

District Department of Transportation
Curbside Carsharing Evaluation

December 2007

DDOT is committed to reducing congestion and parking problems with innovative transportation options such as carsharing which provides the mobility of a car without the expense and hassle of car ownership.

CARSHARING DEFINED

Carsharing is a shared-use vehicle program offering short-term rental service for individual members and businesses. Vehicles are geographically distributed to serve members and are rented on an hourly basis. All vehicle costs, including gas, maintenance, insurance and storage are included in the rental fee. Vehicles are reserved and checked out for a specific time period and returned to their designated storage locations upon completion of the trip to await the next user.

CARSHARING IN WASHINGTON, DC

Carsharing began in Washington, DC in 2001 when two private companies, Flexcar and Zipcar, began operations in the region. Since that time, a low emission fleet of cars has been growing near Metro stations and neighborhood centers throughout the District. For an annual fee of approximately \$25 and for an hourly fee of between \$5.00 and \$11.00 residents can obtain the use of a car without the large costs associated with purchase. Depending on how often and how far a person normally drives, carsharing can be cheaper than owning a car. A general rule of thumb from two years ago was that carsharing becomes economical if a person drives less than 10,000 miles per year.

CURBSIDE PARKING FOR CARSHARE VEHICLES

DDOT has provided a limited number of strategically-placed curbside parking spaces for the exclusive use of carsharing vehicles to educate the public about the benefits (both public and private) of carsharing. DDOT worked closely with both carshare companies and Advisory Neighborhood Commissions when selecting the curbside parking spaces. DDOT was aware of concerns from residents that on-street parking was already in short supply and no Residential Parking Permit (RPP) spaces were designated as carsharing spaces. Additionally, DDOT tried to avoid assigning carsharing parking spaces to metered locations.

The final rule which established this program was published in the DC Register on May 20, 2005 (52 DCR 4744). It can be found in Title 18 of the DC Municipal Regulations Sections 2406.12 and 2406.13. A copy of the rule is attached as Appendix A. Pursuant to this rulemaking, each carsharing company must have a signed agreement with DDOT in order to obtain access to designated curbside parking spaces. A copy of the contract template is attached as Appendix B.

In October 2005, DDOT implemented the first phase of the curbside carsharing with the installation of 48 curbside parking spaces distributed throughout the city. The second phase was implemented the following March with the addition of 38 curbside parking spaces. The 86 spaces were distributed evenly between Flexcar and Zipcar.

DDOT now wishes to ask the following questions to evaluate its practice of designating curbside parking spaces for carsharing vehicles:

- Are more people aware of carsharing?
- Are more people using carsharing?
- Are the people using carsharing giving up existing personal vehicles or forgoing the purchase of new ones?
- Does actual experience with carsharing indicate that it helps reduce traffic congestion and air pollution?
- Does actual experience with carsharing indicate that it can enhance mobility options for low-income people?
- Has the program created hardships for people who do not participate in car-sharing?

There are approximately 260,000 public on-street parking spaces in the District of Columbia. Roughly 16,000 of those spaces are metered. Of the 86 spaces designated for carsharing vehicles, 41 were metered spaces while the remaining 45 spaces were newly created from formerly unregulated curbside space or space where parking had been prohibited.

No Residential Permit Parking spaces were converted to carsharing spaces, thus minimizing the impact of the program on residents. The 41 metered spaces converted to carsharing spaces are dispersed throughout the city and were vetted with the Advisory Neighborhood Commissions. Thus, negative impacts on merchants from reduced customer parking should be minimal. DDOT received one complaint from a merchant about an existing carsharing parking space in front of his business since the program was implemented.

District incurred expenses for designating the curbside carsharing spots. Costs for ordering and installing signs and painting the asphalt were approximately \$75,000 for the demonstration period. The District also lost about \$75,000 in revenue from the 41 metered spaces that were designated for carsharing. Thus the total cost of the carsharing program to DDOT was about \$150,000.

