  
**Incidence of Issues with Capital Bikeshare Service – 2011, 2012, and 2014 Surveys**  
 (2011 n = 5,260, 2012 n = 3,731, 2014 n = 4118)



Issues Encountered by Respondent Characteristics – Two characteristics were associated with the incidence of problems: when the respondent joined Capital Bikeshare and how often the respondent used bikeshare.

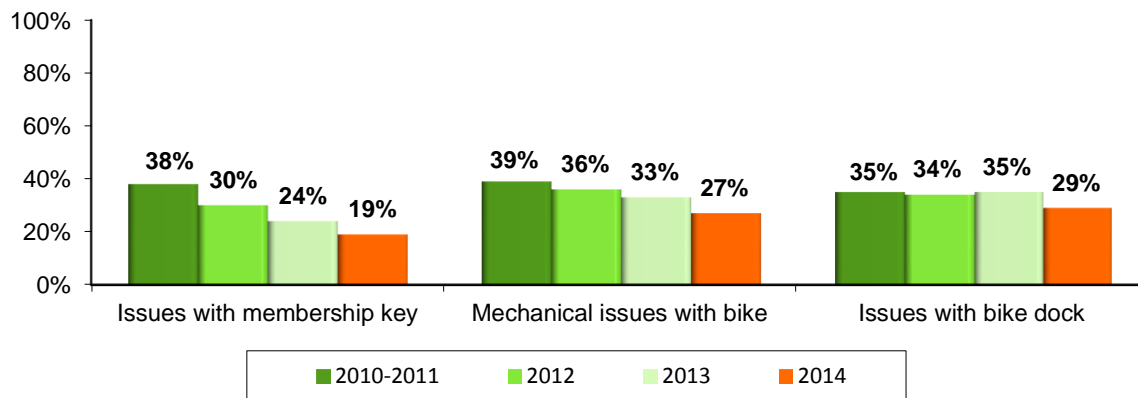
*Problems Encountered by When Respondents Joined Capital Bikeshare* – Figure 53 presents the percentages of respondents who encountered any issue by when they joined Capital Bikeshare. The pattern is clear; respondents who joined in the early years of the program had encountered more problems overall than had respondents who joined more recently. It is reasonable to assume that the system has become more trouble-free, but some of the greater incidence of issues could reflect longer-term members’ greater exposure to the system.

**Figure 53**  
**Incidence of Any Issues with Capital Bikeshare Service – by When Joined Capital Bikeshare**  
 (2010 n = 509, 2011 n = 506, 2012 n = 681, 2013 n = 852, 2014 n = 1,300)



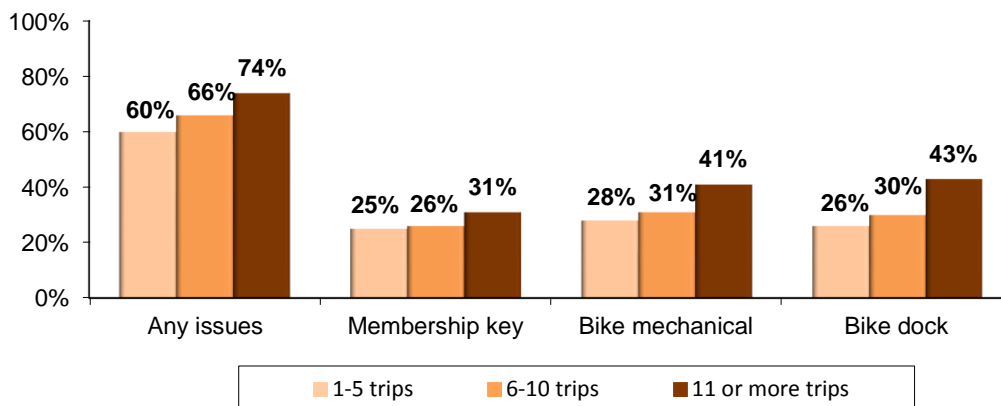
Members who joined more recently were less likely to note a problem with a membership key or a mechanical issue with a bike than were members who joined earlier (Figure 54). Only 19% of members who joined in 2014 had encountered a problem with a key, compared with 30% who joined in 2012 and 38% who joined in the first two years of the program. And only a quarter (27%) of 2014 members noted a mechanical problem with a bike, compared with 36% who joined in 2012 and 39% who joined in 2010-2011. Issues with docks appear to have changed only slightly.

**Figure 54**  
**Incidence of Specific Issues with Capital Bikeshare Service – by When Joined Capital Bikeshare**  
 (2010 n = 509, 2011 n = 506, 2012 n = 681, 2013 n = 852, 2014 n = 1,300)



Problems Encountered by Frequency of Capital Bikeshare Use – Respondents also were more likely to say they encountered a bikeshare issues if they were frequent bikeshare users (Figure 55). Nearly three-quarters (74%) of respondents who had made 11 or more Capital Bikeshare trips in the past month encountered a problem with the service, compared with 30% of respondents who made between one and five bikeshare trips in the past month. Frequent riders also encountered issues with each of the three bike system elements more often than did infrequent riders.

