SFpark

# On-street car sharing pilot evaluation

SEPTEMBER 10, 2012

SFMTA | Municipal Transportation Agency

## Executive summary

Car sharing helps the SFMTA achieve its goals for managing parking and the overall transportation system in San Francisco. On-street car sharing spaces (i.e., locations where users pick up and drop off a car sharing vehicle) can encourage car sharing by increasing the visibility of car sharing, improving the proximity to trip origins, and increasing the total number of vehicles available.

In fall 2011, the SFMTA worked to implement a pilot of on-street car sharing spaces under an agreement between the City Administrator's Office and City CarShare. A total of twelve spaces were implemented. This document evaluates the pilot through April 2012, after six months of operation for most spaces.

These following lessons learned and recommendations will be considered when developing a proposal to expand the program:

- **On-street car sharing spaces are technically feasible in San Francisco.** The exclusive designation of on-street spaces to car sharing fulfilled the same operational need as off-street spaces. Exemptions from street sweeping, residential parking permit zones (RPP), and time limits did not pose challenges.
- **On-street car sharing spaces can be quickly become well utilized.** As with off-street spaces, the utilization of on-street spaces is primarily related to the market they serve. If located in areas where the demand for car sharing is high, on-street spaces can grow into operational maturity faster than an equivalent off-street space.
- **Political support is needed for proposed spaces to be approved.** SFMTA will need to balance neighborhood concerns with the locational needs of car sharing to have spaces that will be well utilized and will further the City's policy goals. On-street car sharing spaces will need a broad base of support from CSOs, neighborhood groups, and Supervisors' offices to pass each step of the approvals process.
- **Enforcement of the spaces is important for success.** If too many unauthorized drivers block the spaces, members will become frustrated, utilization can suffer, and car sharing organizations must address the resulting operational and customer service issues. Targeted enforcement and visible paint and signage can help lower rates of unauthorized parking.
- **Commercial areas offer high visibility and accessibility, but may present enforcement challenges.** Spaces should be strategically placed so that they are visible and accessible, but are away from key areas of activity.
- **A transferrable permit gives car sharing organizations needed flexibility.** Car sharing organizations need the flexibility to occasionally reassign vehicles to spaces for maintenance or other operational needs (e.g., place a pickup truck where there was previously a sedan).

- **Recalculate permit fee.** The SFMTA established the $150 per space monthly fee based on an estimate of costs to administer the program. Now that the agency has actual historical data, the SFMTA should reassess assumptions used to calculate the fee and recover costs.
- **Improve efforts to coordinate and communicate parking space closures.** Temporary space closures limit the availability of the vehicle. The SFMTA is currently developing systems to improve its awareness of temporary closures and ability to quickly and automatically distribute this information.

Overall, the analysis suggests that on-street car share spaces are feasible and can be well utilized in San Francisco. Using lessons learned from the pilot, SFMTA will develop a policy regarding citywide on-street car share spaces and will include program rules and guidelines, and criteria for participation. The policy will be presented to the SFMTA Board for approval in fall 2012.

## Overview

Car sharing helps the SFMTA achieve its goals for managing parking and the overall transportation system in San Francisco. Car sharing provides the mobility of a car without the need for owning a private vehicle. As a whole, members of car sharing organizations own fewer vehicles, travel fewer miles by car, and walk, bike, and take public transit more frequently.

On-street car sharing spaces (i.e., locations where users pick up and drop off a car sharing vehicle) can encourage car sharing by increasing the visibility of car sharing, improving the proximity to trip origins, and increasing the total number of vehicles available. In 2006, California state law changed to allow municipalities to designate on-street parking spaces for the exclusive use of car sharing vehicles.

In fall 2011, the SFMTA implemented a pilot of on-street car sharing spaces under an agreement between the City Administrator's Office and City CarShare. The SFMTA Board and Board of Supervisors approved changes to the Transportation Code that enable the program. The primary goals of this pilot were to (1) gauge the technical feasibility of on-street spaces for car sharing in San Francisco, and (2) to inform the SFMTA on how to best administer a long-term program. City CarShare was the car sharing organization to participate in the pilot, and played a key role in providing data and feedback.

In October 2011, the pilot launched with five spaces. Six more spaces were added in November 2011, and a twelfth space was implemented in early 2012. This document evaluates the pilot through April 2012, after six months of operation for most spaces.

The SFMTA conducted the evaluation with five types of criteria in mind:

- **Vehicle utilization.** The key performance indicator for car sharing is how often the vehicles are used. For each vehicle assigned to the on-street spaces, the SFMTA examined the total utilization rate and number of unique users.
- **Operation of on-street spaces.** This section examines operational issues with the exclusive designation of an on-street space for car sharing, including enforcement and space closures.
- **Permit program administration.** The SFMTA set up a permit program to identify authorized vehicles. This section evaluates how well the permit supported the needs of the pilot.
- **User behavior.** City CarShare surveyed members who used on-street car sharing spaces to gauge customer satisfaction and travel behavior.
- **Stakeholder input.** The SFMTA sought feedback from neighborhood groups and elected officials that were also contacted prior to implementing the pilot.

This document starts with a description of the pilot locations, followed by an evaluation along the five types of criteria described above, and concludes with recommendations for moving forward. Overall, the analysis suggests that on-street car share spaces are feasible and can be well utilized in San Francisco. Using lessons learned from the pilot, SFMTA will develop a policy regarding citywide on-street car share

spaces and will include program rules and guidelines, and criteria for participation. The policy will be presented to the SFMTA Board for approval in fall 2012.