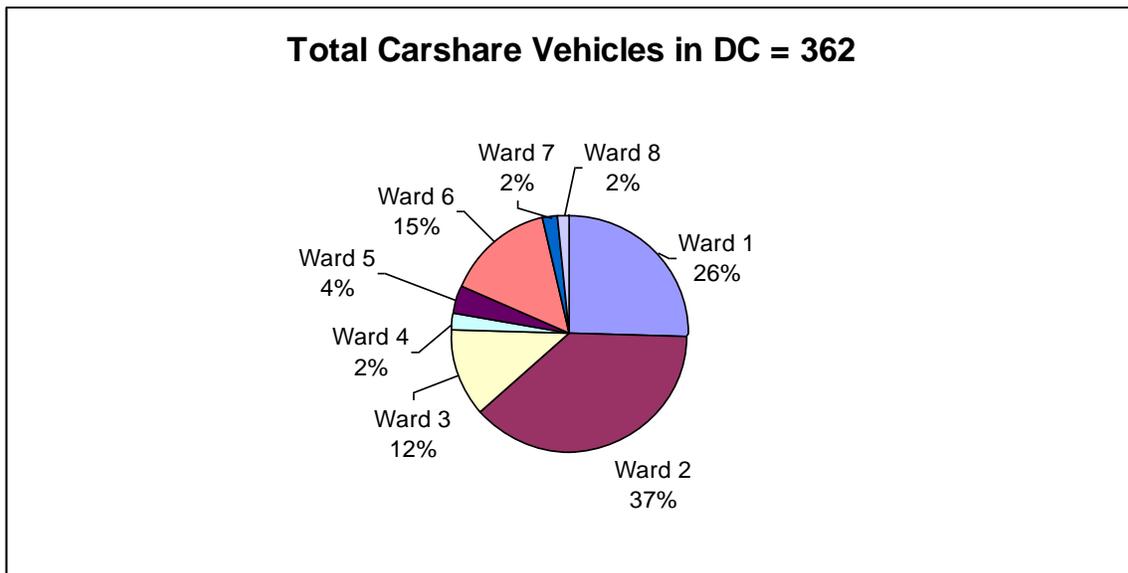
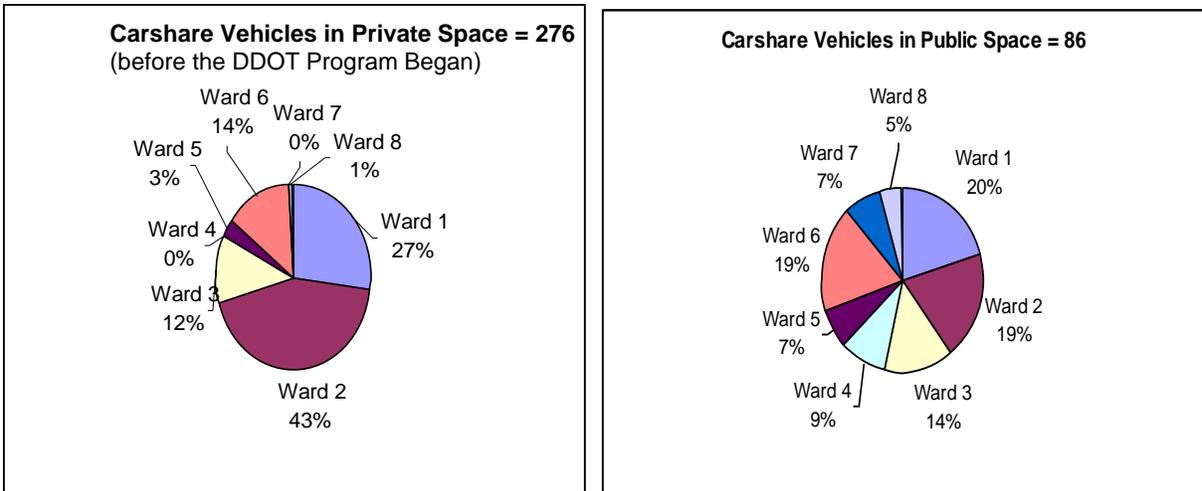
CARSHARING FOR ALL INCOMES

An important aspect of this program is to provide an opportunity to use carsharing throughout the District and particularly in low-income neighborhoods. While pockets of low-income households can be found in most wards, the following are a few examples of how the DDOT program has made a difference in this regard.

