

# Getting More with Less:

Managing Residential Parking in Urban Developments  
with Carsharing and Unbundling

## BEST practices



## EXECUTIVE SUMMARY

In recent years a number of cities have enacted policies and programs that encourage carsharing and unbundled parking to help create walkable, transit-supportive neighborhoods with minimized parking and traffic impacts while ensuring that new development is still marketable. Findings of a 2010 study that surveyed residents living in 13 buildings in downtown San Francisco suggest that the presence of both carsharing and unbundled parking in residential developments has a significant impact on vehicle ownership and that carshare members have significantly lower levels of vehicle ownership and drive alone rates than non-carshare members. The survey also found that having carsharing onsite or nearby was a significant factor in the residential location decision for survey respondents living in households with no owned or leased cars available and that the presence of both carsharing and unbundled parking within a building affects residents' decision to become carshare members.

From an operator's perspective the determination of suitable locations and projects for carsharing is based on a number of factors. An ideal carshare location must have a mix of uses, high density, good pedestrian environment, low vehicle ownership rates, access to basic services and transit and an on-site parking ratio under 1:1. At the community level, carsharing can be successful once ample community support has been established and there is a strong champion for carsharing, such as a local government or business association. From a developer's perspective, providing carsharing on-site can serve as an on-site amenity that can help attract buyers or rental tenants as well as increase the sustainability of a project.

## introduction

Parking is a chronic headache for many residents and businesses in major cities. But policy makers and developers are increasingly realizing that simply building more parking is not the solution. In major urban areas, parking can add 20% to the cost of a residential unit, and reduces the potential number of units on a parcel by 20%. At the same time, more parking can exacerbate problems with traffic congestion and greenhouse gas emissions.

Cities are increasingly recognizing the harm caused by excess parking, and the trend is to abolish requirements for developers to build a minimum number of spaces – especially in downtowns and other dense, transit-rich parts of the city. San Francisco, California; Portland, Oregon; and Cambridge, Massachusetts, have even introduced caps on parking in some districts. Carsharing and unbundling are two innovations that can help make reduced parking succeed, and promote transit-focused developments with more affordable housing. Carsharing and unbundled parking are defined as:

- > **Carsharing** allows members to reserve cars on a short-term (hourly or daily) as-needed basis, paying only for the time they use the car and the mileage they drive. The operators of the carsharing program provide vehicle maintenance, repair, gas, and insurance.
- > **Unbundling** separates parking costs from rents or housing sale prices, allowing residents to choose how much parking they want – and ensuring that non-car owners do not pay for parking they neither want nor need.

Carsharing provides members with access to a fleet of shared vehicles, making it easier for households to live without a car or a second vehicle. Developers can promote carsharing by providing spaces in their parking facilities, by providing free memberships to tenants, and by promoting the service to their staff and residents. Some developers provide carsharing on a voluntary basis as an amenity to tenants, while others may be required to do so in order to mitigate their transportation and parking impacts. San Francisco now mandates carsharing in large developments, while others such as Austin, Texas, and Vancouver (BC) reduce parking requirements for projects that include carsharing. Many other cities do so on a case-by-case basis.

Unbundling residential parking costs from the cost of housing can significantly reduce household vehicle ownership and parking demand. Unbundling can be



implemented on a for-sale basis or on month-to-month lease basis, which provides even greater flexibility. With a lease, residents receive a monthly reminder of how much they are spending on a parking space, and have the option to forego this space if they no longer need it. San Francisco now requires unbundled parking in new residential developments with 10 or more units.

The benefits of both carsharing and unbundling in reducing parking demand and car use are well documented. Recent U.C. Berkeley studies found that between 24% and 29% of City CarShare members have sold a car in the past two years. These benefits have been confirmed by studies in cities such as Philadelphia and Chicago, as well as national surveys. And although research is scarcer, unbundling can reduce parking demand by as much as 30%.

In the last few years, San Francisco and neighboring cities have adopted the most ambitious policies in the world to promote both carsharing and unbundling. Northern California thus provides some of the most extensive experience with implementing innovative parking policies, and offers lessons for cities, developers, and carsharing organizations in the Bay Area and beyond.

The first half of this report profiles the experience of developments that have unbundled parking and provided carsharing for their residents in the Bay Area as well as reflections from planners and developers on what are the factors for successfully implementing carsharing and unbundled parking. The second half of this report describes the findings from a complementary study that surveyed residential developments in San Francisco to determine how the presence of carsharing and unbundled parking affects vehicle ownership, commute mode, location choice, and parking choice.

## **moving from case-by-case to regulation**

Many North American cities use carsharing and unbundling as mitigation measures in conditions of approval for new developments. The City of San Francisco Planning Department has taken the inclusion of these two strategies to a whole new level by formalizing carsharing and unbundled parking regulations. In April 2008, Section 166 of the Planning Code was amended, stipulating that in newly constructed residential projects or in existing build-

ings converted to residential uses, if parking is provided, carshare parking spaces must be provided as follows:

- > 0-49 units – 0 carshare spaces
- > 50-200 units – 1 carshare space
- > 201 or more units – 1, plus 1 for every 200 dwellings units over 200

Only certified carsharing organizations as defined in the Code may be used and parking spaces must be made available free of charge. The ratios were determined by an approximation as San Francisco was the first city to enact such requirements. The decision to require carsharing was motivated by several objectives: to create more space for carshare vehicles, reduce auto ownership, and reduce the space devoted to parking. Due to the recent implementation of carsharing requirements, it is too soon to speculate what impacts these requirements will have. Furthermore, there is currently no enforcement mechanism for ensuring that developers are complying with the requirements.