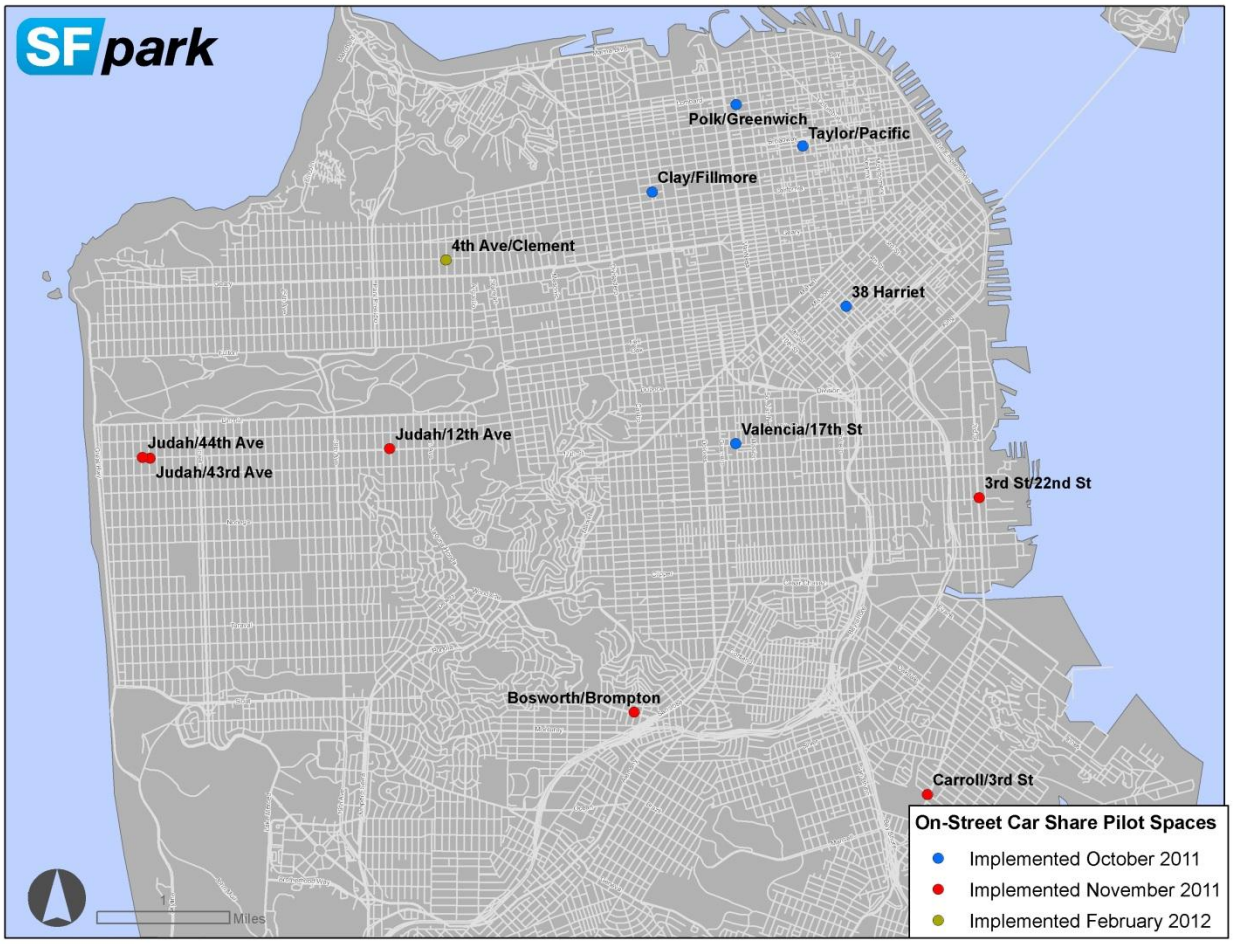
## Pilot space selection criteria and locations

The SFMTA worked with City CarShare, the City Administrator's office, members of the Board of Supervisors, and neighborhood groups to select the pilot spaces.

Spaces were primarily chosen for their visibility and accessibility. The SFMTA also chose spaces close to transit stops and bike lanes to facilitate their integration into the existing transportation network. Only one space was allocated per block. Additionally, spaces were selected in areas of both high and low demand; some spaces were placed where there was a latent demand for car sharing, and others were tested in new markets. The SFMTA also considered a variety of surrounding land use types in the pilot (e.g., some spaces in residential areas, some in commercial areas).

City CarShare advertised the new spaces via email and by distributing information at local events. The SFMTA notified neighborhood groups prior to implementation and also held a press event on the launch date of the pilot. Figure 1 shows the locations and implementation dates of the twelve pilot spaces, followed by the rationale for selecting each space.

**Figure 1: On-street pilot spaces and implementation dates**




1. **Polk & Greenwich (Russian Hill).** The space provides car sharing access to residents living in the surrounding area. There is good access to transit; the 19-Polk, 47-Van Ness, and 49-Van Ness/Mission are nearby.
2. **Taylor & Pacific (Russian Hill).** The space provides car sharing access to residents living in the surrounding area. The 10-Townsend and 12-Folsom/Pacific are nearby.
3. **38 Harriet (South of Market).** City CarShare has been coordinating with the developer of a property at this address. The developer is planning to build residential units without off-street parking if on-street car sharing is proven to work in this area. Construction did not interfere with the space during the pilot period.
4. **Valencia & 17th St (Mission).** Visibility is high along Valencia and there is also a bike route on 17th Street. The space is close to stops for the 14/14L-Mission, 49-Van Ness/Mission, the 33-Stanyan, and the 16th Street BART station. This space tested a metered on-street parking space along a busy commercial corridor. The meter for this space has been taken out of service and can be reinstalled

after the pilot if necessary. Additionally, this space is located in the Mission SF*park* area, and SFMTA leveraged parking sensor data for evaluation.

5. **Clay & Fillmore (Lower Pacific Heights).** This location benefits from high visibility from the Fillmore commercial corridor and high residential accessibility from the Pacific Heights neighborhood. Stops for the 1-California, 22-Fillmore, and 3-Jackson are also nearby. The meter for this space has been taken out of service and can be reinstalled after the pilot if necessary. This space is also located in the Fillmore SF*park* area, and SFMTA leveraged parking sensor data for evaluation.
6. **Carroll & 3rd St (Bayview).** This space is located next to the 5800 Third Street (with over 130 residential units) development, and is visible from Third Street. The location is also adjacent to stops for the T-Third and 91-Owl. The Bayview neighborhood is a new market for City CarShare and this is be one of the first car sharing spaces located in this area of the City.
7. **3rd St & 22nd St (Dogpatch).** This space benefits from high visibility on 3rd Street and is within walking distance of residents living on the west side of 3rd Street. Stops for the T-Third and 48-O'Shaughnessy are nearby.
8. **Bosworth & Brompton (Glen Park).** Transit accessibility is high, with the Glen Park BART station, stops for the 23-Monterey, 36-Teresita, 44-O'Shaugnessy, and 52-Excelsior one block away. The J-Church also stops nearby. This space is also highly visible along Bosworth, close to the Glen Park commercial district, and easily accessed by residents in the surrounding area. There is also a bike route on Bosworth.
9. **Judah & 12th Ave (Inner Sunset).** The adjacent N-Judah stop makes this space both highly visible and accessible. This space is in a residential area although the Inner Sunset commercial district is nearby.
10. **Judah & 43rd Ave (Outer Sunset).** City CarShare recommended two spaces were in the Outer Sunset due to no existing car share network in the area. The spaces are located one block away from each other to avoid removing two adjacent spaces, and to create a small network effect. This space is accessible from the adjacent N-Judah stop and the surrounding residents.
11. **Judah & 44th Ave (Outer Sunset).** The second space in the Outer Sunset is located at the edge of a commercial district which increases the space's visibility. Stops for the N-Judah and 18-46th Avenue are nearby.
12. **4th Ave & Clement (Inner Richmond).** This space is visible from the busy commercial district on Clement Street, and accessible from the surrounding residential areas. Transit access is provided by the 38-Geary and 2-Clement.