Prior to the implementation of DDOT’s carsharing program, there were no carshare vehicles located in Ward 4 or Ward 7. At that same time, there were only 2 carsharing vehicles in Ward 8 and only 8 in Ward 5.

Under agreements between DDOT and the two carsharing companies, DDOT requires both Flexcar and Zipcar to locate carsharing vehicles in low-income neighborhoods. Thus DDOT required the addition of 8 cars in Ward 4 and 6 cars in Ward 7. DDOT also required the companies to add 6 cars to Ward 5 and 6 cars to Ward 8.

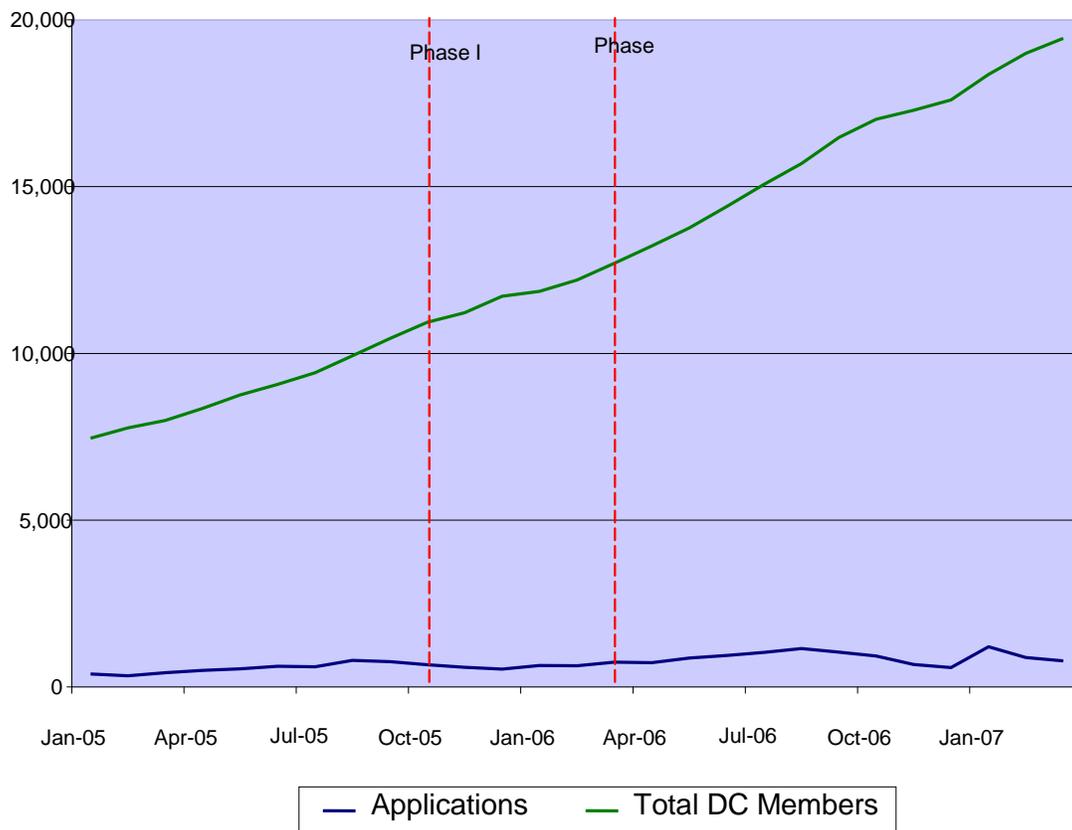
As illustrated by the charts below, DDOT’s program has helped make carsharing vehicles more accessible by mandating broader geographic coverage that also provides accessibility to more low-income households.



MEMBERSHIP GROWTH AND UTILIZATION

Carshare membership in the District increased steadily from approximately 7,500 members in January 2005 to almost 20,000 members as of March 2007. This membership growth is a 160% increase in a little over two years. The rate of membership growth (new applicants per month) also increased slightly over time. The first increase coincided with the publication of the rulemaking (summer 2005) and a second surge appeared after the implementation of Phase II (summer 2006).