Concurrently, the City of San Francisco expanded its unbundling ordinances to encompass all new residential developments. Under Section 167 of the Planning Code, all off-street parking spaces available for residential uses in new or converted structures of ten dwelling units or more must be leased or sold separately from the rental or purchase fees for the life of the dwelling unit. Previously, unbundled parking was required on an ad-hoc basis. It is important to note that carsharing and unbundling legislation was adopted at the same time as parking requirements were lowered or eliminated. Both strategies are viewed as part of a larger, complementary package of transportation initiatives.

The success of unbundling requirements has been mixed. There have been significant problems with developers not adhering to the full intentions of the unbundled parking requirements, with roughly 80% of projects not presenting unbundled parking in a clear and understandable way to potential buyers, according to staff. This is partly due to a disconnect between the developer and property managers or whomever is marketing the project. As a result, the City has been debating potential changes, including the possibility of eliminating the option to sell parking and only allow parking to be leased.



# SOMA RESIDENCES

## Project Specifics

**Number of Units:** 278 rental units, studio, 1-bedrooms, live/work lofts

**Percentage of low-income units:** Almost 20 percent (55 units)

**Target Market:** Young professionals and students

**Parking:** 250 unbundled spaces, approximately 200 are occupied by residents and 30 by nonresidents, 2 carsharing vehicles

**Date of Opening:** 2000

## Carsharing Program

In 2006, the Community Manager of the SOMA Residences approached the owner of the building regarding the possibility of housing a carsharing vehicle onsite as an amenity for residents, many of which are international students who do not own cars. The property owner agreed and City CarShare was selected. In 2008, a second carsharing vehicle was added due to the high levels of usage of the first car. The inclusion of carsharing was not required as part of the zoning approvals process, as it predated the City's requirements.

SOMA Residences has a non-exclusive agreement with City CarShare; the vehicles are available for use by non-residents and residents. Non-resident users have a separate ground level door entrance to the garage that can be opened only with their City CarShare key fob. All the spaces in the garage are reserved, including the carsharing spaces which are marked with a City CarShare placard, so as a result there have been no complaints about misuse.

City CarShare initially paid **\$150 per month** for each parking spot. In 2006, when the first carsharing vehicle was introduced, this monthly fee was the same as the monthly rate for resident parking. While resident parking prices have increased to keep pace with market prices, the cost to City CarShare has remained **relatively low** because the owners view carsharing as an amenity to the tenants.

An advertisement for City CarShare is included in the welcome/move-in packet for new residents. The availability of City CarShare service is also highlighted in advertisements the company places in renter magazines.

## Unbundled Parking Program

The development was planned in conjunction with the Redevelopment Agency using City funding. Its location in a transit-rich, dense neighborhood as well as the inclusion of below market rate units helped with gaining approvals. As part of the approval process, the project was required to unbundle parking.

Parking is managed onsite by the Community Manager. The cost per parking space is different for residents versus non-residents. Up until Summer 2008, the monthly fee for non-residents was \$275; however, other buildings in the area were charging less, so they reduced the price to \$250 in order to better compete with nearby buildings. Resident parking costs \$200 a month. Market surveys are conducted every quarter to determine demand for parking and appropriate level of parking pricing. Since the parking agreements are offered month to month they can easily be modified to reflect any increases or decreases in parking prices.

The limit is one parking space per person on the lease. If a resident would like to lease an additional parking space, they are charged the non-resident rate. Approximately 125 residents have opted not to lease parking.

## Outcomes and Recommendations

The Community Manager sees a number of different benefits from carsharing. Firstly, it is an amenity that can be marketed to potential residents, particularly people who are new to the area and do not have cars. Secondly, since the carsharing vehicles are open for use by non-residents, it brings people who may then become interested in renting an apartment to the building. Thirdly, carsharing gives the project an image of being environmentally friendly and energy efficient, as well as modern.

Overall, carsharing has been quite successful and the Community Manager would encourage other developers to include carsharing while recommending that the cars be located in a highly visible area. However, some prospective tenants have chosen not to rent in the building due to the lack of free parking, especially those who are new to San Francisco. Still, some people are more accepting of having to pay for parking when they see the going rate for parking spaces in the area.

*Interview with Adam Whittager, former Community Manager, SOMA Residences*



# CUBIX YERBA BUENA

## Carsharing Program

Several of the architects involved in the design of this project recommended carsharing to the head of their firm as an important amenity and selling point to prospective buyers. They saw carsharing as a good fit given the demographics of the project and the project's proximity to transit. Additionally, the extremely limited number of parking spaces meant that the majority of residents would not be able to house a vehicle onsite. The decision to participate in carsharing was based on these factors and was voluntary; codified City requirements for carsharing had not yet been adopted when the project was approved.

City CarShare has worked with the same architecture firm before on other projects and they approached the firm to see if they would be interested in housing a carsharing vehicle at this location. City CarShare was also the only carsharing company that was willing to enter into an agreement with a project before construction was complete.

A non-exclusive agreement was made and City CarShare pays \$150 a month for the parking space; though they do not typically pay for parking spaces in residential projects, the service was not required by the City and thus the developer had more leverage in negotiating with City CarShare as City Code prohibits charging for required carsharing spaces.

In the marketing materials provided to prospective buyers, carsharing is advertised as an amenity in the building.

## Unbundled Parking Program

The decision to unbundle parking was not required by the City. However, it was a practical necessity given that there are only 5 parking spaces for 98 units. It is also standard practice for the developer. The total number of parking spaces was negotiated with the City of San Francisco in cooperation with the Redevelopment Agency, who was the developer's partner on the project. Under the use category Single-Occupancy Room, the parking requirement is one space for every 20 units, which this project meets.