## On-street space approvals process

Per Section 201(c) of the Transportation Code, Division II, establishing an on-street car sharing space requires approval from the SFMTA Board of Directors. As part of this process, the following steps are required for each space:

1. Pass review by SFMTA transportation engineering staff to ensure functional feasibility and no conflicts with other regulations (e.g., not locate a space in a towaway zone)
2. Undergo review by Transportation Advisory Staff Committee (TASC) review to brief relevant SFMTA divisions and other City departments (e.g., SFMTA Enforcement, Planning Department, DPW, SFPD) on new spaces and programs
3. Perform outreach to relevant neighborhood and community groups
4. Pass a SFMTA Transportation Engineering Public Hearing
5. Receive approval from the SFMTA Board of Directors (typically as part of the consent calendar)

SFMTA staff (along with support from City CarShare and the City Administrator's Office) shepherded the pilot spaces through this process.

An additional parking space at Hyde & Union was considered. However, the merchants from the affronting property and a member from the Russian Hill Community Association voiced opposition to the proposal. In particular, they were concerned about potential negative effects to the adjacent businesses and overall loss of parking in the neighborhood. The hearing officer did not approve the location, and the space was dropped from the pilot spaces.

City CarShare believed the location would have worked very well, as there is pent-up demand for car sharing in the immediate area. In the future, the SFMTA will need to balance neighborhood concerns with the locational needs of car sharing to have spaces that will be well utilized. On-street car sharing spaces will need a broad base of support from CSOs, neighborhood groups, and Supervisors' offices to pass each step of the process.

## Utilization

The SFMTA identified two key metrics: utilization rate and unique users. City CarShare provided data necessary for analysis to the SFMTA for the pilot spaces, as well as for a group of off-street control spaces to be used for comparison. These control spaces were selected for their proximity to the on-street pilot locations and for their high level of operational maturity (i.e., have reached stable utilization levels):

- Russian Hill: Van Ness & Union
- Nob Hill: California & Mason (Crocker Garage)
- SOMA: 2nd & Howard

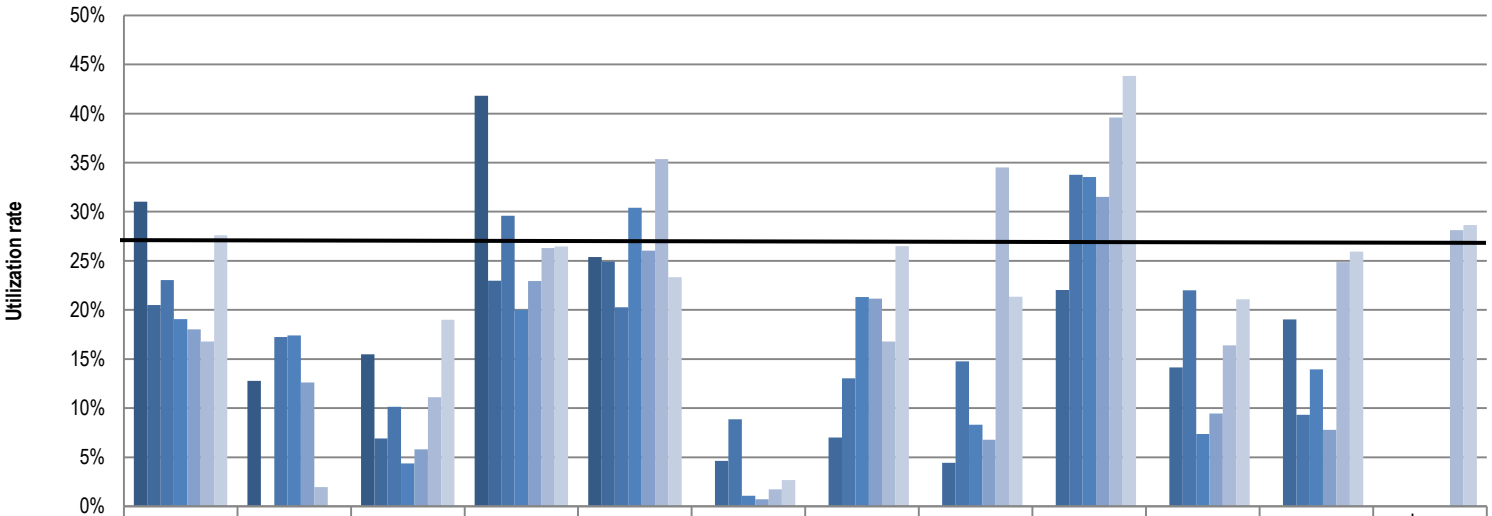
- Mission: 24th & Valencia (Union 76)
- Pacific Heights: California & Fillmore
- Inner Sunset: 9th & Irving
- Sunset: Judah & 19th (Union 76)
- Glen Park: Glen Park BART
- Dogpatch: Indiana & 18th (UCSF)
- Inner Sunset: 11th & Lincoln

Utilization remained stable in the control spaces for the duration of the pilot, and City CarShare attempted to keep the number of nearby off-street spaces consistent to minimize effects to on-street spaces.

## Utilization rate

This metric is calculated as the share of total hours that a vehicle was in use out of the total hours in a day (e.g., if a vehicle was reserved for six hours of a day, then the utilization rate is 25 percent for that day). This directly measures the demand for vehicles at these locations. Figure 2 shows the utilization rate for each pilot space as compared to the control average of 27 percent.