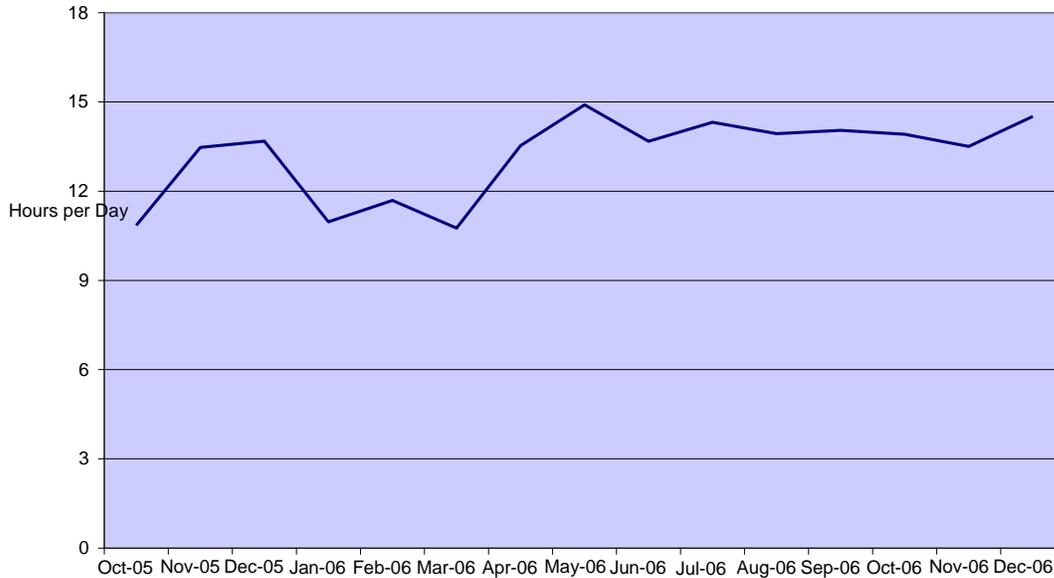
Carshare Membership Data



The growing rate of membership applications indicates that more people are aware of carsharing in the District. There was significant publicity about carsharing during pre-implementation (newspaper articles) and after implementation (articles and a feature story by the DC Office of Cable Television). These stories, associated with DDOT's designation of curbside spaces for carsharing vehicles, have increased public awareness about the carsharing concept. In addition, DDOT added carsharing information to its web site and to www.goDCgo.com, DDOT's multi-modal traveler information website. Perhaps some of the increase in the rate of membership growth is due to publicity and

visibility associated with DDOT’s program. (The carsharing companies and WMATA continued to provide their own marketing of carsharing services during this period.) Utilization of carshare vehicles is based on the number of hours in a 24 hour day that the vehicle is used. The graph below illustrates the average daily usage of all curbside carshare vehicles since the program began in October 2005 through December 2006. In general, utilization has increased.

Use of On-street Carshare Vehicles



A noticeable decline in utilization (rental hours per car per day) occurred shortly after 48 new carsharing vehicles were placed into service as a result of Phase I of DDOT’s carsharing program in the fall of 2005. A more modest reduction occurred after the introduction of 38 new carsharing vehicles as a result of Phase II of DDOT’s carsharing program in the spring of 2006.

It is not surprising that a sudden influx of new carsharing vehicles would result in a decline in the per vehicle utilization rate. Nonetheless, the utilization of carsharing vehicles appears to be increasing over time in spite of the fact that DDOT’s program added 86 new vehicles to the carsharing fleet in a short amount of time.

ADDITIONAL IMPACTS

Carsharing allows many people to have auto access while using fewer cars than if each individual or household owned its own car. Therefore, carsharing has the potential to reduce parking and traffic congestion. Experiences in other cities as well as independent studies show that a single carsharing vehicle can be used by 20 members and achieve a good balance between utilization of the vehicle and availability to members. In the

District, this number is higher with approximately 50 members for each carsharing vehicle.

According to a 2005 Transportation Research Board report, an average of 21% of members in North America give up a vehicle after joining a carsharing program and that each carsharing vehicle is estimated to take 14.9 private cars off the road. Applying this number to the 362 carshare vehicle in the District of Columbia, potentially 5,394 private cars have been taken off the road.