**Figure 55**  
**Incidence of Issues with Capital Bikeshare Service – by Number of Capital Bikeshare Trips in Past Month**  
 (1-5 trips n = 1,320, 6-10 trips n = 728, 11 or more trips n = 1,563)

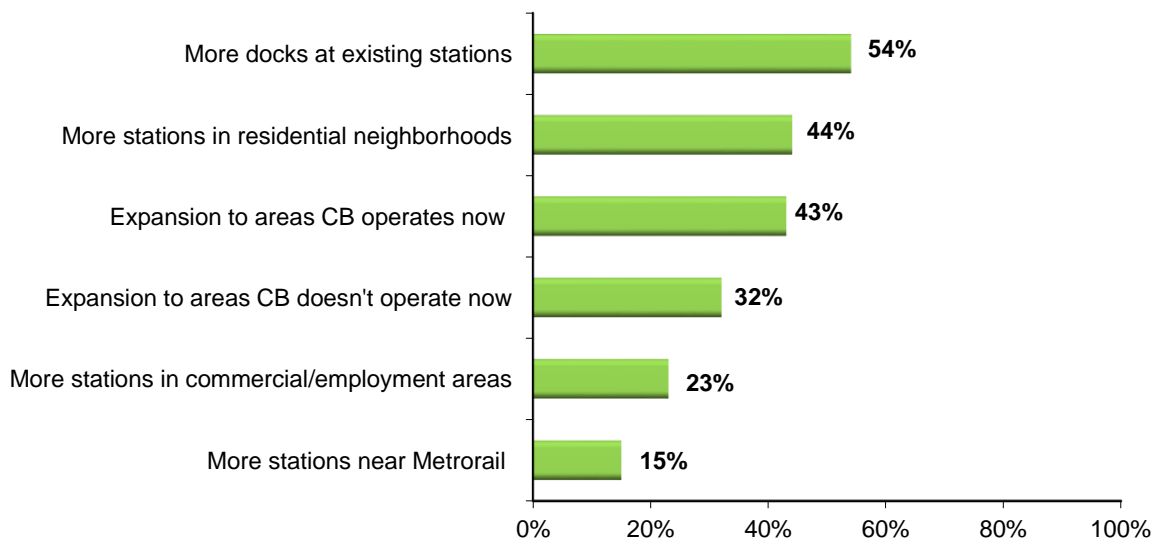


### **Most Needed Capital Bikeshare Expansion**

In both the 2011 and 2012 CB surveys, many of the comments provided by respondents for ways that Capital Bikeshare could be improved focused on the need for system expansion. To assess the relative need for various types of expansion, the 2014 survey included a question asking respondents for the “most needed expansion option.” Respondents were permitted to check multiple responses from a list of six.

The most pressing expansion need appeared to be for more docks at existing stations; 54% of respondents chose this option for greater access to bikes in popular bikeshare pick-up and drop-off locations (Figure 56). About four in ten (44%) respondents said they wanted new stations to be installed in residential neighborhoods (44%), perhaps indicating a desire for greater access to bikeshare for short trips within a home neighborhood. A similar percentage (43%) indicated a need for expansion within the existing service area (greater infill or density of stations). One-third (32%) of respondents said they want expansion to areas that bikeshare doesn't serve now (greater coverage) and). Smaller percentages of respondents said they would like to see expansion in commercial and employment areas (23%) or near Metrorail (15%).

**Figure 56**  
**Most Needed Capital Bikeshare Expansion Options**  
 (n = 4,079, multiple responses permitted)



Expansion Priority by Home Location – Respondents who lived in different jurisdictions indicated significantly different preferences for expansion (Table 18).

**Table 18**  
**Priority in Expansion Options by Home Location**

Capital Bikeshare Expansion Options	Home Location		
	DC (n = 2,693)	Arlington (n = 361)	Other Locations (n = 546)
More docks at existing stations	<b>60%</b>	24%	<b>36%</b>
More stations in residential neighborhoods	<b>47%</b>	<b>56%</b>	38%
More stations in locations where CB operates now (greater density/infill)	<b>48%</b>	<b>35%</b>	27%
Expansion to areas where CB doesn't operate now (greater coverage)	26%	<b>58%</b>	<b>53%</b>
More stations in commercial/employment areas	22%	21%	25%
More stations Near Metrorail stations	12%	13%	<b>25%</b>

(Statistically higher percentages are shaded)