**Figure 2: Utilization rate by space by month**[1]



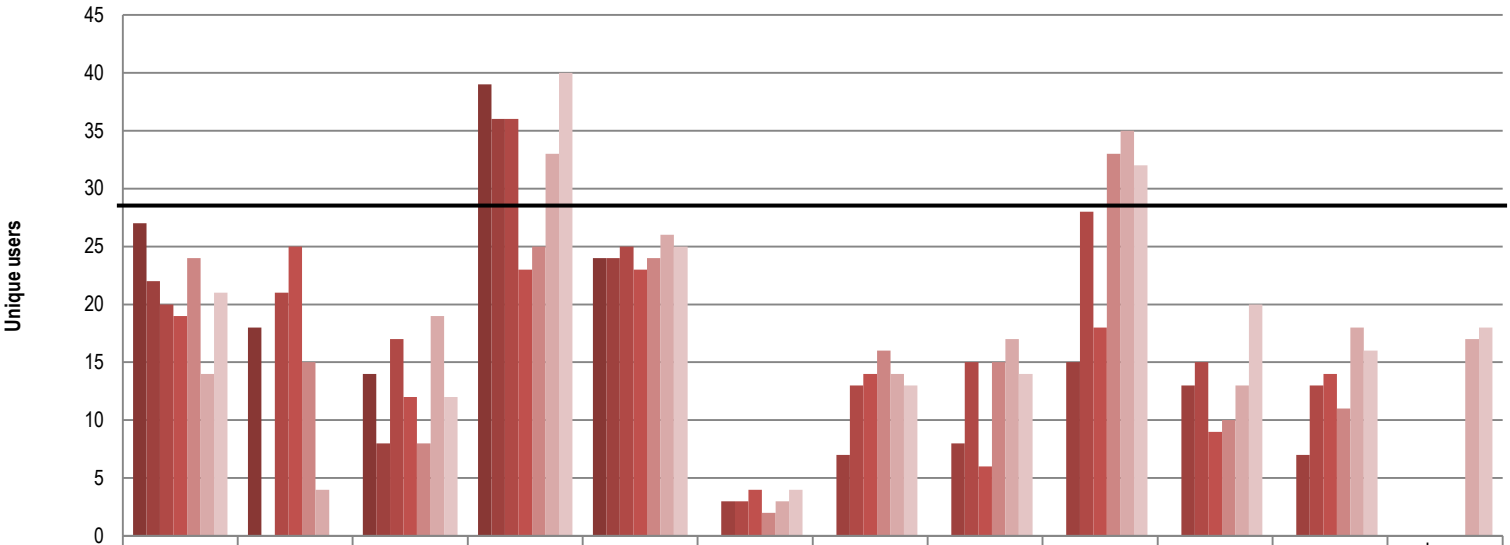

| | Russian Hill: Polk & Greenwich | Russian Hill: Taylor & Pacific | SOMA: Harriet & Howard | Mission: Valencia & 17th | Pacific Heights: Clay & Fillmore | Bayview: Carroll & 3rd | Dogpatch: 3rd & 22nd | Glen Park: Bosworth & Brompton | Inner Sunset: Judah & 12th | Outer Sunset: Judah & 43rd | Outer Sunset: Judah & 44th | Inner Richmond: 4th & Clement |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| October | 31% | 13% | 15% | 42% | 25% | | | | | | | |
| November | 20% | | 7% | 23% | 25% | 5% | 7% | 4% | 22% | 14% | 19% | |
| December | 23% | 17% | 10% | 30% | 20% | 9% | 13% | 15% | 34% | 22% | 9% | |
| January | 19% | 17% | 4% | 20% | 30% | 1% | 21% | 8% | 34% | 7% | 14% | |
| February | 18% | 13% | 6% | 23% | 26% | 1% | 21% | 7% | 32% | 9% | 8% | |
| March | 17% | 2% | 11% | 26% | 35% | 2% | 17% | 35% | 40% | 16% | 25% | 28% |
| April | 28% | | 19% | 26% | 23% | 3% | 26% | 21% | 44% | 21% | 26% | 29% |

[1] The Taylor/Pacific space was out of commission for prolonged periods in November 2011, March 2012, and April 2012 due to construction projects. These led to significant gaps in data collection.

## Unique users

Figure 3 shows the total number of unique users who used the vehicle at each space. This indicates how many individuals benefitted from the car sharing vehicle. This is compared to the control average of 29 users.

**Figure 3: Unique users by space by month**[2]




| | Russian Hill: Polk & Greenwich | Russian Hill: Taylor & Pacific | SOMA: Harriet & Howard | Mission: Valencia & 17th | Pacific Heights: Clay & Fillmore | Bayview: Carroll & 3rd | Dogpatch: 3rd & 22nd | Glen Park: Bosworth & Brompton | Inner Sunset: Judah & 12th | Outer Sunset: Judah & 43rd | Outer Sunset: Judah & 44th | Inner Richmond: 4th & Clement |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| October | 27 | 18 | 14 | 39 | 24 | | | | | | | |
| November | 22 | | 8 | 36 | 24 | 3 | 7 | 8 | 15 | 13 | 7 | |
| December | 20 | 21 | 17 | 36 | 25 | 3 | 13 | 15 | 28 | 15 | 13 | |
| January | 19 | 25 | 12 | 23 | 23 | 4 | 14 | 6 | 18 | 9 | 14 | |
| February | 24 | 15 | 8 | 25 | 24 | 2 | 16 | 15 | 33 | 10 | 11 | |
| March | 14 | 4 | 19 | 33 | 26 | 3 | 14 | 17 | 35 | 13 | 18 | 17 |
| April | 21 | | 12 | 40 | 25 | 4 | 13 | 14 | 32 | 20 | 16 | 18 |

[2] The Taylor/Pacific space was out of commission for prolonged periods in November 2011, March 2012, and April 2012 due to construction projects. These led to significant gaps in data collection.

## Analysis

The number of unique users generally followed the same pattern as utilization rates for each space; if a space had a high utilization rate, then it also had relatively high numbers of unique users as compared to the other pilot spaces. However, the utilization varied significantly from space to space. This can be expected since the demand for car sharing is not uniform across the City.

Some of the on-street spaces consistently saw high levels of performance. Many of these spaces are located in existing car sharing markets and are located inside or nearby busy commercial corridors.

- The Polk/Greenwich, Valencia/17th, Clay/Fillmore, and Judah/12th spaces all saw very high utilization levels and unique users exceeding the control average since their implementation.
- The Taylor/Pacific space in Russian Hill also started relatively strongly, but operations were disrupted frequently due to street construction.
- The 4th/Clement space has also experienced high utilization despite only having been in service for two months.

Other spaces had more moderate levels closer to the control average, and saw greater variation in performance across the six-month period.

- The Harriet/Howard space in SoMa has seen moderate performance, but experienced a dip in utilization that has since started to rise again. The space is located next a residential development that is currently under construction. Residents from those units are expected to use the space regularly.
- The spaces in Dogpatch and Glen Park (3rd/22nd and Bosworth/Brompton, respectively) started with low utilization. However, they have had significant growth in unique users and utilization over the evaluation period. These spaces are located on the fringe of small commercial areas and can be accessed easily by surrounding residents.

Spaces that were launched in new markets had varied results.

- The Outer Sunset spaces (Judah/43rd and Judah/44th) were not expected to do well initially. However, they have experienced a growth of unique users and utilization that exceed expectations, especially for their location and having only been in operation for six months. While the Outer Sunset is primarily a residential area, these spaces benefit from the visibility of being nearby a small commercial area and the N-Judah.
- The Bayview space at Carroll/3rd has had very low utilization rates and unique users. City CarShare recently launched another off-street pod in the Bayview, which may improve the network effect of car sharing pods and increase utilization.