Flexcar and Zipcar conducted a member survey in March 2006 in cooperation with DDOT, WMATA and Arlington County in which a total of 1,916 DC residents responded. Approximately 30% of the respondents indicated that they sold their car as a result of being a member in a carsharing organization and 61% reported that they have postponed purchasing another car. These numbers are not mutually exclusive. It is possible that the members that postponed purchasing a car also gave up their car as a result of the carsharing membership. This data illustrates that actual carshare users are giving up their personal vehicles or forgoing the purchase of a new one.

Additionally, as part of the agreement with DDOT, the carsharing companies have agreed to ensure that the fleet average of vehicles permitted in public space comply with the ultra low emission standards as determined by the EPA. Air quality benefits are realized both through less overall vehicle travel and the use of newer, fuel-efficient vehicles.

There have been a few instances where DDOT has received complaints from non patrons about the designation of spaces. Some merchants objected to a proposal from another community organization to designate carsharing spaces on their block. DDOT has assured these merchants that it will not designate spaces in their area unless the ANC requests them and no such request has been forthcoming. One merchant complained that carsharing spaces in front of a business impaired loading activities. There is also a resident who used to park a private vehicle in an unregulated curb section that has now been designated for exclusive carsharing use. This individual and her ANC have petitioned DDOT to have the spaces moved, but no alternative spaces have been identified where a similar problem would not exist. For this reason, and because the carsharing vehicles in the existing location are well-utilized, DDOT is not moving or removing these designated spaces.

Finally, DDOT has received anecdotal evidence that carsharing patrons are more likely to use a carsharing vehicle when it is parked at the curb (well-lit and visible to passers-by) than when it is parked in an alley and not visible from the street.

IDENTIFIED CHALLENGES

DDOT's goal is to educate people about carsharing by designating appropriate places for exclusive curbside parking for some of these carsharing vehicles. The initial challenge of identifying appropriate spaces was overcome through cooperation between Advisory Neighborhood Commissions and the carsharing companies.

The most critical challenge to DDOT's carsharing initiative is the enforcement of parking regulations that prohibit non-carshare vehicles from parking in the designated curbside parking spaces. DDOT has been working with the Department of Public Works (DPW) and Metropolitan Police Department (MPD) to resolve this issue. DPW has been responsive to the new regulations by ticketing vehicles illegally parked in curbside carshare parking spaces. Unfortunately, there has been difficulty getting these vehicles towed once they are ticketed. This is due in part to a lack of tow trucks and also to the fact that MPD has been reluctant to write tickets and call for tows.

Another challenge has been coordinating special events, road construction or utility work with carsharing companies when a special event or construction disrupts designated carsharing parking spaces.

When a designated home parking space for a carsharing vehicle is unavailable because of an illegally-parked car, construction work, etc, members find it difficult to obtain or return a carsharing vehicle. The first member's difficulty in this regard triggers a chain reaction that ultimately makes carsharing frustrating and less desirable to several members.

On October 10, 2007, a lawsuit was filed against the carsharing companies and the District Government regarding the accessibility of carsharing vehicles to persons with disabilities. DDOT was unaware of this issue until the lawsuit was filed. Although DDOT cannot comment on this suit, DDOT is committed to compliance with the Americans with Disabilities Act.

CONCLUSION AND RECOMMENDATIONS

It appears that the provision of a limited number of strategically located curbside parking spaces designated for exclusive use by carsharing vehicles has accomplished DDOT's primary objectives:

- More people are now aware of carsharing services
- Many people participating in carsharing are reducing car ownership by selling a car or avoiding the planned purchase of a car. To that extent, the program is
 - Reducing parking congestion
 - Reducing traffic congestion
 - Reducing pollution
 - Increasing the disposable incomes of households who find it cost-effective to reduce or avoid car ownership. Household funds that had been or would have been transferred to auto-making regions are now available to be spent within the local economy.
- Individuals unable to afford the purchase of a car have a greater opportunity to use a car on occasions when a taxi or a rental car would not be as convenient.

Total program costs to date are approximately \$150,000. Future costs include approximately \$75,000 annually from forgone parking meter revenue. Additional future

costs include \$40,000 for more permanent striping of the asphalt to identify these spaces and discourage illegal parking.