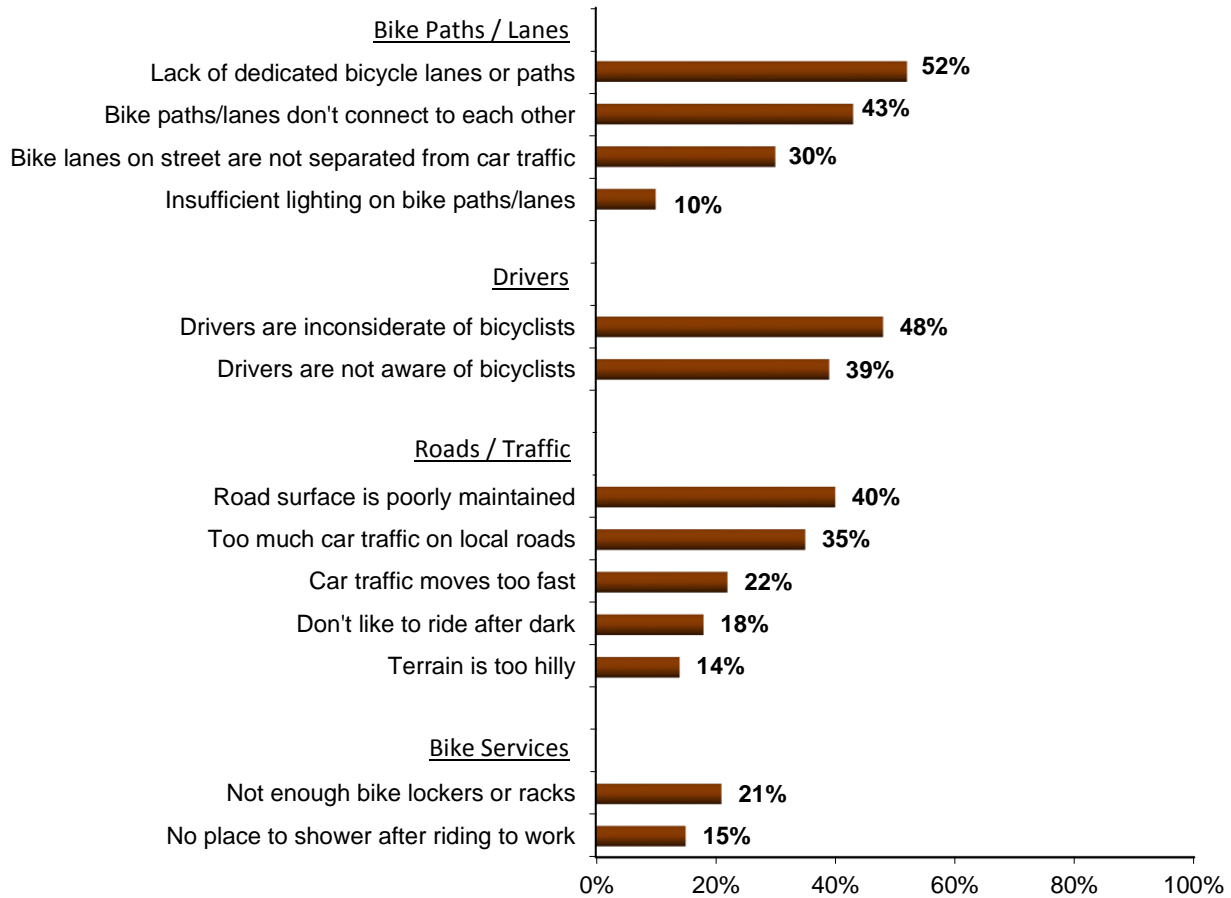
Respondents who lived in the District of Columbia indicated a strong preference for more docks at existing stations, more docks in residential neighborhoods, and greater infill/density. Arlington resident respondents also wanted more stations in residential areas and infill of stations in areas where bikeshare operates now, but their greatest overall priority was for expansion to areas that were not currently served by bikeshare (greater coverage).

Respondents who lived outside these two areas expressed yet another preference. Like residents of Arlington, they wanted greater bikeshare coverage to areas not currently served, but they also would like more docks at existing stations and more stations near Metrorail. This supports the role that bikeshare plays in facilitating members' access to transit.

#### **Barriers to Bicycling in the Washington Metropolitan Region**

Finally, the survey asked respondents if any of a list of possible issues were significant barriers to their bicycling in the Washington metropolitan region. Figure 57 shows the percentages who reported each barrier, with barriers grouped into four categories: bike paths/lanes, drivers, roads/traffic conditions, and availability of bike services.

**Figure 57**  
**Significant Barriers to Bicycling in the Washington Metropolitan Region**  
 (n = 4,082)



Barriers to Bicycling by Frequency of Bikeshare Use – A particular reason to explore barriers to bicycling is to identify approaches that could increase bike use. Table 19 displays the percentages of respondents who indicated each of the barriers noted in Figure 62 by how frequently they used bikeshare in the past month: 0 trips, 1 to 5 trips, 6 to 10 trips, and 11 or more trips.

Many of the barriers were noted by similar shares of respondents in each riding frequency category, that is, they were common barriers, regardless of how often the respondent used bikeshare. But some barriers were more of a concern to respondents who rode Capital Bikeshare infrequently, that is, the percentage of respondents who noted it at a barrier declined with increasing bikeshare use, while other barriers were noted by a higher percentage of frequent riders. These are listed, respectively, under the “Infrequent Rider Concerns” and the “Frequent Rider Concerns” sections of the table.

**Table 19**  
**Barriers to Bicycling by Frequency of Capital Bikeshare Use**

Barrier to Bicycling	Capital Bikeshare Trips in Past Month			
	0 Trips (n = 289)	1 – 5 Trips (n = 1,480)	6 – 10 Trips (n = 816)	11 or More Trips (n = 1,727)
<b><u>Infrequent Rider Concerns</u></b>				
Too much car traffic on local roads	39%	38%	33%	28%
Car traffic moves too fast	24%	24%	19%	18%
Lanes on streets not separated from traffic	33%	28%	28%	28%
Don't like to ride after dark	25%	22%	15%	12%
<b><u>Frequent Rider Concerns</u></b>				
Lack of dedicated bike lanes	48%	45%	47%	53%
Paths / lanes don't connect	36%	39%	41%	43%
Road surface poorly maintained	27%	33%	39%	43%
Not enough bike lockers / racks	17%	17%	21%	23%

(Statistically higher percentages are shaded)

The four barriers that were of greater concern to infrequent riders focused primarily on factors related to the safety of riding, such as the amount and speed of vehicle traffic on roads, needing to share the roadway with vehicles, and concerns about riding after dark. While some frequent riders also mentioned these issues, they did not appear to be as significant concerns as they were to infrequent riders. By contrast, frequent riders mentioned issues related to the breadth of their cycling network (connecting paths), the comfort of cycling (road surface), and their ability to park their bicycles securely at a destination (bike racks).