Both commercial and residential tenants will be given the opportunity to lease a parking space. The final price has not been set but will be around \$200 per month according

## Project Specifics

**Number of Units:** 98 for sale units, all Single Occupancy Room (SOR) units of less than 300 sq ft

**Percentage of low-income units:** 10 percent

**Target Market:** Single persons with preference of a transit accessible location

**Other Uses:** 5 ground floor commercial spaces

**Parking:** 5 unbundled spaces with preference given to commercial tenants, 1 carsharing vehicle

**Date of Opening:** August 2008

to market rate at the time. Free parking may be offered until the building is fully occupied. A formal limit on the number of spaces per residents has not been set, but most likely it will be one space per tenant. The HOA will be responsible for managing the parking. Unlike many condominium projects, parking spaces will not be sold, which ensures that parking can be managed flexibly and unbundled during resale as well.

## Outcomes and Recommendations

Benefits to the project for providing a carsharing vehicle include being able to offer prospective buyers an amenity that is easy to use and hassle free, according to the project coordinator. In the larger picture, inclusion of carsharing gives the project a sense of "greenness" and environmental friendliness, as well as a modern image and that they "are with the times".

One of the major benefits of unbundling parking is that it gives the developer an opportunity to generate additional revenue and recoup and reduce a portion of parking costs, which are significant given the high cost of building parking. Additionally, the developer sees unbundled parking as a more flexible way to meet the needs of tenants, since only those who need parking will be required to pay for it.



# 1180 HOWARD STREET

## Project Specifics<sup>1</sup>

**Number of Units:** 74 rental units, mix of 1-, 2-, and 3-bedrooms

**Percentage of low-income units:** All low-income, for persons who are 50% to 60% of the median income

**Target Market:** Low income families

**Other Uses:** Commercial on the ground floor (Harvest grocery store)

**Parking:** 66 parking spaces—4 of which are for the commercial space, all are currently used by the grocery, 1 carsharing vehicle

**Date of Opening:** 2003

## Carsharing Program

The developer, Citizens Housing, felt that the inclusion of a carsharing vehicle was a great idea and would be a cost saving amenity for the tenants. The decision to include carsharing was made before the City of San Francisco Planning Department adopted formal requirements. The developer knew the people who started City CarShare and contacted them regarding the possibility of placing a vehicle at this project site. According to the developer, “It was just us making a good decision to work with a good organization.”

The carsharing vehicle is open to residents at both 1180 and 1190 Howard, commercial tenants, as well as non-residents. The carsharing parking space is marked with a City CarShare placard and non-residents access the vehicle with a City CarShare key fob at the entrance to the garage. Since it is not possible for non-residents to access the rest of the building from the garage, there have been no security problems.

City CarShare is not charged for the parking space and it is unlikely that another carsharing vehicle will be added due to the lack of parking spaces for residents and the waiting list for existing parking spaces.

No marketing of the carsharing vehicle is done. However, since there is a waiting list for parking, the property manager informs them that there is a City CarShare vehicle as an alternative to the limited parking.

## Unbundled Parking Program

Parking is unbundled but is free of charge due to State restrictions for affordable housing developments. Developments that use State and Federal funding are prohibited from charging for parking separate from the cost of housing. The number of parking spaces constructed was determined by physical constraints of the site and design of the building.

Parking is first-come, first-served and there is a waiting list for those residents who would like a spot. The limit is one space per unit regardless of the number of bedrooms. Parking is covered under the rental lease agreement and there is no time limit on how long a tenant can have a parking space. Parking is managed by the Property Manager. From the Property Manager’s observations, some residents have two or three cars. This is a result of families who need them for work, thus carsharing is not an option for them. The Property Manager thinks that these families either park on-street or rent spaces in other buildings.

## Outcomes and Recommendations

Based on the Property Manager’s observation, the City CarShare vehicle seems to be occupied a good percentage of the time; however, the majority of users appear to be non-residents. Regardless, the Property Manager still feels that carsharing is a benefit for residents who do not own a car and that it is convenient and would recommend the program to other developers.

Marketing is one area where the program could be improved. Ideally the Property Manager would better market the program, and have informational flyers to distribute, or City CarShare would come and give a presentation.

*Interview with: May Ling, Property Manager, 1180 Howard Street*

*<sup>1</sup>1190 Howard shares the City Carshare vehicle and is part of the same development, 88 units for students, no parking provided.*



# MINT COLLECTION

## Carsharing Program

The inclusion of carsharing at the Mint Collection was promoted by the project owner as an amenity to residents since there is less than one space every unit. The developer chose City CarShare because it is a local nonprofit. The pricing structure of City CarShare is more favorable to local, short trips, which the developer felt would be most useful to residents. The inclusion of carsharing was not required by the City of San Francisco.

Martin Building Company (MBC) has a formal two-year exclusive use agreement with City CarShare. It does not allow any non-tenant users to access the vehicle (although tenants have access to all vehicles in the carshare fleet). In addition to residents, commercial tenants and MBC on-site employees can access the vehicle. The exclusive use agreement was selected for several reasons:

- > The development is near transit, which supports low vehicle ownership and carsharing usage.
- > The building has less than half a parking space per unit (if the units in all four buildings are counted).
- > The owner could replace company vehicles with a carsharing vehicle on-site.

Under the agreement, the building owner pays \$10/month account (household) on behalf of residents. It guarantees City CarShare \$1,600 a month in user revenue; if usage falls below this level, the owner must pay the difference. Currently, there are 38 people participating in the program. Although the developer had to cover some guaranteed revenue during the initial stages of the program, usage has been high enough to cover the minimum revenue requirement.