# Operation of on-street spaces

This section summarizes how well on-street parking spaces operated as dedicated zones for on-street car sharing.

## Enforcement

Other cities have noted that one of the key challenges to on-street pods has been preventing unauthorized drivers from parking in the spaces. When a member tries to return a vehicle and the space is blocked, the member must park the vehicle at another space, which may be subject to other restrictions (e.g., meter payment or street sweeping). This often leads to a citation being issued to the vehicle since it is not parked at its assigned space and thus not exempt from restrictions. More importantly, this causes inconvenience for the member returning the vehicle and can also prevent other members from using the vehicle until City CarShare can retrieve it.

Table 1 shows the number of reported incidents of unauthorized drivers blocking on-street spaces, as reported by City CarShare's members.[3]

**Table 1: Reported incidents of unauthorized drivers blocking on-street spaces**

| Space | October | November | December | January | February | March | April |
|---|---|---|---|---|---|---|---|
| Mission: Valencia & 17th | 8 | 15 | 15 | 9 | 12 | 10 | 6 |
| Russian Hill: Taylor & Pacific | 7 | | 1 | 4 | 2 | 1 | |
| Pacific Heights: Clay & Fillmore | 1 | 2 | 4 | 2 | 1 | 4 | 1 |
| Russian Hill: Polk & Greenwich | 2 | | | | | | |
| Outer Sunset: Judah & 44th | | 1 | 1 | 4 | 3 | 1 | 1 |
| Glen Park: Bosworth & Brompton | | 1 | | 1 | 3 | | |
| Outer Sunset: Judah & 43rd | | 1 | 1 | 1 | 5 | 1 | 1 |
| SOMA: Harriet & Howard | | | | | | | 1 |
| Bayview: Carroll & 3rd | | 1 | | | | | 1 |
| Dogpatch: 3rd & 22nd | | | 1 | | | | |
| Inner Sunset: Judah & 12th | | | | | | 1 | |
| Inner Richmond: 4th & Clement | | | | | | 1 | |
| **Total** | **18** | **21** | **23** | **21** | **26** | **19** | **11** |

[3] This date is based on the number of times a member called City CarShare at the end of their reservation to report that they could not return the vehicle at the designated space because it was blocked by another vehicle. This may undercount the number of actual incidences of illegal parking.

The Valencia/17th, Taylor/Pacific and Clay/Fillmore spaces had many repeated incidences of blocked spaces, while rates were low for the other spaces. City CarShare reported that these reports tended to be most frequent in the afternoon and evening.

Generally, the high levels of unauthorized parking are suspected in areas and times with high parking demand. Since the Valencia/17th and Clay/Fillmore spaces are located in SF*park* pilot areas, the SFMTA used parking sensor data to analyze parking demand in these areas.

**Table 2: Parking sensor occupancy data, noon-midnight, October 2011-April 2012**[4]

| Block | 12pm | 1pm | 2pm | 3pm | 4pm | 5pm | 6pm | 7pm | 8pm | 9pm | 10pm | 11pm | 12-hour summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 Valencia | 76% | 76% | 74% | 74% | 74% | 79% | 85% | 86% | 86% | 86% | 84% | 81% | **80%** |
| 2400 Clay | 87% | 88% | 88% | 87% | 84% | 83% | 88% | 88% | 82% | 66% | 57% | 59% | **80%** |

Total occupancy from noon to midnight was 80 percent in both locations. Occupancy rates were generally higher around the Clay/Fillmore location than the Valencia/17th location. In spite of having similar occupancy levels to Clay/Fillmore, the Valencia/17th space had an extraordinarily high rate of unauthorized parking, and the higher rates cannot be attributed to high parking demand alone. The Valencia/17th space is the only pilot location that is on the main commercial street; while there are many locations in commercial zones, other spaces are located on the fringe of the commercial area or in a space on a less frequented cross street.

In March 2012, the SFMTA started targeted enforcement of these spaces. In particular, the SFMTA directed Parking Control Officers to the Valencia/17th, Clay/Fillmore, Taylor/Pacific, and 4th/Clement locations during the afternoons and early evenings. This appeared to have a positive effect as the incidence of blocked spaces dropped in March and April. Table 3 shows the total citations issued at each on-street space.

[4] The SFMTA gathers parking occupancy data from sensors in the SF*park* pilot and control areas. The SFMTA's analysis of parking sensor data results in multiple occupancy rates based on various combinations of parking meter operational hours and regulations. For this analysis, the SFMTA used Total Occupancy -- the only parking occupancy measure that can span outside of parking meter operational hours. This does not filter any data based on parking meter restrictions or other parking regulations, and is slightly different than the calculation used for SF*park* demand-responsive rate adjustments.

**Table 3: Citation issuance**

| Space | October | November | December | January | February | March | April |
|---|---|---|---|---|---|---|---|
| Valencia/17th St | 1 | 3 | 3 | 3 | 12 | 15 | 7 |
| Taylor/Pacific | 7 | 3 | 3 | 1 | 1 | 4 | 11 |
| 4th Ave/Clement | | | | | | 4 | |
| Clay/Fillmore | 1 | | 1 | | | | |
| Polk/Greenwich | 2 | | | | | | |
| Judah/12th Ave | | | | | 1 | | |
| **Month Total** | **11** | **6** | **7** | **4** | **14** | **23** | **18** |

## Space markings

In order to designate the space for car sharing parking only, the SFMTA painted a solid line around each space and placed a regulatory sign reading "TOWAWAY NO STOPPING Except SFMTA Car Share Permit 0123", where 0123 is the specific permit number assigned to the vehicle. The SFMTA also posted a sign with City CarShare's logo on each side of the pole so that it is visible to drivers and pedestrians.

**Figure 4: On-street space markings**


Some City CarShare members who used the Valencia/17th space indicated that the signage was too high, and that some people could not tell that the space was restricted. As part of SFMTA's effort to reduce unauthorized parking at the Valencia/17th space, the SFMTA also tested new signage closer to eye level in April 2012.

**Figure 5: Revised signage for Valencia/17th**


In combination with additional enforcement, the rates of unauthorized parking dropped in March and April. City CarShare reports that this trend has continued into May and June. The SFMTA will continue to monitor the rates of unauthorized parking at Valencia/17th and gauge reactions to the new signage.

## Street sweeping

The Department of Public Works (DPW) frequently sweeps on-street parking spaces (as much as four times per week at some pilot locations), and requiring City CarShare to move the vehicle each time would have been impractical. SFMTA collaborated with DPW to exempting the vehicles from street cleaning parking restriction. Per the agreement, City CarShare has been responsible for keeping the space and surrounding area (defined as 25 feet on both sides) clean at a level consistent with the surrounding parking spaces.