**Barriers by Respondent Subgroups** – Opinions about many of the barriers were consistent across respondent subgroups; there were no statistical differences by race/ethnicity, when respondent joined Capital Bikeshare, income, and employment status. The only notable statistical differences are described below.

**Home Location** – Respondents report some differences in barriers by their home jurisdiction. Arlington residents were more concerned than were District residents about:

- Too much traffic on local roads (42% of Arlington residents vs 33% of District residents)
- Don't like to ride after dark (24% of Arlington residents vs 15% of District residents)
- Terrain is too hilly (25% of Arlington residents vs 14% of District residents)

District residents were more concerned than Arlington residents about:

- Road surface poorly maintained (44% of District residents vs 28% of Arlington residents)
- Not enough bike lockers and rack (23% of District resident vs 12% of Arlington residents)

Sex – Differences were noted for six barriers features, with women reporting greater concern for five of the barriers and men being more concerned about one barrier. A higher share of men noted a concern with “not enough bike lockers or racks” (23% of men vs 19% of women). But women were more concerned with the following:

- Lack of dedicated bicycle paths or lanes (56% of women vs 49% of men)
- Too much traffic on local roads (42% of women vs 30% of men)
- Drivers are not aware of bicyclists (43% of women vs 36% of men)
- Don't like to ride after dark (26% of women) vs 12% of men)
- Terrain too hilly (18% of women vs 12% of men)

Age – Barriers also showed some distinct patterns by respondents' ages. In general older respondents were more concerned with:

- Too much traffic on local roads (33% of under 35 years vs 38% of 35 or older)
- Car traffic moves too fast (20% of under 35 years vs 25% of 35 or older)

Younger respondents were more concerned with:

- Lack of dedicated bicycle paths or lanes (55% of under 35 years vs 48% of 35 or older)
- Drivers are inconsiderate of bicyclists (50% of under 35 years vs 46% of 35 or older)
- No place to shower after riding to work (18% of under 35 years vs 12% of 35 or older)
- Terrain too hilly (17% of under 35 years vs 11% of 35 or older)
- Bike paths don't connect (45% of under 35 years vs 40% of 35 or older)
- Road surface poorly maintained (44% of under 35 years vs 34% of 35 or older)



## APPENDIX A – SURVEY QUESTIONNAIRE

*Note, response categories shown in italics were added in post-processing to code “other” responses; these items were not shown to respondents on the screen*

### General Information

1. Are you currently a member of Capital Bikeshare? If so, what membership level are you?
  - 1 Annual (**SKIP TO Q5**)
  - 2 Annual with monthly installments (**SKIP TO Q5**)
  - 3 Monthly (**SKIP TO Q5**)
  - 4 3-day (**SKIP TO Q5**)
  - 5 24-hour (**SKIP TO Q5**)
  - 6 Daily key (**SKIP TO Q5**)
  - 7 Former member of Capital Bikeshare (**CONTINUE WITH Q2**)
  - 8 Never was a member / never joined Capital Bikeshare (**SKIP TO Q3**)
  
2. Why are you no longer a member of Capital Bikeshare? (Check all that apply) (**SKIP TO END**)
  - 1 Riding Capital Bikeshare was too strenuous
  - 2 Docks were not available when I needed them
  - 3 Cost was too high, didn't use enough to justify the cost
  - 4 Bikes were not available when I needed them
  - 5 Not convenient for traveling to my intended destination(s)
  - 6 I bought my own bike and prefer to use it instead of Capital Bikeshare
  - 7 Moved out of the area or moved to / starting work in area without bikeshare stations
  - 8 Other \_\_\_\_\_
  - 9 *Dissatisfied with customer service, customer service issue*
  - 10 *Bikeshare stations were too far away from my current home / work*
  - 11 *Used CB only rarely, was in the DC region only temporarily*
  
3. I haven't joined Capital Bikeshare because: (Please select any that apply)
  - 1 I prefer to ride my own bike
  - 2 I have health issues that prevent me from riding
  - 3 I don't know how to ride a bike
  - 4 I don't know how Capital Bikeshare works
  - 5 The stations are not in locations that are useful to me
  - 6 Riding a bike in the street seems too dangerous
  - 7 I prefer to walk
  - 8 I prefer to take a bus or train
  - 9 I don't have a credit or debit card for registration
  - 10 I would rather drive a car
  - 11 Cost prohibitive
  - 12 Other \_\_\_\_\_

**4. I might try using Capital Bikeshare if: (please select any that apply) (SKIP TO END)**

- 1 Stations were closer to my home, office, or school
- 2 I could get help to improve my bicycling skills
- 3 Capital Bikeshare were less expensive
- 4 There were more bike lanes on the street
- 5 I knew more about how Capital Bikeshare worked
- 6 I felt safer riding a bike on the street
- 7 There were more off-street bike paths
- 8 Stations were closer to my bus or rail stop
- 9 Stations were near where I shop or do errands
- 10 Other \_\_\_\_\_