The parking space is located in a three-story mechanical parking lift and is marked with a City CarShare placard. There have been no complaints about misuse (e.g. illegal parking) or security problems. Information on City CarShare is provided to new tenants and included in marketing materials for prospective tenants.

## Unbundled Parking Program

Unbundled parking was not required by the City of San Francisco, but is standard practice for the developer. This project was an adaptive reuse of an existing commercial building and the number of parking spaces

## Project Specifics

**Number of Units:** The Mint Collection is comprised of 4 buildings. This review focuses on the two buildings at 410 and 418 Jessie St, which house the project's entire parking supply: 410 Jessie Street (52 for-sale units) and 418 Jessie Street (25 rental units)

**Percentage of low-income units:** 10 percent

**Target Market:** High end, entry level

**Other Uses:** Retail spaces on the ground floor

**Parking:** All spaces are unbundled; one 3-car high mechanical lift with one carsharing space, one 12-car high computerized puzzle lift

**Date of Opening:** June 2007

was determined by the physical limitations of the building. As a result, a variance was granted by the City to allow for fewer parking spaces. The use of parking lifts in both buildings maximizes the space for parking.

MBC owns and manages all parking spaces. Residential tenants are offered a month-to-month lease. The limit is one parking space per unit. Currently all parking spaces are occupied. Commercial tenants are not eligible for parking. The cost of parking is \$300 a month. The fee is reviewed annually and adjusted as needed. Although the lack of an entitled parking space has been a deterrent to some prospective buyers, all for-sale units have been sold.

## Outcomes and Recommendations

Carsharing (with exclusive access) has been a selling point at the Mint Collection to potential residents. For some residents, like families with children, having access to carsharing eliminates the need for a second vehicle. Also, given the lack of parking spaces, the presence of a carsharing vehicle onsite, makes low vehicle ownership more palatable. Carsharing has been highly successful in this project and the developer will include carsharing vehicles at other projects as well, and recommends it to other developers. Property management also recommends unbundling of parking, as it provides a revenue source and a way to recoup parking costs.

*Interview with: Katie O'Brian, Development Manager, Martin Building Company*



# 200 SECOND STREET

## Project Specifics

**Number of Units:** 70 for-sale units; mix of 1-, 2-, and 3-bedrooms. Only half of the units have been sold, so vacant units are now being rented.

**Percentage of low-income units:** None

**Target Market:** Higher end, entry level. About half of the residents are architects and designers. Average age seems to be low 40's and many are single.

**Other Uses:** 4 live/work apartments, 1 retail space

**Parking:** 81 spaces. Not unbundled, limit of 1 space per unit. 1 carsharing vehicle.

**Date of Opening:** 2007

## Carsharing Program

As part of the conditions of approval process, the City of Oakland required the developer to provide one carsharing vehicle for a minimum of two years, to address a proposed parking ratio of one space per residential unit, which was significantly lower than City parking requirements. The City of Oakland also recommended that the developer use City CarShare as the service provider.

The development has an exclusive agreement with City CarShare that guarantees the operator revenue of \$1,700 a month for two years. After the initial two-year agreement has expired the HOA will decide if it wants to maintain carsharing in the development. An open agreement was not considered due to security concerns regarding non-tenants accessing the building via the garage, as the design of the building does not prevent this.

A City CarShare placard marks the parking space designated to carsharing and there have been no problems with enforcement or complaints about misuse. Marketing included an initial presentation to the sales team that included materials such as "Selling Tips and Talking Points" for realtors, copies of a flyer to distribute to potential buyers and residents, and a sign up sheet for sales staff to include with other sales forms to incorporate the carshare sign up process with the sales process. The carshare service is listed on the website as an amenity and an onsite orientation was given to residents about how to use carsharing.

## Outcomes and Recommendations

Overall, carsharing has not been successful at this location as only a few households regularly use the vehicle; thus, the developer has had to cover most of the monthly costs, resulting in an approximate annual cost of \$20,000 to the developer. The developer thinks the lack of success is due largely to the demographics of the tenants, who are generally single households. There are very few couples and families with a need for two cars, one of which could be the carshare vehicle. Additionally, there is ample on-street parking in the area, and parking is provided at no charge to residents. Once the two-year period is over, the developer will no longer cover the cost of carsharing.

While carsharing has not worked well at this location, the developer would be willing to offer the service in future projects. It is also believed that there could be a more hands-on introduction to the service, or a computer kiosk in a main area that could be set up to introduce both residents and prospective buyers to City CarShare.

For fellow developers considering carsharing, the developer felt it was important to consider the demographics and size of the project, as these factors play a crucial role in determining if carsharing is appropriate and if it will be successful. He also noted that developers should carefully consider the length of the contract and an appropriate timeframe. While it may take a while for carsharing to gain in popularity, the developer may have to cover much of the cost over a significant period.



# SOMA GRAND

## Carsharing Program

During the approvals process for this project, Livable City, a non-profit advocacy organization, voiced its concerns to the Planning Commission regarding the bulk and height of the proposed garage. As a result, a condition of approval was made requiring the garage to be reduced from five to four stories and the inclusion of two carsharing vehicles in perpetuity.

The developer was familiar with City CarShare and chose to use the organization because of its local, non-profit nature and a desire to support local businesses. The developer has a non-exclusive agreement with City CarShare, meaning non-residents may use the carsharing vehicles and City CarShare is not charged for the parking space. Carsharing is advertised in the developer's marketing materials, such as the project's website.

There are two carsharing vehicles on the ground floor with City CarShare placards marking the spaces. One of the vehicles is a smart car, which the developer donated to City CarShare for this location. He noted it has been very popular. The developer is open to increasing the number of carsharing vehicles at this project, particularly if the building's tenants have high levels of usage.