The SFMTA and DPW have been satisfied with the cleanliness of the on-street parking spaces, and no issues have been reported.

## Construction

On-street parking spaces can be temporarily closed for construction or special events such as street fairs. For these space closures, signs are typically posted 72 hours in advance. The SFMTA cannot exempt on-street car sharing spaces from these regulations, and during the pilot, City CarShare has been responsible for moving the vehicle from the space and finding an alternate location if necessary. Since removing the vehicle from the space takes it out of service and makes it unavailable to members, it is desirable to avoid this as much as possible.

Throughout the pilot, SFMTA attempted to notify City CarShare of these closures with as much advance notice as possible. City CarShare also maintains close ties to the neighborhoods they operate in, and is generally aware of special events such as Sunday Streets.

However, not all space closures are communicated to SFMTA, particularly those related to construction or utilities. For instance, in December 2011, an electrical outage in the Mission required that PG&E place a temporary generator on Valencia Street in the on-street space. The SFMTA contacted PG&E after the event to improve the communication of such events in the future, but sometimes, the immediate closure of an on-street space is needed.

Additionally, the Taylor/Pacific pod has been removed from service three times due to unrelated construction projects lasting a few weeks (street excavation, curb ramp improvements, and construction on the adjacent property). SFMTA is looking into ways to improve the coordination and communication of construction projects in order to reduce the number and severity of issues for car sharing organizations.

These kinds of closures can result in unexpectedly removing the vehicle from service, and potentially towing car sharing vehicles. This reduces the quality of the member experience with car sharing and can reduce its overall effectiveness.

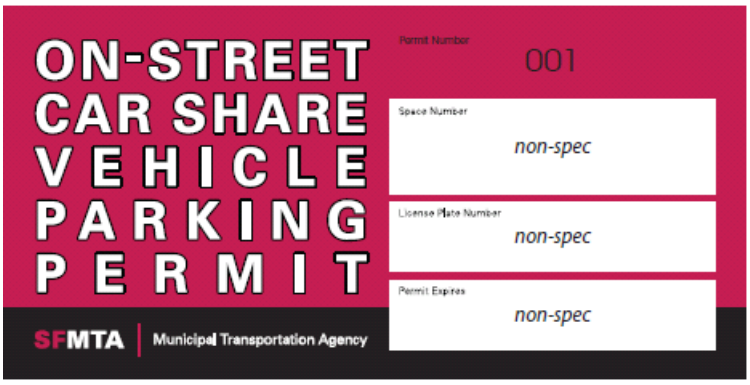
## Program administration

### Permit design

California state law requires that the SFMTA issues a permit that authorizes the vehicle to park in the designated space. This permit also helps with enforcing the spaces, as does the requirement that car sharing vehicles are clearly marked (with logos) as car sharing vehicles.

For the pilot, the SFMTA designed a permit similar to that used in the Residential Parking Permit program. The permit is attached to the lower left side of the rear bumper. The permit contains an individual permit number (for tracking purposes), the space the vehicle is assigned to, the license plate number, and the expiration date.

**Figure 6: On-street car sharing permit design**



While the permit has served the purpose of identifying authorized vehicles, City CarShare has reported some inflexibility in the current system. Because the permit contains the license plate number of the vehicle and is affixed to the vehicle, it is non-transferrable. While City CarShare usually keeps the same vehicle at each of its pods, they will occasionally reassign vehicles to spaces for maintenance or other operational needs (e.g., place a pickup truck where there was previously a sedan).

### Invoicing and payments

The SFMTA currently charges City CarShare $150 per space each month (as legislated in the Transportation Code). This has been based on a basic cost recovery methodology and is also the median of the SFMTA's current off-street car sharing fees. The SFMTA currently invoices City CarShare this monthly rate on a quarterly basis. This schedule strikes and even balance between collecting fees regularly and reducing administrative burden on both sides.

However, reductions in the fee may be reasonable during periods of prolonged space unavailability. During the pilot, some of the on-street spaces were unavailable due to construction and/or special events, but payments were made to the SFMTA based on the premise of having access to the space for the entire month.

Any period that the space is unavailable means that the vehicle is unavailable to members, which reduces the effectiveness of the on-street space. Alternative locations could be identified for temporary use, but they will likely be difficult to enforce since there will be no paint or signage. A temporary closure for a few hours or days may not warrant a reduction in payment, but unavailability that lasts for longer, say, a week or more incurs financial hardship to the car sharing organization. For instance, the Taylor/Pacific space was out of commission on three separate occasions for two to three weeks each. This was due to a pipeline project, a curb ramp installation, and building construction. All occurred separately over the course of the evaluation period.

## User behavior

In early June 2012, City CarShare sent a survey to all users of the on-street pilot spaces. City CarShare offered an incentive to users of the survey and the response rate was 33 percent (217 responses out of 651 total). This section lists the key findings from the survey. The vast majority of respondents to the survey were members prior to the introduction of on-street spaces; new and/or potential members may perceive on-street car sharing spaces differently.

Overall, satisfaction with on-street spaces was high:

- Eighty-nine percent of respondents would recommend the on-street pods to others.
- Though most members claimed that on-street spaces had no influence in their decision to join City CarShare, 37 percent stated that on-street pods were "extremely" or "somewhat" influential. Very few (3 percent) indicated that they became aware of City CarShare due to seeing an on-street pod.

Members also found on-street spaces more visible and accessible than off-street spaces. Respondents rated their experience with on-street spaces as better than their experience with off-street on the following criteria:

- Proximity of on-street space to the member (56 percent of respondents rated on-street as “much better” or “somewhat better”)
- Ease of finding the vehicle (56 percent of respondents rated on-street as “much better” or “somewhat better”)
- Ease of returning the vehicle (44 percent of respondents rated on-street as “much better” or “somewhat better”)

Users of on-street spaces also described automobile ownership trends to all users of car sharing:

- Over half gave up one or more personal vehicles after joining City CarShare (44 percent owned one or more vehicles prior to joining City CarShare whereas only 22 percent of respondents owned a vehicle after joining).
- Car sharing affects automobile ownership. The vast majority of respondents (87 percent) stated that City CarShare membership influences the number of vehicles they own.

Respondents to the survey noted the need for improvements in the following areas:

- Common comments indicated the need for better signage, painted curbs and spaces, lowering the height of signs, increased enforcement, and posting the penalties for violators.
- Of those who would not recommend on-street spaces, the vast majority (20 out of 23) rated the "ease of returning" the vehicle as “much worse” than off-street spaces, due to the spaces being blocked by non-carshare vehicles when they returned.