**5. How did you first learn about Capital Bikeshare? (Check only one answer)**

- 1 Employer, information at work
- 2 Referral from friend, family member, co-worker
- 3 Capital Bikeshare brochure
- 4 Community event
- 5 Social media
- 6 Newspaper or magazine, *radio/TV news*
- 7 Capital Bikeshare website
- 8 Saw a Capital Bikeshare station, read information posted at a station
- 9 Saw someone riding a Capital Bikeshare bike
- 10 BikeArlington
- 11 DDOT (District Department of Transportation)
- 12 goDCgo
- 13 City of Alexandria
- 14 Montgomery County
- 15 WABA (Washington Area Bicyclist Association)
- 16 Other (please specify) \_\_\_\_\_
- 17 *Member of other bikeshare program (DC or elsewhere)*
- 18 *Living Social / Groupon deal*
- 99 Don't remember

**6. When did you first join Capital Bikeshare?**

- 1 2010
- 2 2011
- 3 2012
- 4 2013
- 5 2014

7. What motivated you to join Capital Bikeshare? (Please rate each individually on a scale of 1 to 5, with 1 being a not at all important motivation and 5 being a very important motivation.)

- 1 Save money on transportation
- 2 Get around more easily, faster
- 3 Like to bike, fun way to travel
- 4 Exercise, fitness
- 5 Concern about environment
- 6 Health concern
- 7 Access to another bike / backup bike
- 8 Access to other form of transportation, new travel option/one-way travel option
- 9 Other (specify)\_\_\_\_\_

8 In the past month, about how many Capital Bikeshare trips did you make?

- 1 No trips (**SKIP TO Q10**)
- 2 1-2 trips
- 3 3-5 trips
- 4 6-10 trips
- 5 11-19 trips
- 6 20-29 trips
- 7 30-39 trips
- 8 More than 40 trips

9 Of the Capital Bikeshare trips that you made last month, approximately how many started or ended at the following public transit locations? (choose one for each row)

	0 trips	1-2 trips	3-5 trips	6 -10 trips	11 or more trips
1 Metrorail station	___	___	___	___	___
2 Bus stop	___	___	___	___	___
3 MARC/VRE/AMTRAK station	___	___	___	___	___

10 How often do you use Capital Bikeshare for each of the following types of trips? (choose one for each row)

	1 never	2 Occasionally	3 1 to 2	4 3 to 5	5 6 or
more	use	but less than	times per	times per	times
per	bikeshare	once per month	month	month	month
1 Go to or from work	___	___	___	___	___
2 Go to or from school	___	___	___	___	___
3 Go to a personal appointment	___	___	___	___	___
4 Social / entertainment / visiting	___	___	___	___	___
5 Restaurant, meal	___	___	___	___	___
6 Exercise, recreation	___	___	___	___	___
7 Shopping or errands	___	___	___	___	___

MOST RECENT CB TRIP

- 11 What was the primary purpose of your MOST RECENT Capital Bikeshare trip? (check only one)
- 1 Go to or from work
  - 2 Go to or from school
  - 3 Go to a personal appointment
  - 4 Social / entertainment / visit friends / *sightsee*
  - 5 Restaurant, meal
  - 6 Exercise, recreation, go to gym
  - 7 Shopping or errands
  - 8 Other (specify) \_\_\_\_\_
  - 9 *Work meeting / appointment*
  - 10 *Get to train station / airport*
  - 11 *Haven't used yet*
- 12 On what day of the week did you make your most recent Capital Bikeshare trip? (check only one)
- 1 Weekday (Monday – Friday)
  - 2 Saturday
  - 3 Sunday
  - 9 Don't remember
- 13 On your most recent trip, where did you pick up the bike? (Please choose ONE location)
- 1 Alexandria
  - 2 Arlington County
  - 3 District of Columbia
  - 4 Montgomery County
  - 9 Don't recall
- 14 Where did you drop off the bike? (Please choose ONE location)
- 1 Alexandria
  - 2 Arlington County
  - 3 District of Columbia
  - 4 Montgomery County
  - 9 Don't recall

- 15 For which reasons did you choose Capital Bikeshare for your most recent trip, instead of another type of transportation? (Check all that apply)

**ROTATE RESPONSES**

- 1 Too far to walk
- 2 No bus/train or bus/train was inconvenient to that destination
- 3 No bus/train or bus/train was inconvenient at that time of day
- 4 Don't have a car
- 5 Don't like to drive to that destination at that time of day
- 6 Parking is limited / expensive at that destination
- 7 Too much traffic around that destination
- 8 Wanted to get exercise
- 9 Bicycling is faster, easier to this destination
- 10 Bicycling is cheaper than other alternatives
- 12 Other (please specify) \_\_\_\_\_
- 13 *Fun, enjoy biking, beautiful weather*
- 14 *Needed, wanted on-way trip*
- 15 *Personal bike not available, didn't want to park/use personal bike*
- 19 Don't know

- 16 If Capital Bikeshare had not been available, how would you have made this particular trip? (check only one)

- 1 Bus or Metrorail
- 2 Personal bike
- 3 Drive a personal car or other motor vehicle
- 4 Get a ride with or from a friend or family member
- 5 Taxi, Uber, Lyft
- 6 Walk, run
- 7 Carshare, Zipcar, car2go
- 8 Would not have made this trip
- 9 Other (please specify) \_\_\_\_\_

- 17 In the PAST MONTH, how many times did you use Capital Bikeshare to make a trip YOU WOULD NOT HAVE MADE if Capital Bikeshare had not been available?