## Unbundled Parking Program

Similarly, unbundled parking was required as a condition of approval for the project by the Planning Department. The total number of spaces provided was the maximum number of spaces that could physically fit within the bulk and height restrictions set under the conditions of approval.

The developer has retained ownership of the garage. Residents who choose to purchase parking at a cost of \$45,000 per space, are given a purchasing license or entitlement which then becomes linked to the apartment in case of resale. The parking is managed by a third party, and valet service is provided.

There is a limit of one parking space per unit, and the parking spaces have been priced such that 25 percent of residents will choose not to purchase parking, which is the ratio of parking spaces to units (for every four units there are three parking spaces).

## Project Specifics

**Number of Units:** 246 for-sale units; a mix of 1, 2, and 3-bedroom units

**Percentage of low-income units:** 12 percent

**Target Market:** Higher end, entry level

**Other Uses:** Ground-floor commercial space

**Parking:** 360 unbundled spaces, entitled to 504 spaces, 2 carsharing vehicles

- > 185 allocated to commercial uses
- > 145 allocated to residents

**Date of Opening:** December 2007

Commercial tenants may use the public parking portion of the garage, which is first-come, first-served, with an hourly rate based on market rates in the area that are reviewed periodically.

## Outcomes and Recommendations

While demand for residential parking spaces does not seem to have outnumbered supply, the developer notes in his conversations with owners, that most own at least one car and if they do not have an onsite parking spaces they have purchased a parking space elsewhere in the area. The demographics of the typical buyer partly explains this as it is a more upscale affluent group who tend to own cars.

Carsharing has been a success at this location and the developer would recommend that other developers include carsharing. The developer believes that carsharing should be included in all projects as it is an important component of creating a transit-oriented lifestyle; one where people can use modes other than cars to get around and potentially walk to numerous destinations.

While the developer supports the idea of unbundling and would recommend it to other developers, he does not support the policy when used in conjunction with reduced parking requirements. In their experience, some households will rent cheaper parking spaces in the neighborhood as a result of unbundling.



# impact study: introduction

In 2009 and 2010 a follow-up study funded by a grant from the Federal Highway Administration was undertaken to better understand the impacts of carsharing and unbundled parking on the behaviors and perceptions of residents living in buildings both with and without carshare vehicles and unbundled parking. Specifically the study sought to answer the follow questions:

- > Is vehicle ownership affected by whether residents own or rent their units and live in buildings with carshare vehicle access onsite?
- > Does the presence of carsharing within a building affect the daily commute mode? Are residents who live in a building with carsharing more likely to commute via alternative modes of transportation than those residents who do not have a carshare vehicle in their building?
- > Does unbundling the cost of parking from the cost of housing impact the residents' decision to lease or purchase a unit in the development?
- > Does the cost of parking impact the residents' decision to lease or purchase a unit in the development? Is that decision impacted by the presence of a competitively priced parking garage or the availability of on-street parking nearby?
- > Is the presence of a carshare vehicle in the building or nearby perceived as an amenity to tenants? To what degree, if any, does the perception differ between residents living in a building with unbundled parking versus those living in a building without unbundled parking?

To answer these questions a residential survey was undertaken. San Francisco was selected as the location for the study as it has been a model for establishing policies and requirements that encourage alternative modes of transportation and a lower rate of vehicle ownership. *Survey participants* were selected from four central San Francisco neighborhoods that have a high concentration of carshare Pods, regional and local transportation service, and new residential developments. Each potential survey property meets the following criteria:

- > Minimum occupancy rate of 70 units
- > Located within the South of Market, Rincon Hill, South Beach or Civic Center districts
- > At least 1 MUNI, BART or Caltrain station available within 1/2 a mile (roughly 10-minute walk) from the site.

A total of 13 properties were selected to participate in the survey. Of those 13 sites, seven (54%) are control sites (sites without carsharing and either unbundled or bundled parking) and six (46%) are case sites (sites with carsharing and either unbundled or bundled parking).

A survey focused on the following topics was distributed to all residents in the survey sites:

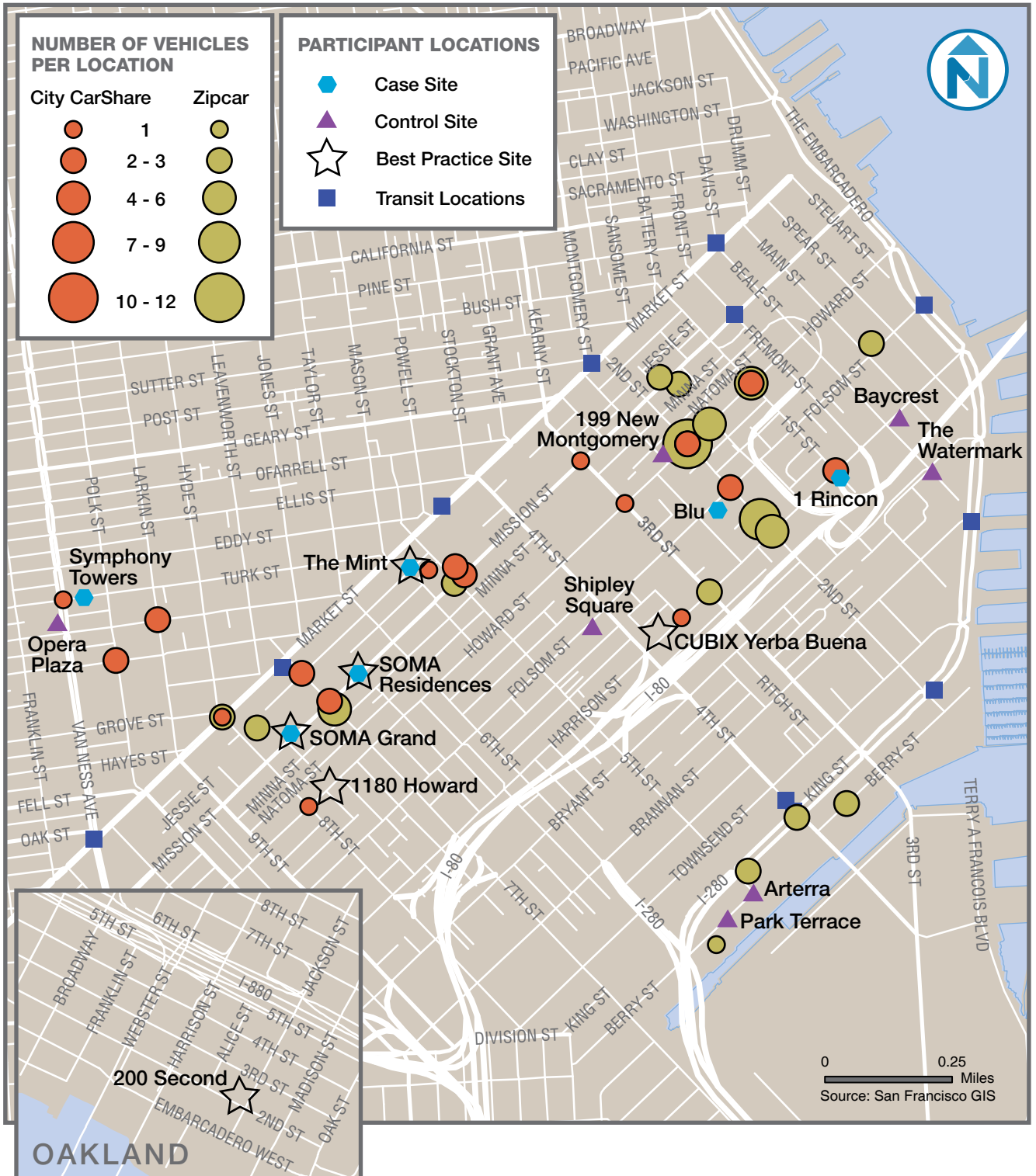
- > Vehicle ownership
- > Parking characteristics
- > Carsharing utilization
- > Commute mode characteristics and public transit usage
- > Demographic characteristics

Both a paper and online version of the survey were created. In order to ensure a greater number of survey responses, the survey period began after Labor Day weekend in September of 2009, as people tend to leave town for vacation throughout the summer, and officially closed at the end of January, 2010. A total of 298 responses were collected, of which 140 surveys were collected from case sites, for a response rate of 13%, and a total of 158 surveys were collected from control sites, for a response rate of 21%.

In addition to the data collected through the survey, additional physical data was collected for each of the survey sites including site characteristics, parking amenities and costs, locations of regional transit services, including BART, Caltrain, Transbay bus service, underground MUNI service, locations of carshare pods within a ¼ mile of the study sites and the number of vehicles located at these pods, and demographic data from the 2000 U.S. Census for the census tracts where the study sites were located.

A comprehensive analysis was undertaken to determine if there are any statistically significant differences between residents who live in buildings with carsharing and unbundled parking and those who live in buildings without carsharing and unbundled parking, with respect to vehicle ownership, parking, carsharing usage, and commute mode. Listed below are general findings from the survey.





# impact study: residence survey key findings

## Vehicle Ownership

- > The presence of both carsharing and unbundled parking within a building significantly reduces household vehicle ownership rates, with an average vehicle ownership rate of 0.76 vehicles per household for respondents with both carsharing and unbundled parking compared to an average vehicle ownership rate of 1.03 vehicles per household for respondents with neither.
- > There is a statistically significant relationship between age and vehicle ownership, with younger respondents having an average vehicle ownership rate of 0.95 vehicles per household compared to respondents 55 years and older who have an average vehicle ownership rate of 1.26 vehicles per household.
- > There is a statistically significant relationship between persons with a carshare membership and average vehicle ownership as compared to persons without a carshare membership. Respondents with carshare memberships had an average vehicle ownership rate of 0.47 compared to respondents without carshare membership who had an average vehicle ownership rate of 1.22.

## Commute Mode

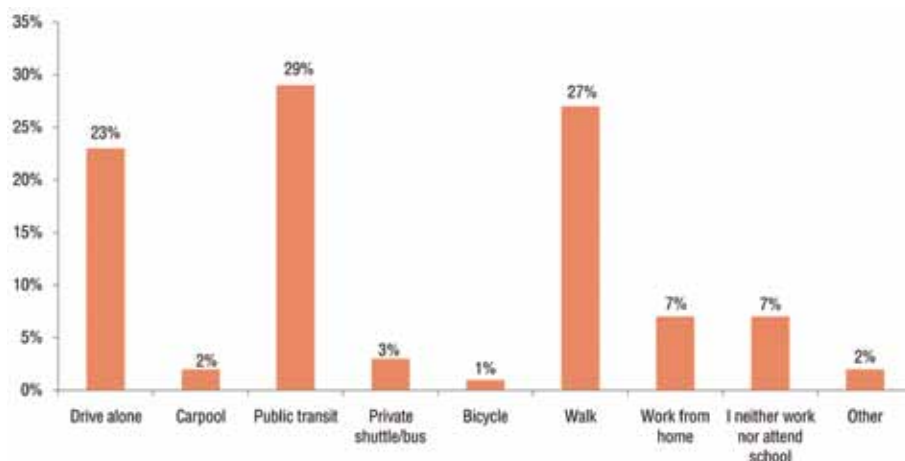
- > The availability of a carshare vehicle within a given building does not significantly affect the share of residents who take alternative modes of transportation to work as compared to buildings that do not have carsharing, with the exception of those persons commuting via foot. The number of case residents who walk to work is 19% greater than for the control sites (36% of case responses indicated that they walk to work compared to 29% of the control respondents).
- > There is a statistically significant difference in commute mode between those persons with carshare membership versus those without in that 85% of persons with carshare memberships use non-auto modes to commute to work compared to 75% of persons without carshare memberships.
- > More than 65% of respondents with carshare memberships take transit a few times a week or more compared to approximately 41% of respondents without carshare memberships. Based on the analysis there is a statistically significant difference in transit usage between those respondents with carshare memberships and those without.