Survey respondents were divided as to whether or not on-street improved perceived safety:

- Fifty percent indicated that lighting was “about the same” (compared to 35 percent of respondents who indicated that on-street offered “much better” or “somewhat better” lighting)
- Fifty-seven percent of respondents rated their perception of personal safety with on-street spaces as “about the same” as off-street (compared to 33 percent of respondents who indicated that their perception of personal safety was “much better” or “somewhat better”)

## Stakeholder input

Prior to the pilot, the SFMTA worked with local neighborhood groups and members of the San Francisco Board of Supervisors to select the pilot spaces. After the pilot, the SFMTA solicited feedback on the location and/or operation of the pilot spaces.

In general, the on-street spaces were well received in their respective neighborhoods. Respondents were supportive of car sharing and expansion of the program.

## Conclusion and recommendations

These following lessons learned and recommendations will be considered in an expansion of the program:

- **On-street car sharing spaces are technically feasible in San Francisco.** The exclusive designation of on-street spaces to car sharing fulfilled the same operational need as off-street spaces. Exemptions from street sweeping, RPP, and time limits did not pose challenges. Paint and signage may need to be revised or tailored to each location.
- **On-street car sharing spaces can be quickly become well utilized.** Some spaces had very high utilization levels, others were on par with the average, and a few had very low usage. These were primarily related to the market they serve. If located in areas where the demand for car sharing is high, on-street spaces can grow into operational maturity faster than an equivalent off-street space. If on-street spaces are located in a new market, they should not be expected to perform better than an off-street space.
- **Political support is needed for proposed spaces to be approved.** SFMTA will need to balance neighborhood concerns with the locational needs of car sharing to have spaces that will be well utilized and will further the City's policy goals. On-street car sharing spaces will need a broad base of support from CSOs, neighborhood groups, and Supervisors' offices to pass each step of the process.
- **Enforcement of the spaces is important for success.** If too many unauthorized drivers block the spaces, members will become frustrated and utilization can suffer. Targeted enforcement can also restore confidence in the reliability of the space. Even though Valencia/17$^{th}$ and Clay/Fillmore had the highest levels of illegal parking, these locations were still among the most utilized pilot locations. Highly visible paint and signage also helps to identify these spaces as reserved for car sharing only.
- **Commercial areas offer high visibility and accessibility, but may present enforcement challenges.** Spaces should be strategically placed so that they are visible and accessible, but are away from key areas of activity. Locating a space around a corner or across the street may be able to avoid operational problems while still yielding the desired benefits.
- **A transferrable permit gives car sharing organizations needed flexibility.** The California Vehicle Code mandates that cities issue permits to vehicles authorizing them to be parked in on-street car

sharing spaces. Additionally, permits assist with enforcement. However, the permit may not need to be assigned to the specific license plate of the vehicle. If car sharing organizations bear the responsibility for legally owning and frequently maintaining the vehicle and deliver the overall benefits that supports the SFMTA's goals, then it may be unnecessary for the SFMTA to check registrations or place further restrictions on what kind of vehicle can be parked in the space. A transferrable permit would also provide the flexibility that car sharing organizations need to operate efficiently.

- **Recalculate permit fee.** The SFMTA established the $150 per space monthly fee based on an estimate of costs to administer the program. Now that the agency has actual historical data, the SFMTA should reassess assumptions used to calculate the fee and recover costs.
- **Improve efforts to coordinate and communicate parking space closures.** Temporary space closures limit the availability of the vehicle. Frequent and/or prolonged closures may reduce the effectiveness of the space and can place a financial burden on car sharing organizations (which may eventually be passed down to members). Coordination and communication of space closures are difficult throughout the City and present challenges for many programs. The SFMTA is currently developing systems to improve its awareness of temporary closures and to distribute this information.

## Next steps

Overall, the analysis suggests that on-street car share spaces are feasible and can be well utilized in San Francisco. Using lessons learned from the pilot, SFMTA will develop required policies and legislation to allow a larger pilot of citywide on-street car share spaces and will include program rules and guidelines, and criteria for participation. The larger pilot and supporting legislation will be presented to the SFMTA Board for approval in late 2012.

# Appendix A: City CarShare on-street user survey results

(see attached)

# OnStreet Survey

SurveyMonkey

## 1. To be eligible for driving related credit incentives and drawings, please enter your City CarShare member I.D. number below.

| | | Response Average | Response Total | Response Count |
|---|---|---|---|---|
| Member ID: | | 28,524.87 | 6,246,947 | 219 |
| | | | answered question | 219 |
| | | | skipped question | 0 |

## 2. How did you first become aware of City CarShare? (Choose one answer)

| | Response Percent | Response Count |
|---|---|---|
| traditional advertisement (bus, radio, brochure, direct mail) | 0.9% | 2 |
| internet advertisement (e.g., Google, or other internet ad) | 1.4% | 3 |
| **family/friend/colleague** | **34.0%** | **72** |
| saw the cars driving around | 19.8% | 42 |
| saw at an Off-Street Pod location (i.e., where our cars live in a parking lot, a residence or a public garage) | 3.3% | 7 |
| saw an On-Street Pod location (e.g., where our cars live at a designated curb-side space on a city street) | 2.4% | 5 |
| visited a City CarShare booth at a fair /event | 4.2% | 9 |
| saw a competitors advertisements or cars and researched car sharing | 4.2% | 9 |
| cannot remember | 11.8% | 25 |
| Other (please specify) | 17.9% | 38 |
| | **answered question** | **212** |
| | **skipped question** | **7** |

**3. Please rate how important the availability of On-Street Pod locations were in your decision to join City CarShare?**

| | Response Percent | Response Count |
|---|---|---|
| **Not At All Important** | **62.7%** | **133** |
| Extremely Important | 18.4% | 39 |
| Somewhat Important | 18.9% | 40 |
| **answered question** | | **212** |
| **skipped question** | | **7** |

**4. Please rate your satisfaction level with the On-Street Pod(s) you have used, as compared to other City CarShare Pod(s) you have used (such as garages, lots, residences, etc.), based on the following attributes: (Please make a choice for each attribute.)**

| | Much Better | Somewhat Better | About the Same | Somewhat Worse | Much Worse | Don't Know/Can't Answer | Response Count |
|---|---|---|---|---|---|---|---|
| Proximity / Closeness of Pod to you | 33.0% (70) | 23.1% (49) | **34.9% (74)** | 5.7% (12) | 0.9% (2) | 2.4% (5) | 212 |
| Ease of Finding Vehicle | 28.0% (59) | 27.5% (58) | **30.3% (64)** | 8.1% (17) | 3.8% (8) | 2.4% (5) | 211 |
| Ease of Returning Vehicle | 25.2% (53) | 19.0% (40) | **25.7% (54)** | 11.4% (24) | 15.7% (33) | 2.9% (6) | 210 |
| Lighting | 15.8% (33) | 20.1% (42) | **50.2% (105)** | 5.7% (12) | 0.0% (0) | 8.1% (17) | 209 |
| Condition of Pod (litter, graffiti, etc.) | 8.1% (17) | 13.7% (29) | **65.4% (138)** | 9.0% (19) | 0.9% (2) | 2.8% (6) | 211 |
| Vehicle Selection | 6.2% (13) | 6.7% (14) | **64.1% (134)** | 17.2% (36) | 1.4% (3) | 4.3% (9) | 209 |
| Perception of Personal Safety. | 12.1% (25) | 20.8% (43) | **57.0% (118)** | 5.3% (11) | 1.0% (2) | 3.9% (8) | 207 |
| | | | | | | **answered question** | **212** |
| | | | | | | **skipped question** | **7** |