- 1 0 times (**SKIP TO Q21**)
- 2 1-2 times
- 3 3-5 times
- 4 6-10 times
- 5 11 or more times

- 18 For what purposes did you make these trips? (Check all that apply)

- 1 Go to or from work
- 2 Go to or from school
- 3 Go to a personal appointment
- 4 Social / entertainment / visiting
- 5 Restaurant, meal
- 6 Exercise, recreation, go to gym
- 7 Shopping or errands
- 8 Go to or from Metrorail station, bus stop, train station
- 9 Other (specify) \_\_\_\_\_

- 19 Why would you not have made these trips without Capital Bikeshare? (check all that apply)
- 1 Too far to walk
  - 2 No bus/train or bus/train inconvenient to that destination
  - 3 No bus/train or bus/train inconvenient at that time of day
  - 4 Don't have a car
  - 5 Don't like to drive to that destination at that time of day
  - 6 Parking is limited / expensive at that destination
  - 7 Too much traffic around that destination
  - 8 Wanted to get exercise, *trip was purely recreational*
  - 9 Bicycling is faster, easier to this destination
  - 10 Bicycling is cheaper than other alternatives
  - 12 Other (please specify) \_\_\_\_\_
  - 19 Don't know
- 20 If a commercial / retail business, restaurant, or shop is easily accessible by Capital Bikeshare, does that access make you more or less likely to patronize that establishment?
- 1 Much less likely
  - 2 Somewhat less likely
  - 3 Not more likely or less likely
  - 4 Somewhat more likely
  - 5 Much more likely
  - 9 Don't know
- 21 On a weekly basis, how much money do you think Capital Bikeshare saves you on your travel compared with what you were spending before you joined?
- 1 \$0
  - 2 \$1-20 per week
  - 3 \$21-40 per week
  - 4 \$41-60 per week
  - 5 More than \$60 per week
  - 9 Don't know

**VEHICLE ACCESS AND USE**

- 22 As a result of your use of Capital Bikeshare, do you ride a bicycle more often, less often, or about the same as before you joined Capital Bikeshare? Please include your use of Capital Bikeshare AND any personal bicycles.
- 1 Much less often
  - 2 Somewhat less often
  - 3 About the same
  - 4 Somewhat more often
  - 5 Much more often

24 As a result of your use of Capital Bikeshare, do you use each of the following types of travel options more often, less often, or about the same as before you joined Capital Bikeshare ...? (check one for each row)

	1 Much less often	2 Somewhat less often	3 About the same	4 Somewhat more often	5 Much more often
1 Bus	___	___	___	___	___
2 Metrorail	___	___	___	___	___
3 Walk	___	___	___	___	___
4 Taxi	___	___	___	___	___
5 Drive car	___	___	___	___	___

25 Do you have any of the following vehicles available to you on a regular basis for your travel? (check all that apply)

- 1 Personal bike (other than Capital Bikeshare)
- 2 Car, van, SUV, truck or other person vehicle
- 3 Motorscooter, motorbike, or motorcycle
- 4 Zipcar or car2go membership

26 Approximately how many miles do you drive PER YEAR in the Washington metro region (including miles in vehicles you own, rent, or borrow)?

27 In the year BEFORE YOU JOINED Capital Bikeshare, approximately how many miles did you drive in the Washington metro region?

28 If you have reduced your annual driving miles since you joined Capital Bikeshare, to what extent did Capital Bikeshare contribute to the reduction?

- 1 Did not reduce driving miles
- 2 Capital Bikeshare was the main factor
- 3 Capital Bikeshare was a major factor, in combination with other things
- 4 Capital Bikeshare was a minor factor, in combination with other more important things
- 5 Capital Bikeshare was not a factor
- 9 Don't know

29 How many cars, trucks, vans, or other personal vehicles do you or other members of your household own or lease now for household use?

30 How many personal vehicles did you or other members of your household own or lease AT THE TIME YOU JOINED Capital Bikeshare?

31 Since you joined Capital Bikeshare, have you sold a personal household vehicle? (Choose only one option)

- 1 No, did not sell or consider selling vehicle (**SKIP TO Q33**)
- 2 Sold household vehicle, but I replaced it with another vehicle (**SKIP TO Q33**)
- 3 Sold household vehicle and did NOT replace it (**CONTINUE TO Q32**)

- 32 To what extent did your membership in Capital Bikeshare contribute to your decision to sell a personal vehicle?
- 1 Capital Bikeshare was the main factor
  - 2 Capital Bikeshare was a major factor, in combination with other things
  - 3 Capital Bikeshare was a minor factor, in combination with other more important things
  - 4 Capital Bikeshare was not a factor
  - 9 Don't know

**TRAVEL TO WORK**

- 33 Are you currently employed, either full-time or part-time?

- 1 Employed full-time
- 2 Employed part-time
- 3 Not employed (**SKIP TO Q42**)

- 33a What is your zip code at work?

- 34 About how many miles is it from your home to your usual work location? (Please enter numbers only without commas or decimal points). If your trip is less than one mile, enter 1.