DDOT has the right to charge a fee to the carsharing companies in exchange for granting them designated curbside spaces. At the time DDOT implemented this program, both Zipcar and Flexcar were start-up companies whose long-term profitability has not been assured. Furthermore, DDOT-imposed costs would be passed through to customers.

Because DDOT is seeking to encourage participation in carsharing services, it made sense for DDOT to avoid causing any increase in carsharing prices. Indeed, it would appear that competition between the two companies and increased utilization rates have caused hourly rates to remain steady or even decline in spite of the fact that fuel costs are included and fuel costs have been rising.

However, Zipcar and Flexcare have recently announced their merger into one company. In light of this fact, DDOT feels that it is now appropriate to impose a charge for the merged company's access to public space. Approximately half of the 86 spaces initially designated for carsharing vehicles had been metered parking spaces whose average estimated revenues were \$1,782 per meter per year. Charging this amount for all 86 spaces would yield \$153,252.

The program realizes a number of benefits including reduced parking and traffic congestion, air quality improvements, and increased mobility options for District residents. Given the importance of these benefits and the importance of continuing to encourage reduction in private vehicle ownership and use, DDOT's initial financial investment in this program appears to be cost-effective.

Based on these findings, DDOT intends to continue the program and renew contracts with the individual carsharing companies. Because the primary intention is to provide public education, DDOT is not seeking to vastly expand the number of designated curbside parking spaces for car-sharing vehicles. However, DDOT will consider requests from community groups or ANCs on a case-by-case basis for the designation of some new curbside spaces for exclusive use by carsharing vehicles. DDOT will also propose charging \$1,782 per space when renegotiating the MOA with Zipcar. Revenues will be used to compensate DDOT for asphalt striping and other associated expenses.

DDOT is working with a professional survey firm as part of our participation in the regional Commuter Connections program to provide additional data about the importance and value of publicly provided curbside parking for carsharing vehicles. Among other things, DDOT particularly wants to know:

- If business participation in carsharing – making these vehicles available to employees for mid-day trips – helps participating employees rely more on transit than a private auto as their regular commute mode;
- The importance of designated curbside parking to patrons who otherwise would be reluctant to use carsharing vehicles if they were parked in alleys;
- The impact of carsharing in low-income neighborhoods; and

- The extent to which the unauthorized use of carsharing parking spaces detracts from the value of the program. Based on the survey results and DDOT's success in improving enforcement, DDOT intends to charge the carsharing companies for access to public space once enforcement becomes reliable. The survey work will be undertaken in Fall of 2007 with results available in early Spring 2008.

As mentioned above, designating curbside spaces for exclusive use by carsharing vehicles is challenged by a significant amount of parking by unauthorized vehicles in these spaces. A number of actions have been identified to help resolve the enforcement challenge. The first step is to more clearly identify the curbside carsharing parking spaces with more durable and highly visible pavement markings. Furthermore, additional signage could be affixed to the orange carsharing poles at mid-level so they are visible from inside vehicles. These steps should help discourage drivers from parking personal vehicles in carsharing spaces in the first place.

DDOT also needs to work more closely with MPD to provide education about carsharing policies. DDOT must illustrate why enforcement is so critical not only to the success of the program but also to the mission of MPD. In the District, MPD must devote a significant amount of time to collisions. Some of these collisions may result from hasty attempts to seize an open parking space. To the extent that carsharing can reduce parking congestion and thereby reduce congestion-induced collisions, MPD can spend less time responding to traffic collisions and more time dealing with crime prevention and response. A vigorous period of enforcement should encourage voluntary compliance which would reduce the amount of enforcement effort required in the future. The support and buy-in of MPD is critical in order to guarantee that on-street parking of carshare vehicles operates as it is supposed to.

Finally, DDOT needs to explore the possibility of providing carshare companies with towing authority. The only way a carshare company can initiate a tow, is to call the Mayor's call center and report an illegally parked vehicle. These calls do not always result in ticketing and towing. These private companies have a vested interest in the success of this program, which is only possible through strict enforcement of parking regulations. If Flexcar and Zipcar were able to have illegally parked vehicles towed, they would be able to resolve the problem in a timely and efficient manner.