**5. Based on your experience to date, would you recommend using the On-Street Pod(s) to others?**

| | | Response Percent | Response Count |
|---|---|---|---|
| **Yes** |  | **89.2%** | **189** |
| No |  | 10.8% | 23 |
| | | **answered question** | **212** |
| | | **skipped question** | **7** |

## 6. What suggestions, if any, do you have for improving the On-Street Pod(s) you have used?

| | Response Count |
|---|---|
| | 146 |
| **answered question** | **146** |
| **skipped question** | **73** |

## 7. Since joining City CarShare, please indicate your frequency of using the following modes of transportation ... (please make a choice for each option)

| | More Often | About the Same | Less Often | Never Used | Response Count |
|---|---|---|---|---|---|
| Bus/Train | 17.7% (36) | **61.6% (125)** | 19.2% (39) | 1.5% (3) | 203 |
| Taxi | 8.9% (18) | **40.9% (83)** | 39.9% (81) | 10.3% (21) | 203 |
| Bicycle | 16.3% (33) | 31.5% (64) | 6.9% (14) | **45.3% (92)** | 203 |
| Walk | 23.6% (48) | **68.0% (138)** | 7.4% (15) | 1.0% (2) | 203 |
| Scooter/Motorcycle | 3.4% (7) | 9.9% (20) | 3.9% (8) | **82.8% (168)** | 203 |
| Car | 6.9% (14) | 31.0% (63) | **35.0% (71)** | 27.1% (55) | 203 |
| Ferry | 3.9% (8) | 29.1% (59) | 8.4% (17) | **58.6% (119)** | 203 |
| | | | | **answered question** | **203** |
| | | | | **skipped question** | **16** |

## 8. What are the typical reasons that you most often reserve a City CarShare vehicle for? (Select all that apply)

| | Response Percent | Response Count |
|---|---|---|
| grocery shopping | 65.5% | 133 |
| **shopping for other items (household / personal)** | **66.0%** | **134** |
| run miscellaneous errands (post office, cleaners, etc.) | 61.6% | 125 |
| commute to work / school | 7.4% | 15 |
| work related appointments or meetings | 32.5% | 66 |
| attend personal appointments / meetings / place of worship | 41.4% | 84 |
| visit family/friends within the Bay Area | 43.3% | 88 |
| overnight trips outside of Bay Area (e.g., visits, camping, skiing, general tourism) | 29.1% | 59 |
| Other (please specify) | 18.7% | 38 |
| | **answered question** | **203** |
| | **skipped question** | **16** |

## 9. On average, approximately how many times do you use City CarShare per month?

| | Response Percent | Response Count |
|---|---|---|
| 0-1 | 20.3% | 41 |
| **2-5** | **65.3%** | **132** |
| 6-10 | 10.9% | 22 |
| 11-15 | 2.5% | 5 |
| 16 or more | 1.0% | 2 |
| | **answered question** | **202** |
| | **skipped question** | **17** |

## 10. How do you MOST typically get to a City CarShare Pod? (select one)

| | Response Percent | Response Count |
|---|---|---|
| Other | 0.5% | 1 |
| **Walk** | **85.7%** | **174** |
| Bicycle | 4.4% | 9 |
| Scooter/Motorcycle | 1.5% | 3 |
| Bus/Train | 7.9% | 16 |
| Taxi | 0.0% | 0 |
| Someone drives me in a car | 0.0% | 0 |
| | Other (please specify) | 4 |
| | **answered question** | **203** |
| | **skipped question** | **16** |

**11. If you did not have carsharing as an option, how would you have otherwise completed the trips you typically used City CarShare for?**

| | | Response Percent | Response Count |
|---|---|---|---|
| **Bus/Train** |  | **61.1%** | **124** |
| Taxi |  | 41.4% | 84 |
| Bicycle |  | 17.2% | 35 |
| Walk |  | 30.0% | 61 |
| Scooter/Motorcycle |  | 5.9% | 12 |
| Borrow Car |  | 40.4% | 82 |
| Use Personal Car |  | 14.8% | 30 |
| Carpool/Rideshare |  | 7.9% | 16 |
| Would not have made the trip |  | 38.9% | 79 |
| | | Other (please specify) | 36 |
| | | **answered question** | **203** |
| | | **skipped question** | **16** |

## 12. How many motor vehicles did you (your household) own prior to joining City CarShare?

| | Response Percent | Response Count |
|---|---|---|
| **0** | **54.2%** | **110** |
| 1 | 35.0% | 71 |
| 2 | 8.9% | 18 |
| 3 | 0.5% | 1 |
| 4+ | 1.5% | 3 |
| **answered question** | | **203** |
| **skipped question** | | **16** |

## 13. How many motor vehicles do you (your household) own now?

| | Response Percent | Response Count |
|---|---|---|
| **0** | **77.8%** | **158** |
| 1 | 16.3% | 33 |
| 2 | 4.4% | 9 |
| 3 | 1.0% | 2 |
| 4+ | 0.5% | 1 |
| **answered question** | | **203** |
| **skipped question** | | **16** |

## 14. How many motor vehicles are you (your household) likely to own in the next 12 months?

| | Response Percent | Response Count |
|---|---|---|
| **0** | **68.5%** | **139** |
| 1 | 24.1% | 49 |
| 2 | 5.9% | 12 |
| 3 | 1.0% | 2 |
| 4+ | 0.5% | 1 |
| | **answered question** | **203** |
| | **skipped question** | **16** |

## 15. Please rate the extent to which your membership with City CarShare influences the number of vehicles you (your household) owns/leases?

| | Response Percent | Response Count |
|---|---|---|
| **extremely influential** | **43.3%** | **88** |
| somewhat influential | 42.9% | 87 |
| not at all an influence | 9.4% | 19 |
| unknown / can't say | 4.4% | 9 |
| | **answered question** | **203** |
| | **skipped question** | **16** |