- 35 In a typical week, which of the following types of transportation do you use to get to / from work? (Check all that apply)

- 1 Personal bicycle
- 2 Capital Bikeshare bicycle
- 3 Walk or run
- 4 Public transit (bus, Metrorail, or commuter train)
- 5 Drive alone or ride in a taxi, Uber, Lyft
- 6 Carpool or vanpool
- 7 Telework (count only if you work at home ALL DAY)
- 8 Other (Specify) \_\_\_\_\_

- 35a Of the travel options you just checked, which type do you use MOST OFTEN to get to / from work? Check only ONE option. If you use more than one type, check the type you use most days for the longest distance part of your trip.

- 1 Personal bicycle
- 2 Capital Bikeshare bicycle
- 3 Walk or run
- 4 Public transit (bus, Metrorail, or commuter train)
- 5 Drive alone or ride in a taxi, Uber, Lyft
- 6 Carpool or vanpool
- 7 Telework (count only if you work at home ALL DAY)
- 8 Other (Specify) \_\_\_\_\_



- 35b How many days per week do you typically use THIS MOST COMMON type of transportation to get to / from work? (Check only ONE option)
- 1 1 day per week
  - 2 2 days per week
  - 3 3 days per week
  - 4 4 days per week
  - 5 5 or more days per week
- 35c How often do use a different type of transportation to get home FROM work than you used to get TO work?
- 1 Never
  - 2 Occasionally, but less than once per month
  - 3 1 to 3 days per month
  - 4 1 or 2 days per week
  - 5 3 or more days per week
- 35d On days that you use public transit, carpool, or vanpool for your commute, how do you get to the bus stop, train station, or location where you meet your carpool/vanpool? (check all that apply)
- 1 I never carpool, vanpool, or use public transit for my commute
  - 2 Walk, run
  - 3 Capital Bikeshare bike
  - 4 Personal bike
  - 5 Taxi or dropped off (e.g. by household member, neighbor, or co-worker)
  - 6 Picked up at home
  - 7 Drive myself and leave my car/vehicle at the meeting point
  - 8 Other (please specify) \_\_\_\_\_
- 36 In the past year, did you make any of the following changes in how you travel TO OR FROM WORK? (check all that apply)
- 1 Started riding a bike; ride a bike more often
  - 2 Started walking; walk more often
  - 3 Started riding public transit; ride transit more often
  - 4 Started carpooling or vanpooling; carpool or vanpool more often
  - 5 Started teleworking; telework more often
  - 6 Did not make any of these changes

**IF Q36 = ANY OF RESPONSES 1 – 5, CONTINUE TO Q37**

**IF Q36 = ONLY RESPONSE 6, SKIP TO Q41**

- 37 BEFORE YOU MADE THIS CHANGE, what types of transportation did you use to get to / from work? (Check all that apply)
- 1 Personal bicycle
  - 2 Capital Bikeshare bicycle
  - 3 Walk or run
  - 4 Public transit (bus, Metrorail, or commuter train)
  - 5 Drove alone or ride in a taxi
  - 6 Carpool or vanpool
  - 7 Telework (count only if you worked at home ALL DAY)
  - 8 Other (Specify) \_\_\_\_\_
  - 10 *Didn't live/work in DC area before*

37a Before you made this change, which type of transportation did you use MOST OFTEN to get to / from work?  
(Check only ONE option)

- 1 Personal bicycle
- 2 Capital Bikeshare bicycle
- 3 Walk or run
- 4 Public transit (bus, Metrorail, or commuter train)
- 5 Drove alone or ride in a taxi
- 6 Carpool or vanpool
- 7 Telework (count only if you worked at home ALL DAY)
- 8 Other (Specify) \_\_\_\_\_
- 10 *Didn't live/work in DC area before*

37b How many days per week did you typically use THIS MOST COMMON type of transportation to get to / from work? (Check only ONE option)

- 1 1 day per week
- 2 2 days per week
- 3 3 days per week
- 4 4 days per week
- 5 5 or more days per week

38 How much did Capital Bikeshare contribute to this change in how you travel to work?

- 1 Capital Bikeshare was the main factor
- 2 Capital Bikeshare was a major factor, in combination with other things
- 3 Capital Bikeshare was a minor factor, in combination with other more important things
- 4 Capital Bikeshare was not a factor
- 9 Don't know

41 Does your employer currently offer any of the following employee benefits to help with your trip to work?  
(check all that apply)

- 1 Alternative work schedule
- 2 Flextime (flexible work start / end times)
- 3 Telework
- 4 Financial incentive or subsidy for employees who ride a bike to work
- 5 Bike racks or lockers
- 6 Showers or personal lockers
- 7 SmartBenefits transit / vanpool subsidy
- 8 Zipcar or car2go membership (*or discount on membership fee*)
- 9 Capital Bikeshare Membership (*or discount on membership fee*)
- 10 Other (please specify) \_\_\_\_\_
- 11 *Free or discount car parking*

**CUSTOMER SERVICE**

42 How do you rate each of the following features of Capital Bikeshare? Please rate each on a scale of 1 to 5, where 1 is Poor and 5 is Excellent. (Choose one answer for each row)

	1 (Poor)	2	3	4	5 (Excellent)	Don't know
1 Map at Capital Bikeshare station	1	2	3	4	5	DK
2 Nighttime lighting at stations	1	2	3	4	5	DK
3 Safety of stations	1	2	3	4	5	DK
4 Capital Bikeshare website	1	2	3	4	5	DK
5 Mechanical repair of bikes	1	2	3	4	5	DK
6 Call center	1	2	3	4	5	DK
7 Availability of bikes at docks	1	2	3	4	5	DK
8 Availability of open docks	1	2	3	4	5	DK

43 Have you had any problems with any of the following? (check all that apply)

- 1 Accessing a bike with a Capital Bikeshare membership key *or other key problem*
- 2 Mechanical issue with retrieving or returning a bike to a Capital Bikeshare dock
- 3 Mechanical issues with a bike
- 4 *Finding available bike, open dock, or station near destination*
- 5 *Other problems (customer service, Spocycle, other)*
- 8 Have not had any of these problems

43a What problems did you have? \_\_\_\_\_

44 If Capital Bikeshare offered a low-cost pay per ride option with no membership fee required, how likely would you be to use it?