**Figure 1 Average Household Vehicle Ownership Rates**

Characteristic	Average Vehicle Ownership	Statistically Significant
Age 18-54 (n=227)	0.95	Yes
Age 55 and over (n=68)	1.26	
Renter (n=65)	0.94	No
Owner (n=229)	1.04	
With Carsharing and Unbundled Parking (n=51)	0.76	Yes
Neither Carsharing nor Unbundled Parking (n=102)	1.03	
Carsharing Only (n=89)	1.09	No
Neither Carsharing nor Unbundled Parking (n=102)	1.03	
Unbundled Parking Only (n=56)	1.13	No
Neither Carsharing nor Unbundled Parking (n=102)	1.03	
Carshare Members	0.47	Yes
Non-carshare Members	1.22	



**Figure 2 Commute Mode of All Respondents**



### Carshare Membership Rates

- > Twenty two percent of respondents stated that they decided to join a carshare organization upon moving to their current location due to the presence of carsharing nearby or in their building.
- > The presence of carshare vehicles in a building does not significantly increase the proportion of residents who become carshare members as compared to residents who live in a building without carsharing. However, the presence of both carsharing *and* unbundled parking within a building affects residents' decision to become carshare members.

### Housing Location Decision

- > The presence of carsharing onsite or nearby was a significant factor in the residential location decision for survey respondents living in households with no owned or leased cars available. Seventeen percent of respondents who do not own or lease a vehicle stated that the presence of carsharing had a large impact on their decision to move to their current location while only 5% of respondents with a vehicle felt the same way. Of those respondents without vehicles, 42% stated that the presence of carsharing had no impact, while 67% of respondents with vehicles felt the same way.
- > Among residents with one or more vehicles, age had a significant impact on the decision to move into a building with carsharing. The results indicate that residents with 1 or 2 vehicles under the age of 55 were more likely to move to a location with carsharing than residents 55 years and older.

### General Findings

- > Utilizing 2000 U.S. Census data and excluding median income and tenure status, the demographic characteristics of residents surveyed at both case and control sites are not dramatically different from the census data.
- > Seventy-seven percent of survey respondent households own one or more vehicles.
- > Of the survey respondents who own at least one vehicle, 90% park their vehicle in their building's garage.
- > For 73% of respondents who rent their unit, parking is provided free of charge or included in the rental price. Over 58% of respondents who purchased their unit had parking included in the purchase price of their unit.
- > Survey respondents who lease parking pay an average of \$175 a month and respondents who purchased parking when they bought their unit paid an average one-time fee of \$37,500 per space. The national average price for a condominium parking space in 2009 was \$45,400.1
- > Out of 298 participants surveyed, 27% (79 respondents) are members of a carshare organization. Of those respondents, 42% are City CarShare members, 47% are Zipcar members and 11% are members of both carshare organizations.

<sup>1</sup> Victoria Transport Policy Institute; "Transport Costs & Benefit Analysis II- Parking Costs" [available online <http://www.vtpi.org/tca/tca0504.pdf>].



# best practices

## For Developers

**Consider whether exclusive-use carsharing makes sense.** Reserving carsharing vehicles for residents and staff can help with security and ensure that vehicles are available, but it may be an expensive option if demand is low.

**Provide for carsharing at the design stage.** Locked doors between a garage and the main building or a gate between the carsharing Pod and the secured parking area. This gives non-residents access to carsharing vehicles while avoiding the need to give exclusive access to tenants, which comes with the cost of paying the carshare provider for the exclusive access.

**Maintain flexibility.** It can be difficult to predict carsharing demand in advance; adjusting the number of vehicles based on usage may make more sense. If the developer and the carshare provider decide to add more vehicles, the new cars should be located next to or near the existing car(s) to support a user-friendly experience for members who already know where to find their carshare Pod. Planning ahead for this can pay-off.

**Promote carsharing to residents.** Advertisements in move-in packets and common areas, automatic memberships for tenants, and promotion by management staff with reminders every few months can help boost carsharing uptake and make residents aware of the amenity.

**Adjust unbundled parking prices.** Property managers can use regular market surveys of neighborhood facilities as a benchmark for parking prices. Or prices can simply be set high enough to restrict demand to the available supply.

**Lease rather than sell unbundled parking.** Month-to-month leases provide the flexibility to adjust parking rates based on demand and supply, give new residents the opportunity to obtain a parking space, and allow existing residents to give up a space they no longer need.

**Communicate.** Residents will often be unhappy about paying for parking, but may accept it if they understand that it is the norm in the neighborhood, or that rents or sale prices are lower as a result.

## For Planners

**Use carsharing and unbundling as mitigations or incentives.** These policies can offer incentives for developers to provide less parking in a project. Or they can simply provide a way for a Planning Commission to approve a project where physical or economic constraints preclude adhering to minimum parking requirements.