- 1 Not at all likely
- 2 Somewhat likely, I would consider it
- 3 Very likely
- 4 Depends on cost per ride
- 9 Don't know

45 If you could use a single card (e.g., Capital Bikeshare fob or SmarTrip card) to check out Capital Bikeshare bikes and ride public transit service, how interested would you be in using this single card system?

- 1 Not interested
- 2 Somewhat interested
- 3 Very interested
- 9 Don't know

46 If you have a smartphone equipped with near-field communication (NFC) functionality, how interested would you be in using it to check out Capital Bikeshare bikes?

- 1 Not at all interested
- 2 Somewhat interested
- 3 Very interested
- 4 Don't know if my phone is equipped with this capability

- 47 Which of the following are significant barriers to your bicycling in the Washington Metro region? (Check up to five)
- 1 Lack of dedicated bicycle lanes or paths
  - 2 Bike paths / lanes don't connect to each other
  - 3 Too much traffic on local roads
  - 4 Traffic moves too fast
  - 5 Bike lanes on streets are not separated from traffic
  - 6 Road surface is poorly maintained
  - 7 Insufficient lighting on bike paths or bike lanes
  - 8 Drivers are not aware of bicyclists
  - 9 Drivers are inconsiderate of bicyclists
  - 10 Not enough bike lockers or racks
  - 11 No place to shower after riding to work
  - 12 Don't like to ride after dark
  - 13 Terrain is too hilly
  - 14 Other \_\_\_\_\_
  - 15 *Not enough bikeshare bikes, docks, stations*
  - 16 *Bad weather, don't like to ride in bad weather*
  - 17 *Bicyclists are inconsiderate/unaware, ignore traffic rules*
  - 19 *No barriers*
- 48 Which of the following Capital Bikeshare expansion options are most needed? (Check up to two options)
- 1 More docks/bikes at existing stations
  - 2 More stations in residential neighborhoods
  - 3 More stations in commercial / employment areas
  - 4 More stations near Metrorail stations
  - 5 More stations in areas where bikeshare operates now (greater density / infill)
  - 6 Expansion to areas where bikeshare doesn't operate now (greater coverage)

**TELL US ABOUT YOURSELF**

- 48a How far is it from your home to the nearest bikeshare station?
- 1 4 blocks or less (about 1/4 mile)
  - 2 5 to 8 blocks (about 1/2 mile)
  - 3 9 to 12 blocks (about 3/4 mile)
  - 4 13 to 15 blocks (about 1 mile)
  - 5 More than 1 mile
  - 9 Don't know
- 48b How far is it from your work to the nearest bikeshare station?
- 1 4 blocks or less (about 1/4 mile)
  - 2 5 to 8 blocks (about 1/2 mile)
  - 3 9 to 12 blocks (about 3/4 mile)
  - 4 13 to 15 blocks (about 1 mile)
  - 5 More than 1 mile
  - 8 I'm not employed
  - 9 Don't know
- 49 What is your home Zip code?

- 51 Are you male or female?
- 1 Male
  - 2 Female
  - 9 Prefer not to answer
- 52 What is your age?
- 1 16 – 17 years old
  - 2 18 - 24
  - 3 25 - 34
  - 4 35 - 44
  - 5 45 - 54
  - 6 55 - 64
  - 7 65 years or older
  - 9 Prefer not to answer
- 53 Approximately what was your total household income last year?
- 1 less than \$10,000
  - 2 \$10,000 - \$14,999
  - 3 \$15,000 - \$24,999
  - 4 \$25,000 - \$34,999
  - 5 \$35,000 - \$49,999
  - 6 \$50,000 - \$74,999
  - 7 \$75,000 - \$99,999
  - 8 \$100,000 – \$124,999
  - 9 \$125,000 - \$149,999
  - 10 \$150,000 - \$199,999
  - 11 \$200,000 or more
  - 99 Prefer not to answer
- 54 How many people reside in your household?
- 1 1 (Just myself)
  - 2 2
  - 3 3
  - 4 4 or more
  - 9 Prefer not to answer
- 56 Which of the following best describes your racial or ethnic background?
- 1 Asian/Pacific Islander
  - 2 Black/African-American
  - 3 Caucasian, White
  - 4 Hispanic, Latino
  - 5 Other/Multi-Racial
  - 9 Prefer not to answer
- 57 Are you a full-time or part-time student?
- 1 Full-time student
  - 2 Part-time student
  - 3 Not a student
  - 9 Prefer not to answer

- 59 Thank you for participating in the survey. If you have any suggestions to improve Capital Bikeshare, please share them here.