**Consider mandating carsharing and unbundling.** Mandates avoid the need for a case-by-case approach, and may be particularly valuable where no minimum parking requirements exist and thus there is no mechanism to offer carsharing or unbundling in return for below-code parking provision.

**Recognize variation in demand.** If carsharing is required, demand will warrant fewer vehicles in less dense neighborhoods with more limited transit service.

**Communicate benefits to developers.** While developers are understandably less keen on a mandatory program, those that have implemented carsharing report numerous advantages, particularly the amenity provided to tenants. Similarly, unbundling has helped properties to manage demand.

**Define &/or certify carsharing.** Cities will need to carefully define what qualifies as a carsharing service. To facilitate approval process, cities can create a certification for carsharing based on an established definition. The certification award should require carsharing organizations to demonstrate their environmental benefits.

**Enforce and monitor progress.** As San Francisco gains experience with its program, the need for monitoring and enforcement – particularly for unbundling – is becoming clear. Other cities should consider institutionalizing this from the outset.

**Consider requiring lease-only rather than for-sale parking.** Some developers have adhered to unbundling requirements according to the letter but not the spirit of the law, for example through providing opt-out provisions in the fine print of the contract. Sale of unbundled parking spaces, meanwhile, provides less flexibility for homeowners and property managers. Cities could avoid these challenges by defining unbundled parking on a lease-only basis.



# conclusion

San Francisco was the first city in North America to mandate both carsharing and unbundling in large developments. Together with other Bay Area cities that have required these policies on a case-by-case basis, the Bay Area provides a wealth of early experience and lessons for other communities.

Many developers, whose projects pre-dated the mandates or were too small to be subject to them, have implemented carsharing and unbundling on a voluntary basis. They see carsharing as a valuable amenity and marketing device, making units more attractive to tenants and purchasers and helping to compensate for reduced parking. This is confirmed in the resident survey as residents who do not own a vehicle were in fact influenced by the presence of a carshare vehicle onsite when they decided where to move. In developers' eyes, carsharing also helps give projects a sense of environmental friendliness. For projects seeking LEED certification, carsharing can provide an innovation point.

Unbundling can increase flexibility, as pricing can be increased or decreased to reflect current demand and market conditions – at least, when parking is leased rather than sold. In particular, when less than one space per unit is provided, it is an effective way to manage demand and allocate a limited number of spaces. It is also a source of revenue; unsurprisingly, however, paying for parking is not as popular among tenants.

Carsharing and unbundling can be considered as separate policies. However, as the findings of the resident survey show, there are also synergies to be realized. Unbundling can help create demand for carsharing, while carsharing can help compensate in residents' minds for having to pay for parking. In contrast, free and abundant parking reduces the demand for carsharing. Households with both unbundled parking and carsharing available in the building have significantly lower vehicle ownership and are more likely to be carshare members compared to households in buildings without carsharing or unbundled parking.

Affordable housing presents a particular set of opportunities and challenges for both carsharing and unbundling. On the one hand, lower-income households tend to own fewer cars, and so are more likely to appreciate the choice of whether or not to pay for a parking space.

These households can also save money by giving up a lightly used car in exchange for carsharing. However, some affordable housing funding policies do not allow developers to provide less parking in a project, meaning that while parking can still be unbundled via a waiting list, the benefits of raising revenue and managing demand are lost.

The focus of this report is on carsharing and unbundled parking in urban, transit-rich neighborhoods. These types of communities were the early growth markets for carsharing, partly because of the density of potential districts and partly because carsharing members make most of their trips by transit, walking, and cycling.

Carsharing has subsequently expanded into more suburban settings, particularly in neighborhoods centered around subway or commuter rail stations. While there is less experience with unbundling and carsharing as part of free-standing transit-oriented developments in suburban areas, the same principles are likely to apply, particularly if the vehicle(s) can be used by employees during weekdays and residents during weeknights and weekends. Ultimately, however, carsharing and unbundling help a development succeed with less parking. They will not be successful in an isolated development with abundant parking and few other incentives or opportunities for residents to give up their cars. The case studies and findings of the resident survey demonstrate that where parking is limited and alternatives to the private auto exist, carsharing and unbundling can work to give residents choice, reduce household vehicle ownership, increase the number of residents who join carshare organizations, help property owners effectively manage their parking supply, and reduce traffic impacts to the wider community.

## Further Reading

City CarShare (2005) *Bringing Car-Sharing to Your Community. Short Guide*. (Available at [http://www.citycarshare.org/download/CCS\\_BCCiYC\\_Short.pdf](http://www.citycarshare.org/download/CCS_BCCiYC_Short.pdf))

Cohen, A. et al. (2008) Carsharing: A Guide for Local Planners. *PAS Memo*, May/June 2008. American Planning Association. (Available at [http://www.innovativemobility.org/publications\\_by/pubs\\_topic.shtml](http://www.innovativemobility.org/publications_by/pubs_topic.shtml))

Millard-Ball, A. et al. (2005) Car-Sharing: Where and How It Succeeds. *TCRP Report 108*. Transportation Research Board. (Available at [http://onlinepubs.trb.org/Onlinepubs/tcrp/tcrp\\_rpt\\_108.pdf](http://onlinepubs.trb.org/Onlinepubs/tcrp/tcrp_rpt_108.pdf))



## Contact information:

City CarShare  
1182 Market Street, Suite 300  
San Francisco, CA 94102  
[www.citycarshare.org](http://www.citycarshare.org)  
415-995-8588

Project Funded by Federal Highway Administration



December 2011